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**The development and validation of the North Carolina
Elementary Measures of Music Achievement: Five test batteries
for grades one through five**

Warren, Mary Ann Lynn, Ph.D.

The University of North Carolina at Greensboro, 1994

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**300 N. Zeeb Rd.
Ann Arbor, MI 48106**

THE DEVELOPMENT AND VALIDATION OF THE *NORTH CAROLINA*
ELEMENTARY MEASURES OF MUSIC ACHIEVEMENT: FIVE
TEST BATTERIES FOR GRADES ONE THROUGH FIVE

by

Mary Ann Warren

A Dissertation Submitted to
the Faculty of the Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Greensboro
1994

Approved by

A handwritten signature in cursive script, reading "Patricia E. Smith", written over a horizontal line.

Dissertation Adviser

WARREN, MARY ANN, Ph.D. The Development and Validation of the *North Carolina Elementary Measures of Music Achievement: Five Test Batteries for Grades One through Five*. (1994). Directed by Dr. Patricia E. Sink.

The purpose of this study was to develop the *North Carolina Elementary Measures of Music Achievement*. The primary objective of this study was to construct a useable, valid and reliable test of music achievement for grades one through five in North Carolina, and a sufficiently comprehensive test to measure adequately the concepts included in state-adopted textbooks (Silver Burdett and Ginn, *World of Music*, 1988 and Holt, Rinehart, and Winston *Music*, 1988) and in the *North Carolina Standard Course of Study*. The aurally presented test was administered to a sample of 117 students in grades one through five in North Carolina. Raw scores were analyzed using descriptive and inferential statistics. To analyze NCEMMA for bias and to provide foundational research for future standardization, effects of grade, age, gender, race, parents' education and parents' occupation were examined using one-way analyses of variance. Test qualities for each grade level were analyzed for content validity, for item difficulty and discrimination, and for reliability and standard error of measurement. Following data analyses, evaluation of students' test performances and assessment of NCEMMA test qualities, recommendations for revisions were made. At the current stage of developing and validating the *North Carolina Elementary Measures of Music Achievement*, the five test batteries were found to be useable, valid and reliable for measuring elementary students' music achievements.

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APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of the Graduate School at the University of North Carolina at Greensboro.

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CHAPTER I

INTRODUCTION

Printed and electronic media are making educational achievement the headline of many news reports. The public is bombarded by reports of *Scholastic Aptitude Test* (SAT) scores and of improved teaching techniques and school restructuring efforts that are being tried nationwide. States with low overall achievement scores are addressing elements of characteristics in public school systems which do not seem to contribute to increased educational achievement.

The need for adequate tools to measure music achievement has been recognized by many music educators. Schmidt (1984) called for the development of criteria and measurement standards that could determine the impact of music programs in public schools. Lehman (1986) suggested that achievement standards for music students should be adopted. The *Documentary Report of the Tanglewood Symposium* recommended that measurements of music achievement be developed at elementary, secondary, college, and adult levels (Shetler, 1968).

Some researchers maintain that the development of achievement tests influences the content of the subject matter that is taught (Swinchoski, 1965; Hudson, 1986; Boyle, 1989). Swinchoski maintains that the development of achievement tests in arithmetic, spelling, reading, and other subjects influences the content of the subject matter and suggests that the development and validation

of music achievement tests help to standardize the goals and objectives of music teaching and learning.

Evaluating and accurately measuring achievement are essential concerns for arts educators. This study was designed to develop and validate a measurement tool which reflects the goals and objectives outlined in the *North Carolina Standard Course of Study* (1985) and in the basal music textbooks adopted by the state. Specifically, this study was designed to develop and validate the *North Carolina Elementary Measures of Music Achievement*, consisting of five test batteries for grades one through five.

Background of the Problem

Music education in the United States no longer consists of educators, untrained in music, singing songs with students for recreation. The North Carolina State Department of Public Instruction supports music as a basic subject which helps students appreciate and recognize music for its beauty and human expressiveness communicated through nonverbal modes (*North Carolina Standard Course of Study, NCSCOS, 1985*). The role of music education serves "to provide a well-developed understanding and capability for nonverbal communication," and is described as both "vital" and "basic" (NCSCOS, 1985, p. 51).

Specific public school music curricula are determined by both local school boards and music educators in the schools. Local schools establish schedules for instruction and provide materials and equipment. Results from music

achievement tests can be used by local school systems to assess strengths and weaknesses in programs designed to facilitate attainment of knowledge and skills at each grade level, including grades one through five. Section 5 of General Statute 115C-174.11(a) mandates that the State Board of Education adopt and provide local school administrative units developmentally appropriate individualized assessment instruments consistent with the Basic Education Program (BEP) for the first and second grades. Additionally, General Statute 115C-174.11(c) states that:

The State Board of Education shall adopt a system of end-of-course and end-of-grade tests for grades three through twelve. These tests shall be designed to measure progress toward selected competencies . . . described in the Standard Course of Study for appropriate grade levels. (*An Invitation to School Improvement in North Carolina*, 1989, p. 29).

The statute further states that achievement information may be used to help identify and correct student deficiencies in basic skills. The statute maintains that the use of test results for comparison of individual students or for the evaluation of teacher performance is inappropriate.

The *North Carolina Standard Course of Study* has established: (a) competency goals, (b) objectives, and (c) measures of competencies. Competency goals are broad statements of general direction or purpose. Objectives are specific statements of what a student will know or be able to do as a result of instruction. Measures are suggested ways in which students may demonstrate abilities to meet instructional objectives. The NCSCOS competency measures

informally assess behaviors in classroom settings and are not designed to provide comparative results or to determine attainment of competency goals and objectives upon completion of a grade level. End-of-grade tests that formally and collectively measure music achievement have not been established. Because achievement must be measured in each required subject in the North Carolina Basic Education Program, the evaluation and measurement of achievement in music in the public schools is supported legislatively. More importantly, measurement and evaluation of music achievement is essential and fundamental to the advancement of music instruction and students' music development.

Although music is identified as a basic subject in the *Basic Education Program for North Carolina's Public Schools* (1988), end-of-grade tests have not been developed. Competency goals and objectives are stated in both the *North Carolina Standard Course of Study* and *North Carolina Competency-Based Curriculum* (1985). The curriculum guide recommends concepts and skills that should be taught in each subject from kindergarten through eighth grade. Achievement tests are needed to measure attainment of competency goals and objectives.

The Music Educators National Conference (MENC) has responded to a national emphasis on accountability in the formation of its goals. Two measurement goals supported by MENC are to identify learning outcomes for music education and to develop and disseminate appropriate models for student assessment and program evaluation (*Soundpost*, September, 1992, p. 7). Such

measurement goals must reflect the national emphasis on competency-based education which precisely identifies competency goals and objectives. The growth of the accountability movement can be attributed to the realization that educational systems throughout the United States have not met the needs of society.

According to Boyle and Radocy (1987), accountability serves as a quality control function. While public funding is a major factor in the accountability movement, continuation of programs which do not produce evidence of some form of quality assessment will be at risk (Boyle and Radocy, 1987). In a time when the public demands objective data to substantiate progress occurring in all classrooms, music educators need methods and tests to measure not only what is learned but also to determine successful strategies for effective teaching. Achievement tests in music, as in other subject areas, are crucial for evaluating student strengths and weaknesses, and for evaluating a music education curriculum.

Measurement of Music Behaviors

Hudson (1986) presented the results of a survey of *Tests in Print*, 1983. Of thirty tests designed to measure musical aptitude and achievement, Hudson cited nine tests which evaluated students' abilities in the third grade and above. Hudson concluded that "there exist today very few tests that measure the musical achievement of students younger than third graders" (Hudson, 1986, p. 13).

Hudson cited one test, the *Primary Measures of Music Audiation* (PMMA, Gordon, 1979) which was developed specifically for students in kindergarten through third grade. The test was designed to measure students' abilities to audiate. "Audiation" is a term used by Gordon to describe what "takes place when one hears and comprehends music for which the sound is not physically present" (Gordon, 1989, p. 3). Gordon's PMMA is classified as an aptitude test, not as an achievement test.

In the *Mental Measurements Yearbook* (Buros, 1949, 1953, 1959, 1961, 1965, 1972), and *Tests in Print* (Buros, 1974; Mitchell, 1983), this researcher found no music achievement test written specifically to test grades one through five, or to measure students' mastery of concepts and skills included in North Carolina's state adopted textbooks and the *North Carolina Standard Course of Study*. Identified music concepts within the NCSCOS are melody, rhythm, form, timbre, expressive qualities (i.e., tempo, dynamics, articulation, texture, style) and harmony. Skills are singing, listening, playing instruments, reading music, and talking about music. The curricula included in the state-adopted textbooks also emphasize these concepts and skills and are considered means to facilitate student acquisition of the curricula goals and objectives supported by the NCSCOS. The current study was designed to develop and validate a test to measure achievement across the aforementioned concepts, and associated skills of listening, reading, and talking about music.

A music achievement test can be used to communicate the goals and objectives of music education to parents, administrators, classroom teachers, and students. A well-constructed test also can give music teachers a valid and reliable instrument with which to assess the progress of their students. Too often grades in music education are based on student social skills, conduct, and attendance rather than on music achievement. Colwell (1971) suggested that teacher ratings are influenced by irrelevant information such as effort and personality and, consequently, are unreliable. These evaluation practices are unacceptable in other basic subjects; music educators can eliminate such unacceptable practices by using valid and reliable assessment strategies and achievement tests.

Bentley (1966), Shetler (1968), Farnsworth (1969), Colwell (1970), Schmidt (1984), Lehman (1986), and Boyle (1989) agree that the study of music is a field in which measurement and evaluation have not assumed prominent roles. Boardman (1990) emphasizes the need for developing assessment strategies to enhance general music curriculum and instruction. She suggests that the development of quality assessment tools promotes research on general music teaching and learning. "Processes for achievement assessment must be developed, and procedures for evaluating large numbers of students quickly and accurately must be designed" (Boardman, 1990, p. 14).

Colwell (1963) states that the area of evaluation has been "strangely neglected," and that establishing objectives is a useless endeavor if there is no intention or process to evaluate if and to what extent objectives are being

achieved. Boyle (1989) maintains that music educators must be able to document students' abilities as a result of past experiences and must be able to provide objective evidence of accomplished skills and knowledge to students, parents, and administrators. "Judicious application of tests, testing procedures, and measurement techniques will enhance the quality of the objective information base" in music education (Boyle, 1989, p. 22). The need for a test which can be used in a group setting to evaluate individual music achievement and conceptual development in North Carolina has not been met. The development of the *North Carolina Elementary Measures of Music Achievement* responds to this need.

Definition of Music Achievement

During the Ann Arbor Symposium in 1981, Sidnell defined music education as a study of the nature and modification of human music abilities. He emphasized the need for a rational framework upon which "a fabric of process can be woven to effect well-directed change in the people we teach" (Sidnell, 1981, p.29). In *The Enlightened Eye*, Eisner identified evaluation practices, including testing, as one of the "most powerful forces influencing the priorities and climate of schools" (1991, p. 81). Evaluation practices identify what is important for both teachers and students. Reimer (1989) encouraged music educators to redefine musical achievement in terms of how well the processes of musical intelligence are being developed. Boyle and Radocy (1987), however, cautioned test makers, psychologists, and educators that definitions of talent,

capacity, aptitude, ability, and achievement have different connotations and are used to differentiate between levels of performance on selected musical tasks. Throughout this study music achievement will be used to define the degree of success attained as a result of some past music learning activity directed toward the mastery of competencies in music.

State-Adopted Textbooks

The Textbook Commission of North Carolina has stressed that the body of knowledge presented in adopted textbooks will adhere to the philosophy, goals, and objectives for the course or subject area under consideration, such as music (*North Carolina State-Adopted Basic Textbooks*, 1984-85). Radocy (1989) maintains that clarification of instructional objectives is the first stage of planning for evaluation. To develop concise statements of goals, objectives, and philosophy for a subject area under consideration, members of the North Carolina Textbook Commission cooperate with the staff of the Department of Public Instruction. In 1988, the result of this cooperative effort was the adoption of two basal textbook music series: Holt, Rinehart, and Winston *Music* (1988), and Silver Burdett and Ginn *World of Music* (1988). Radocy (1989) also states that an achievement test is appropriate only if the objectives on which it is based match the local objectives. The *North Carolina Elementary Measures of Music Achievement* reflected the local objectives as presented in the two state-adopted

textbooks; also, it was designed to provide a formal measure of the competency goals and objectives of the *North Carolina Standard Course of Study* (1985).

Limitations of the Study

The design of this study was limited to students in grades one through five and attending a North Carolina public school. Selection of students was limited to students taught by a music specialist at schools which use the Silver Burdett and Ginn *World of Music* (1988) or Holt, Rinehart, and Winston *Music* (1988). Additionally, test content limitations included skills and knowledge associated with the concept categories of melody, rhythm, form, timbre, harmony, and expressive qualities (tempo, dynamics, articulation, texture, and style), as described in the *North Carolina Standard Course of Study* and used in the two state-adopted textbooks. Definitions of the content categories are provided in Chapter III.

Statement of Purpose

The purpose of any achievement test, according to Colwell (1970), is fourfold: (a) to encourage talented students, (b) to individualize instruction, (c) to formulate educational plans, and (d) to provide teachers and parents with objective information. The purpose of this study was to develop a useable, valid and reliable music achievement test which can be used across the basal textbook music series for grades one through five in North Carolina. The content of both music textbook series included the concepts of melody, rhythm, form, timbre,

expressive qualities (tempo, dynamics, articulation, texture, and style). The validity of the test was based on these content areas of music learning and was designed to provide evaluation of music achievement by students and to provide a means to assess strengths or weaknesses in lesson presentation strategies.

The value of testing is not to predict success of study but to improve learning efforts of students and to improve teaching strategies. The value of a test like the *North Carolina Elementary Measures of Music Achievement* is to identify individual student needs, to improve instructional planning, and to provide objective information to students, parents, teachers, and administrators.

Accomplishing the research objectives of this study provides information which contributes to making decisions that affect learning opportunities and teaching strategies as well as to improving evaluative decisions about student needs and student progress.

CHAPTER II

RELATED LITERATURE

Accountability, according to school boards, government agencies, and the public, is a demand for the maintenance of quality educational programs. To ensure that the needs of students and the community are adequately served, quality of program content and teacher effectiveness must be evaluated and student achievement must be measures. States in which achievement scores are low are addressing and attempting to correct educational strategies which do not increase achievement scores. Tools that can be used in a group setting are necessary for music teachers to identify student potential (aptitude) and to measure what students have learned as a result of instruction (achievement).

Although this study is directed toward developing a music achievement test, some experts have difficulty distinguishing between ability and aptitude. Colwell (1970) addressed the problem of separation of aptitude and achievement. He concluded that whether musical talent is inherited or learned it appears before much formal learning has taken place even though it cannot be measured until the child is relatively mature. Numerous music researchers and educators have discussed the definition of music aptitude as a potential for learning. Bentley (1966) defined musical ability as being able to make basic elemental judgements necessary in making music. Lundin (1967), Mursell (1931), and Wing (1948)

agreed that music ability is a single ability that is developed through environmental experiences. Gordon (1980) and Seashore (1960), however, analyzed music into components and separate abilities, such as auditory discrimination of pitch, rhythm, loudness, harmony, and other musical elements.

The nature and nurture argument continues in the professional music education literature. The experts who agree that ability is inherited, however, do admit an environmental influence on the development of music ability. Gordon (1985) concluded that musical aptitude is a product of both environmental influences and innate ability. Additionally, Gordon concluded that "although aptitude fluctuates throughout the primary grades, it becomes impervious to practice and training at about age ten" (Gordon, 1985, p. 7). Reimer (1989) encouraged music educators to redefine achievement as an indicator of how well music intelligence is cultivated. The design of any music achievement test, such as the *North Carolina Elementary Measures of Music Achievement*, should include research findings about children's music development as well as reflect the content presented in lessons for training and practice.

Literature reviewed in this chapter includes information on measuring music achievement, information on test design and development, and music development of children. Additionally, the content of the basal music textbooks is examined as it relates to concept presentation, skill development, lesson objectives, and the establishment of definitions of concept categories of the elements of music as they relate to test validity.

Survey of Tests Measuring Elementary Music Achievement

A survey of tests by Hudson (1986) revealed sixteen tests currently in print which purport to measure music aptitude or music achievement. Of those tests, only one achievement test was available for use with children in grades one through five; it was based on the content of one basal textbook series by Silver Burdett. *The Silver Burdett Music Competency Tests (SBMCT, Colwell, 1979)*, was developed to be used with the music series and the tests were designed to measure achievement for each grade level. Each test of the SBMCT covered approximately one-third of the material contained in each grade level text and measured aural perception of rhythm, melody, form, timbre, texture, and dynamics.

Test content reflected the material contained in each of the series books; consequently, each test content was varied. Subtests in each test varied in number and the length of each subtest was from one to ten items. The SBMCT was recorded on vinyl long-playing records, and each test had a four-page answer sheet. Symbolic representation of music with icons, traditional notation, and verbal descriptions of music were used on the answer sheets. Students were presented a choice of three alternatives per item and filled in the appropriate circle under the selected answer. Some tests used the question mark for in doubt responses to reduce guessing. Reliability coefficients were established via test-retest procedure and ranged from .60 to .94. Colwell established content validity by basing the test items on the material found in the Silver Burdett music

textbooks for grades one through six. The tests were designed so that seventy to eighty percent of the students would be successful with eighty percent of the questions. The SBMCT provided norms in the form of standard scores and percentile rankings; it was designed to be administered three times during the school year in schools which used the Silver Burdett music textbook series. Colwell stated that using the test without the use of the companion series was inappropriate. Additionally, the SBMCT test, which is no longer in print, was designed to measure achievement three times during the year, and was not appropriate for measuring yearly or end-of-grade achievement.

Two standardized tests currently in print were designed for use in grades one through three—*Primary Measures of Music Audition* (PMMA, Gordon, 1979) and *Simon's Measurement of Music Listening Skills* (SMMLS, Simons, 1976). Gordon designed the PMMA for children in kindergarten through grade three to test a child's reaction to auditory stimuli in accordance with his or her innate ability and early informal experiences with music. Gordon selected the term audiation rather than aptitude or achievement because the test was created to measure aural perception and response (Gordon, 1979). Gordon designed the test with simple directions and simple answer sheets to reflect a young child's comprehension, eliminating many problems of group testing in giving instructions or explaining methods of marking responses.

There were two PMMA subtests; each contained forty items. Gordon suggested that the Tonal portion be administered first. The musical items were

tape recorded using a Moog Synthesizer. The tones of the Tonal subtest were presented with equal duration; the rhythmic patterns of the Rhythm subtest were monotonic. For each item, students heard two patterns and indicated same or different by circling two smiling faces for same, or a smiling face and a frowning face for different. Each item was identified by a symbol from ordinary experience, such as an apple or a car, on the response sheet and on the tape. The ordinary symbols eliminated the need for a child to be able to read words or numbers. Innovations in PMMA design provided solutions to some problems that occur in testing primary age students. Gordon measured the reliability of PMMA by using both split-halves and test-retest methods. Reliability estimates were reported using the split-halves method ranging from .72 to .90; test-retest reliability estimates ranged from .60 to .76. Gordon provided norms and percentile ranks, item difficulty and discrimination indices, and estimates of concurrent validity.

Simon's Measurement of Music Listening Skills, referred to as a criterion-referenced test by the author, consisted of nine subtests that relate to various music listening skills. The skills identified were perception of melodic direction, melodic movement, harmony, beat, meter, the perception of changes in dynamics and tempo, tonal memory, and rhythmic memory. These skills were identified from the curriculum of the Georgia Department of Public Instruction, and the test was designed to create an instrument which provided objective measurement of the achievement of groups of young children for nine separate music listening

skills. Reliability and validity data were not provided in the test manual. Information about item analysis and test analysis data was not provided.

The subtests were short, ranging from five to seven and one-half minutes each. As with Gordon's PMMA, students were not required to read or write; items were identified by pictures of common objects rather than numbers. Item answers were marked by drawing a circle around pictures that were understandable to students in the early grades. Directions were clear and vignettes were furnished for the teacher or test administrator to demonstrate how to answer a sample question. Response choices included arrow indicators, pictures of children in different activities, and pictures of pets. These response pictures eliminated the need to read in order to respond. All items were tape recorded using musical instruments which were familiar to young children—violin, drum, piano, and resonator bells. The differences presented in examples for selecting same or different were clear.

In addition to the three tests previously discussed for use with grades one and two, there are three tests in print that were designed for use with students in third grade or above, the *Measures of Musical Abilities* (MMA, Bentley, 1966), the *Knuth Achievement Test in Music* (KATM, Knuth, 1936), and the *Wing Standardized Tests of Musical Intelligence* (Wing, 1939/1960). Bentley developed the MMA to test young children, ages seven through twelve. The four subtests measured pitch discrimination, tonal memory, rhythmic memory, and chord analysis. Audio-tape recordings were made by using a sine wave oscillator and

pipe organ to produce the sound stimuli. Examples were given in each of the four subtests for practice. The manual which accompanied the test and the text *Musical Ability in Children* (Bentley, 1966) did not provide adequate data on standardization methods or sampling techniques. Item analysis data were provided about item difficulty but not about item discrimination. A forty-minute period was required to administer the test which had clear and concise instructions. The time interval for presenting instructions, test items, and response averaged forty seconds per item. Recommended uses of the test included choosing students for special music activities and evaluating readiness for musical skill development that required an identified level of maturity for success.

The MMA pitch discrimination test had two sounds per item, produced by an oscillator. Variance in pitch across the twenty items ranged from three cents per second to twenty-six cents per second. The tonal memory test included two five-note tunes per item. Each tune was played on a pipe organ with all pitches of equal duration presented at a tempo of 120 beats per minute. Subjects were asked to state if the second playing of each pair was the same as the first. If they were not the same, subjects indicated position of the altered pitch. The rhythmic subtest was ten items of paired comparisons of a four beat rhythmic pattern presented via pipe organ. Subjects were asked to identify same/different. If the rhythmic patterns were different, subjects identified the beat on which the change was made. In the chords analysis test, students were required to identify the

number of concurrent sounds in each chord. The battery required half an hour to administer; each subtest required fifteen minutes administration time.

The *Knuth Achievement Tests in Music* (KATM, Knuth, 1936) measured achievement in recognizing and comprehending music from standard music notation. The test had three levels—grades 3-4; 5-6; and 7-12. Each subtest had forty items. A chord from the piano, played by the test administrator, gave the signal for each item. A musical phrase of four measures was played for each item; the student booklet had the first two measures visually presented via musical notation. The student selected the last two measures of the aurally presented phrase from alternatives of musical notation. Test administration required the test administrator to play the examples on the piano at an exact metronomic tempo without error, a weakness in the design of the test. Content validity was established by a textbook analysis of nine music series textbooks. The test manual provided reliability estimates which ranged from .87 to .93 in test-retest analysis. Additionally, information about test administration, procedure, and percentile norms was provided, and complete musical scores were included in the manual.

The *Wing Standardized Tests of Musical Intelligence* had seven subtests, three of which could be used with students younger than ten years old. Wing found that students younger than ten did not perform effectively on tests four through seven because of the difficulty of the content. The first three subtests included chord analysis, pitch discrimination, and tonal memory. In the first three

subtests, students indicated the number of pitches heard and if the changes in pitch were up, down, or if the pitch did not change. Students were instructed to guess. Norms were available for tests one through three. Wing (1968) discussed problems of giving instructions to young students and reported that the instructions had to be modified so that eight year-old students could read and understand them easily.

Tests designed for use with grades four and five include the SBMCT, the KATM, and the *Kwalwasser-Ruch Test of Musical Accomplishment: Grades 4-12* (K-RTMA, Kwalwasser and Ruch, 1924-27). The K-RTMA was divided into ten parts: (1) knowledge of musical symbols and signs, (2) recognition of syllable names, (3) detection of pitch errors in a familiar melody, (4) detection of time errors in a familiar melody, (5) recognition of pitch names, (6) knowledge of time signatures, (7) knowledge of key signatures, (8) knowledge of note values, (9) knowledge of rest values, and (10) recognition of familiar melodies from notation. Each part had a time limit which ranged from three to eight minutes. The complete test took 40 minutes. The test manual gave norms in deciles for each grade level as well as norms for grades nine through twelve. Reliability was .97 and the validity was confirmed from the specifications adopted by the Music Supervisors' National Conference in 1921. The test was designed to measure learning in the objectives identified by the Music Supervisor's National Conference.

The *Watkins-Farnum Performance Scale* (Watkins and Farnum, 1954) was a standardized achievement test for sight reading by students who played musical instruments commonly used in band and orchestras. Short musically notated phrases were presented for sight reading and a judge marked the errors in each measure. Errors were judged in pitch, tempo, duration, expression, articulation, rests, pauses, and repeats. The student was stopped when errors caused a failure to score in two consecutive phrases. The test was designed to be administered individually and took thirty minutes for each student evaluated. Reliability estimates ranged from .87 to .94. Criterion-related validity, based on correlation with teacher ratings, ranged from .68 to .87.

The *Iowa Tests of Music Literacy* (ITML, Gordon, 1970) were designed to measure students' characteristics of tonal and rhythmic aural perception and to measure the ability to conceptualize and use music notation. The test battery was designed for students in grades four through twelve. The test battery included six levels of two major sections—tonal concepts and rhythmic concepts. Three subtests in each section included aural perception, reading recognition, and notational understanding. The aural perception subtest required the students to listen to melodies and classify them as major or minor in levels three and four. The unusual melodies included modal or atonal melodies. Level five included two part melodies to be classified as usual or unusual. Level six presented melodies with chordal accompaniments to be classified as usual or unusual. Bass clef was added to the treble clef in levels four and five, and level six called for

chord symbols instead of notes in the notation. In the notational understanding of the tonal concepts subtest, students completed printed notation. Four notes of a nine-note pattern were printed; students selected one of two alternatives for the remaining five notes. The rhythmic concepts subtest required the students to classify patterns as usual (duple or triple) or unusual (mixed) meters. Reading recognition required the students to detect aural-visual discrepancies. The entire ITML had an "in-doubt" response to discourage guessing.

Music examples were produced using an electronic synthesizer. The test manual contained a comprehensive description of the battery and enough information to enable the user to interpret the test results. A complete set of percentiles was furnished for each level for grades 4-6 and 10-12. Means, standard deviations, and standard errors of measurement were presented in the test manual. Intercorrelations among the subtests were also included. Reliability estimates for the subtests were reported as ranging from .70 to .79; whereas, estimates by levels for each tonal or rhythmic test were reported as ranging from .80 to .94. Criterion-related validity coefficients, established by correlating teacher ratings and ITML composite scores, ranged from .61 to .71.

A Test of Musical Concepts (1985) was developed by the Atlanta Public School System for use in grades one through seven. The purpose of these measures of achievement was to help develop specific instructional objectives and to contribute to planning realistic music program goals and objectives. The test, designed for use with a group of students in one session, was limited to two or

three items for melody, harmony, rhythm, tone color, dynamics, and tempo for grades one through seven. This test battery was an outgrowth of concern for achievement in competency-based education and was designed to be used system-wide.

Test Development

Development of a valid, reliable, and useable achievement test for students in grades one through five requires the designer to establish the criteria of test content as related to the material taught, to identify concept categories in which the material was presented, and to establish from the literature suggestions from research that facilitate test administration. Ultimately, the test designer must decide what to include in an achievement test and provide a test in which students may satisfactorily demonstrate the knowledge gained through experience and study through the material included in the test.

Colwell (1991) discussed in detail the lack of interest in music education measurement. In his survey of over 3,000 dissertations completed since 1960, he reported that only 40 studies were devoted to developing a test to measure either ability or achievement. Colwell suggested that music teachers lack interest in measurement or in formulating objectives, goals, and procedures for establishing standards. Colwell concluded that if music is considered basic, as it is stated to be in the *North Carolina Standard Course of Study*, the mandate for testing in music should apply exactly as it does for math, reading, and science. In *Basic*

Concepts in Music Education, II, Colwell maintained that "no state assessment instrument presently available would be a valid measure of student achievement in music" (Colwell, 1991, p. 267).

A competency-based curriculum, such as the one adopted by the North Carolina General Assembly in June of 1985, provides recommended goals and objectives for each basic subject area. Music is included in that curriculum. Measurement strategies for music achievement are necessary to substantiate the cultivation of musical intelligence as well as to determine if the goals and objectives of a curriculum are being met and to what extent. The development of a test requires the test developer to examine those areas that contribute to the creation of a high quality test, including test validity and reliability.

Validity

According to Radocy and Boyle (1979) content validity is based on how well a designated body of material is represented and is appropriate for an achievement test. Content validity requires a complete specification of the material to be included. Colwell (1970) discussed the problem of constructing music achievement tests and concluded that low reliability was not as problematic as low validity. Additionally, Colwell suggested that concurrent and predictive validity were not as important as content validity because of the lack of achievement tests with which to compare data and because of the unreliability of teacher ratings. In developing the *Music Achievement Tests* (1967-1970) Colwell

based the content of the tests on existing objectives and justified that decision with three reasons: (a) the goal of the tests should not be to change an existing curriculum, (b) any method of creating new objectives bordered on dictating content to teachers, and (c) test items that reflect anything other than what is actually being taught make a test impractical. In the development of the *Silver Burdett Music Competency Tests* (1979) Colwell explained that construct validity is not an appropriate reference. Colwell further noted that criterion-related validity is difficult to establish because of the lack of comparative materials. He concluded that content validity, the comparison of items with program content, must be established in any test of achievement. The decision to make the *North Carolina Elementary Measures of Music Achievement* valid in content by analyzing and representing the content of the state-adopted textbooks and the NCSCOS was based on the advice of experts in the field of test development.

Reliability

Colwell (1970) identified a problem for the constructors of music achievement tests. According to Colwell, reliability estimates are reduced by the clustering of scores (usually at the low end). Colwell suggested that low reliability estimates should not necessarily indicate discarding questions or sections. Boyle and Radocy (1987) suggested that test reliability can be enhanced by simple and clear directions, potential for a wide range of scores, a comfortable test environment, distortion free music examples played at a comfortable loudness

level, test items in which answers are not revealed in the item, and a test length that is suitable for use during regularly scheduled classes.

Content Analysis of Textbooks

Clementz (1990) presented a content analysis of three elementary music series textbooks—Silver Burdett and Ginn *World of Music* (1988); Holt, Rinehart and Winston *Music* (1988); and MacMillan *Music and You* (1988). Material presented in the study by Clementz included a composite of music goals as defined by the Music Educators National Conference publication *The School Music Program: Description and Standards* (George, Hoffer, Lehman, and Taylor, 1986) and the *Illinois State Fine Arts Goals* (1986). Clementz cited a problem associated with content analysis validity. He indicated that textbook examples presented elements of music inconsistently defined by concept categories. Clementz solved the problem by combining some concept categories and cited related research that supported combining concept categories by analyzing not only what was stated in the textbooks but also how the information was stated. Clementz established a consensus of music elements as presented in three elementary music series textbooks. Those elements, determined by Clementz to be eight in number, were derived from definitions of concept categories in all three textbooks. Clementz cited ten concept categories in *Music*, six categories in *World of Music*, and eight categories in *Music and You*. The music elements consensus by Clementz included (a) rhythm/duration, (b) melody/pitch, (c)

harmony, (d) form, (e) tempo, (f) dynamics, (g) tone color/timbre/ texture, and (h) dynamics.

In creating the frequency of presentation information, Clementz considered all lesson objectives, both primary and subsidiary, to quantify content.

Clementz ranked the presentation in *Music*, from most frequent to least frequent as: (a) melody/pitch, (b) rhythm/duration/articulation, (c) tempo, (d) form, (e) style, (f) tone color/timbre/texture, (g) harmony, and (h) dynamics. Clementz reported the following rankings in *World of Music*, from most to least frequent: (a) tempo, (b) rhythm, (c) style/time and place, (d) melody/pitch, (e) form, (f) tone color/timbre/texture, (g) harmony, and (h) dynamics. Ranking of presentation in *Music and You* was: (a) tempo, (b) melody/pitch, (c) rhythm/duration/articulation, (d) form, (e) style/time and place, (f) tone color/timbre/texture (g) harmony, and (h) dynamics.

In 1988 the North Carolina State Textbook Commission adopted two basal textbook music series: Holt, Rinehart, and Winston *Music* (1988) and Silver Burdett and Ginn *World of Music* (WOM, 1988). This researcher, therefore, analyzed the two series to determine: (a) the music concepts in each series, (b) the instructional strategies and lesson plans in both series, and (c) the frequency of concept presentation. Following the analysis of lesson presentations by concept category for both the total and the core (minimum) curricula, a comparison of the core curriculum with the total curriculum of the textbooks was made by concept category. The percentage of lesson presentations by concept category from the

core curricula of both series was determined as was the percentage of lesson presentations by concept category from the total curricula of both series.

Content percentages were averaged for each concept category across both textbook series. Results of the analysis of content by concept category are summarized in Appendix A.

This researcher compared the content of the two state-adopted music textbooks with the competency goals stated in the *North Carolina Standard Course of Study* (Warren, 1990). The findings were: (a) the concepts presented in the NCSCOS were emphasized in the music textbook series, and (b) the skills in music, as defined by the NCSCOS, were reflected in the textbooks. The content analysis completed by this researcher included only the primary lesson objective for ranking frequency of presentation. The rankings of concept categories in *Music* from most to least frequent were: (a) expressive qualities (tempo, dynamics, articulation, style), (b) rhythm, (c) melody, (d) form, (e) harmony, (f) timbre, and (g) texture. The rankings from most to least frequent in WOM were: (a) rhythm, (b) melody, (c) harmony, (d) form, (e) expressive qualities, (f) timbre, (g) texture, and (h) tempo. This researcher concluded that a comparison of the content analysis by Clementz which identified eight concept categories and the content analysis by this researcher which identified six concept categories was not possible. Additionally, each researcher used different approaches to analyze the content of lessons. Clementz included primary and

subsidiary lesson objectives in eight categories; this researcher included only primary lesson objectives in six categories.

Content Validity and Measuring Elementary Music Achievement

The manner in which psychologists and teachers viewed the teaching/learning process changed during the 1960's. The writings of Bruner (1965, 1968) influenced curriculum development, the nature of instruction, and textbook content. Bruner's theory of instruction embraced the conceptual approach and emphasized the structure of knowledge. Music educators developed new ideas about music teaching which resulted in new textbooks and materials which included conceptual statements. According to Gary (1967) a conceptual statement includes not only the qualities or structure of a process but also what must be demonstrated by the teacher so that the learner can perceive the process or structure. The importance of providing developmentally appropriate experiences also was addressed by Bruner. One definition of concept (Aurand, 1971) was the formation of a meaningful idea in the mind of a person as a result of perceptual experiences. Additionally, Aurand stated that the word concept implied a particular element of music as a result of perceptual experiences.

Results of a study conducted by this researcher showed that the ideas of Bruner were implicit in both basal music textbooks (Warren, 1990). The experiences presented throughout the textbooks were designed to focus on a particular music element or concept in each lesson. Concept categories presented

in the analyzed textbooks were not identical. *Music* presented ten categories in the scope and sequence charts in the teacher editions. *World of Music* identified only six categories. The decision to modify categories was based on an examination of the content of lessons across the textbooks of each series. Modification produced consistency across the texts so that the frequency of content presentation could be established. The concept category of melody included pitch (high/low, step/skip, repeated tones and contour). Melodic patterns in *Music* lessons were presented as form, even though the scope and sequence charts classified melodic patterns as a melodic concept. The authors of *World of Music* classified melodic patterns as form, as did the *North Carolina Standard Course of Study*. While experts agree that melody does not exist separate and apart from rhythm, both *Music* and WOM presented lessons about melody separate from lessons about rhythm. Therefore, for purposes of content analysis and content validity for the NCEMMA, the categories were separated. In both textbook series, the concept category of rhythm included meter and duration; however, tempo was presented as an expressive quality. Lessons about tempo in both *Music* and WOM were designed to demonstrate that the underlying beat may get faster or slower. Because tempo was presented in the texts as an interpretive element (i.e., *rallentando*, *accelerando*, *fermata*, *rubato*), this writer classified tempo under expressive qualities, even though a strong argument can be made for classifying tempo in the category of rhythm (Gabrielsson, 1973; Sink, 1983). The elements of dynamics, articulation, texture, and style were grouped

with tempo to fill the conceptual category of expressive qualities. The treatment and presentation of elements associated with timbre and with harmony were similar in both textbook series and, consequently, functioned as separate concept categories with minimal synthesis of definitions and lesson objectives.

In the preface to the Silver Burdett and Ginn series, the authors and editors addressed the problem of inequities in scheduling and funding throughout the United States and designed a core curriculum to be the minimum program. The authors concluded that music of high quality and materials which appeal to diverse backgrounds were appropriate for inclusion in the series. The editors advocated two kinds of interaction with the material—*involvement* and *study*. *Involvement* was defined by the way an individual responded to some aspect of the expressive qualities of music by singing, moving, listening, playing instruments, or creating music. These activities are not measurable in a group setting using pencil and paper tests. Learning included the acts of defining, investigating, discriminating, analyzing, evaluating, organizing, and associating concrete examples of music with the formation of concepts about music. An achievement test designed to measure music learning is needed to evaluate progress in a competency-based curriculum such as the one adopted by the State of North Carolina.

The collection of songs and listening lessons in WOM was divided into four sections which included sequential presentations of materials: (a) to develop music reading and listening skills, (b) to develop knowledge of music styles, (c)

for use in classroom or public performances, and (d) for use during holidays and special occasions. Lesson plans in WOM used procedures which involved students in experiences of singing, moving, listening, playing instruments, and/or creating music. The concept categories in WOM included rhythm, melody, harmony, form, timbre, and expressive qualities which included tempo, style, and dynamics.

Music was based on the educational philosophy that learning is most efficient when there is a need to know and occurs only to the extent that a student willingly makes a commitment to the act of learning which motivates continued development and, ultimately, results in musical independence. The authors of *Music* used a "generative" instructional theory while developing the textbook series which advocated that concepts formed by a learner reflect the way music elements are organized into a musical whole which has form, texture, an expressive nature, and a cultural context.

Each lesson in *Music* provided a music example that demonstrated the concept to be learned, a behavior through which the learner interacted with music, and a conceptual mode through which the learner communicated understanding to the teacher. The lesson plans in *Music* were based on Bruner's research identifying three modes of learning which were enactive, iconic, and symbolic. The enactive mode was defined as students associating physical activities with musical sounds. The iconic mode permitted students to recall sound images using visual representations of musical sounds. Using the symbolic

mode students replaced icons with standard music notations or symbols. The *North Carolina Elementary Measures of Music Achievement* was designed to measure learning which occurred in the iconic and symbolic concept modes. Concept categories in *Music* included rhythm, melody, timbre, dynamics, articulation, harmony, texture, form, expression, and time and place. *Music* contained three types of lessons. Song-based lessons usually were presented with both lyrics and standard notation in the text. Some songs, however, were learned by rote from lyrics only. Listening lessons included recordings of songs which were accompanied by a chart or illustration to guide the lesson toward the objective. Activity lessons included poems, stories, or art works accompanied by creative movements, verbal descriptions, and/or various classroom instruments.

Supplementary materials available with both basal textbook series included separate resources for activity sheets, biographies, evaluations, suggestions for integrating the curriculum with other subjects, Kodaly method, Orff-Schulwerk approach, enrichment, and mainstreaming modifications. Recordings of acceptable quality were fundamental to both series.

The content and design of the *North Carolina Elementary Measures of Music Achievement* were based on synthesized concepts and learning experiences in the lessons across both textbook series. Definitions of concepts across both textbook series were categorized as melody, rhythm, form, timbre, harmony, and expressive qualities (tempo, dynamics, articulation, texture, style). Definitions of these concept categories are stated in Chapter III. The concept category of each

lesson across both series were identified via the focus and primary objective of a lesson.

Music and Child Development Theory

Attention must be given to developmental theory before and during test design. The assessment of achievement, according to Cronbach (1970) should be associated with the nature of learning. Cronbach states that changes occur in a discipline as knowledge and cognitive strategies are acquired from formal instruction and informal experiences. Evaluative tools which accommodate changes that are acquired are appropriate. Achievement measurement in developmental terms identifies areas of progress as well as areas for remediation. A test designer should be aware of the cognitive nature of acquired ability and the processes that develop as students change from beginning to advanced learners.

Early responses to music stimuli have been identified by many researchers in music education. The research suggested that participation in music experiences with adults improves music ability and that certain elements of music are comprehended earlier than others. Comprehension also has been shown in research to be dependent on both the age and experience of the learner. There are many studies which supported the theory that the development of music skills and music intelligence is experience related, learned rather than innate. Other studies indicated that music learning is developmental and that music skills are acquired through interaction with the environment, informal contact with music,

as well as through the acquisition of cognitive abilities. According to many researchers, acquisition of music skills is accomplished in the same way that the acquisition of language skills takes place. When designing a test of music achievement, consideration of research on the musical development of children is necessary and appropriate.

Gordon (1980) suggested that children are inexperienced in basic aural elements which he identified as a sense of tonality and sense of meter. Furthermore, Gordon stated that tonal memory and rhythmic memory are necessary before theoretical understanding can occur and that tonal memory precedes music reading just as language memory precedes reading. Moreover, Gordon described learning by two functions: (a) discrimination based on perception and (b) discrimination based on inference. Gordon (1971) stated that students need a vocabulary of tonal and rhythmic patterns to acquire meaning from music notation.

Colwell (1970) defined easy perceptual and conceptual tasks: (a) recognizing the contour of an interval, (b) identifying instruments, (c) distinguishing differences in duration and loudness, (d) recognizing melodies, (e) counting the number of phrases, (f) knowing if the final cadence sounds finished, and (7) recognizing same/different melodies, chords, rhythms, and texture. He defined difficult tonal and rhythmic tasks as: (a) hearing from major to minor, (b) determining the number of parts, (c) identifying chords, (d) relating rhythm to beat, (e) hearing the type and role of the accompaniment, (f) determining how a

melody moves, (g) recognizing cadences, (h) matching sound with notation, (i) audiating a pitch given "do." This synthesis of information by Colwell should be considered in the development of a music achievement test for elementary aged students.

Serafine (1988) defined two musical cognitive processes which form cohesive perceptual tasks—transformation and abstraction. Transformation is an awareness of similarities in the presence of obvious differences, and abstraction is the consideration of a musical event out of its original context. Serafine concluded that music thought is not only concerned with sound in the physical environment and in the mind's inner ear; it is also temporal and subjective. Serafine insisted that a rapid growth in musical understanding occurs between the ages of eight and ten or eleven years. The design of a test of music achievement should reflect music growth as described by Serafine.

Sloboda (1985) defined two types of learning and development. Encultured learning includes the ability to: (a) distinguish musical from non-musical sound, (b) imitate individually-sung pitches, (c) discriminate short melodic sequences, (d) babble music, (e) glean information about the structure of music, and (f) classify music according to stylistic rules. Training, according to Sloboda, contributes to the knowledge and accomplishment of skills learned through the culture. He defined the goal of training as instruction to enhance encultured knowledge and skills. Sloboda's research provided a guide for this researcher in selecting aural examples which reflect the dominant culture of students.

In a 1982 study, Gardner identified cognitive stages of growth in music. From birth to age one, children sing as well as babble in undulating patterns. From age two to age seven, children move from babble to the acquisition of symbols and creation of spontaneous songs. By the age of three or four, however, melodies of the dominant culture supersede spontaneity. Test design for this study used culturally familiar examples in melodic and rhythmic test items.

Several researchers in music education applied the Piagetian stages of development (Piaget, 1950). Zimmerman (1984) concluded that Piagetian principles of development were relevant for music educators. "A developmental sequence pervades research findings about music concept formation, with concepts developing in the following order: volume (loudness), timbre, tempo, duration, pitch, harmony" (Zimmerman, 1984, p. 72). McDonald and Simons (1989) identified a sequence of learning similar to that explained by Zimmerman. Test development and the analysis of test data should reflect this developmental information. Specifications for test design for each grade level should reflect easy to difficult items.

Grutzmacher (1987) found that tonal pattern training for 48 fifth and sixth-graders improved aural perception and melodic sightreading skills. He emphasized the need to develop aural skills before developing music notation reading skills. Aural presentation of test items with iconic representation of musical notation was supported by Grutzmacher's findings for fifth and sixth-grade students.

Investigation of the stages of music skill development relating to the four main developmental stages described by Piaget (1950) has produced relevant information for test design, especially with elementary school students. In the following discussion, the writer acknowledges that the age ranges for the four stages are arbitrary, and students vary in the age when they reach each developmental stage. Piagetian principles, however, supported using developmentally appropriate materials for instructional presentations and test design.

The sensorimotor stage, approximately birth through age two, has been examined by researchers studying musical behavior. Farnsworth (1969) reported that children responded to sudden loud noises in the womb. Chang and Trehub (1977) found that five-month-old infants were sensitive to musical sounds and that the heart rates of the infants were responsive to those sounds. Moog (1976) studied five hundred children and found that six-month-old infants stopped feeding to look at a sound source, and, additionally, found that a movement response was exhibited by nearly all infants, including swaying or bouncing up and down to the rhythm of the beat. Movements increased in frequency, duration, and intensity between the ages of nine months and one year. Vocalization of song, called song babbling by Moog, occurred by the age of nine months. Babbling varied in pitch but did not have phonemic variety. By the end of the first year, most children in Moog's study made appropriate gestures when hearing action songs that were associated with gestures. Moog found that

melodies were not necessary for recognition of action songs; words, however, were necessary. A number of studies showed that children were able to distinguish musical sounds from noise, imitate sung pitches, and discriminate short melodic sequences by the end of the first year of life.

The preoperational stage, ages two through seven, has been studied by music educators. Dowling (1982) reported that spontaneous singing by children between ages two and three became longer in duration, somewhat aimless in melodic direction, and proceeded with no sense of finishing. The decision to stop spontaneous singing appeared arbitrary. Rainbow and Owen (1979) reported no ability to move synchronously with musical beats although a variety of physical movement was reported. The physical movement associated with music also appeared to be spontaneous. However, Moog (1976), Dowling (1982), Rainbow and Owen (1979), and Gardner (1981) supported developmental theory and enculturation indicating that, by the age of three years, children identified characteristic rhythmic and pitch patterns in songs to which they were culturally conditioned. In most studies, however, identification of songs depended more on melodic contour than on exact pitches. By the age of four, spontaneity in singing decreased dramatically and children improvised new songs by putting together pieces of the songs they already knew, mixing up words, melodies, and rhythmic patterns of familiar songs (Gardner and Wolf, 1983). Additionally, Gardner and Wolf found that movement responses had to be prompted, and clapping in synchrony with beat or with the rhythm of the words indicated a knowledge of

meter and rhythmic patterns, respectively. In a study of five-year-olds, Dowling (1978) reported that recognition of scale shifts and of tonal or atonal melodies was difficult because scales had not been internalized. He reported, however, that eight-year-old children were able to recognize shifts of scales within a melody from one key to another and that they recognized tonal melodies better than atonal ones. Developmental research, therefore, indicated that test items involving melodic discrimination should use tonal melodies rather than atonal melodies.

Ramsey (1983) found that accuracy in rhythm perception increased with age and that three-to-five-year-olds accurately perceived rhythm, melodic contour, and melodic intervals. Additionally, Ramsey found that melodic-rhythmic perception preceded melodic-interval recognition, and concluded that these differences were developmental. The design of an achievement test should provide examples using both melodic-rhythm and melodic-interval recognition in the early grades.

Gardner, Davidson, and McKernon (1981) taught new folk songs to four and five-year-old children. The five-year-olds were able to maintain tonality and to organize music to an underlying beat, but four-year-old children drifted in key and were not able to maintain a steady beat. Moog (1976) reported a gradual increase in tune recognition up to age five and reported that between the ages of three and four the differences in home environment affected musical abilities. Moog reported that students who are taught songs and games by parents, siblings,

or nursery school workers have an advantage over other children. Learning to sing, according to Michel (1973) is an outgrowth of informal instruction and is sequential in its development according to Davidson, McKernon, and Gardner (1981). Stages were classified in half-year increments from vocal play at one year of age to a sense of tonality by age five. According to research on vocal range, the range also progresses from two years of age through five years of age (Williams, 1932; Jersild and Bienstock, 1934). Gordon (1988) suggested that the young child should be encouraged to sing with adults and in response to adults as preparation for learning to sing. The singing range from C₄ to D₅ was identified by Gordon for the average five-year-old. Younger children with vocal ranges from A₃ to A₄ were still in the musical babble stage. Expanding vocal range and the ability to sing "in tune" have been described in the literature as developmental. A test developer should select musical examples for tonal memory that fall in the identified vocal range of students.

Music education research supports that the level of music ability with which a child is born will be influenced by both informal and formal music experiences. Special capacities for musical learning have been identified by other experts (Lundin, 1967; Farnsworth, 1969). The identification of specific skill acquisition, which may be biologically determined, is linked with and supported by cultural influences (Gardner and Wolf, 1983; Shuter-Dyson and Gabriel, 1981; Radocy and Boyle, 1979). Gordon (1988) maintained that music aptitude does not continue to develop after the age of nine, and used the term stabilized

apitude to describe aptitude acquired by age nine; that is, a child's potential to achieve musically has stabilized. If Gordon's theory is correct, the use of achievement tests to evaluate the success of instruction in grades one through three is supported. Additionally, the test developer would expect larger gains in scores between grades one and three than in the upper grades.

Thackray (1972) concluded that abilities to maintain steady beats were developmental. Thackray found that maturation did not affect the ability to maintain a steady beat between the ages of seven and fifteen, but concluded that maturation did affect abilities to maintaining steady beats prior to age seven.

Several research projects support that intelligence influences musical ability. DeYarman (1972) adapted Harrington's (1970) version of the *Musical Aptitude Profile* (Gordon, 1965) to measure music aptitude of kindergarten and first grade students. DeYarman concluded that intelligence and developmental age are crucial components for acquiring musical memory. Moore and Straum (1987) compared auditory short-term memory skills of English and United States children ages five, six, and seven, using an electronic audio-visual game device called SIMON by Milton Bradley. Findings from the study implied that music activities should be matched to students' abilities to remember patterns, i. e., five-year-old children can remember three to four pitches, and seven-year-old children can remember five pitches. One conclusion of the study was that the amount of musical instruction directly influenced music achievements related to pitch memory. Miller (1956) acknowledged a capacity for processing information and

theorized that humans remember more information by "chunks" than by "bits" or, for example, by individual pitches. Miller defined a memorable "chunk" as including four to eight bits of information. Test developers, therefore, are advised by research to use aural examples that can be remembered by young students.

In a study designed to determine the effect of short-term instruction on five-year-old children, Flohr (1981) randomly assigned twenty-nine children to one of three groups. One group was instructed twice, one group was instructed once, and one group was not instructed. Scores on the *Primary Measures of Music Audiation* (Gordon, 1979) were higher for the two groups that received instruction than for the group that was not instructed. Flohr concluded that teachers should expect increases in PMMA scores following music instruction. A test developer should expect an increase in scores for similar questions as a result of maturation, instruction, and cognitive development.

Petzold (1969) concluded from a longitudinal study of three groups of children in grades one, two, and three that age is a significant factor in the development of auditory perception and that it reached a plateau by grade three. According to Petzold, the most significant changes occurred between grades one and two. Petzold also concluded that children responded better to a female voice presenting melodic patterns than they did to a flute or a piano. Green (1990) investigated the effect of adult female, adult male, and child vocal modeling on pitch matching accuracies in 282 subjects from grades one through six. More correct responses were recorded from the female model than from the male

model. Green also reported that maturation was a factor in the accuracy of pitch matching. The test developer should use the female voice in creating an aurally presented test for young children.

Michel (1973) analyzed spontaneous melodies by young children and infants. He found that subjects preferred descending intervals 261 times out of 408. The major second was the most frequently occurring interval, followed by the descending minor third. Michel identified six spontaneous melodic patterns which occurred most frequently in his analyses. (See Figure 1). A test designed to measure young children's music achievements should include melodic patterns containing preferred intervals identified in research.

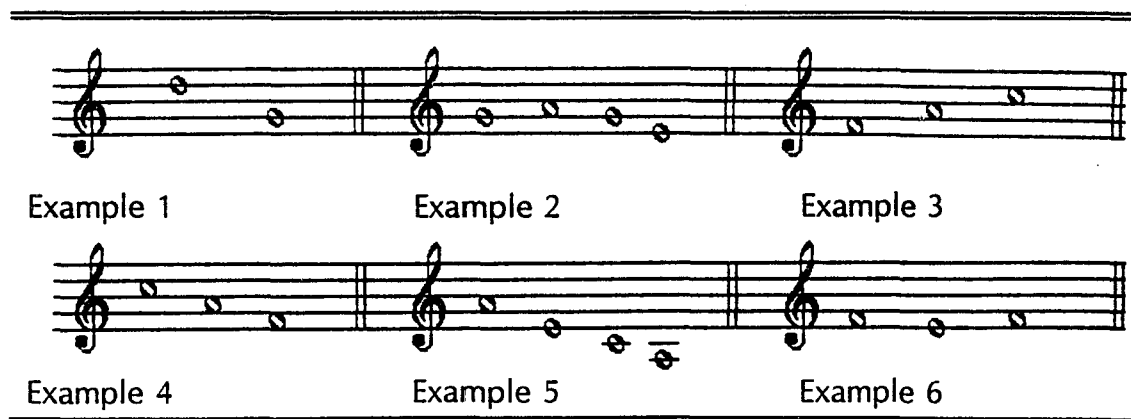


Figure 1. Six melodic patterns preferred by children and infants (Michel, 1973).

Thackray (1972) observed four-year-old children on a weekly basis to identify: (a) their understanding of musical concepts, (b) the methods that help the children acquire the concepts, and (c) their response to different types of presentations. He concluded that children seldom use comparative adjectives in

their speech. In his opinion, a gradual transition approach was clearer than pair comparison, such as better/worse. Thackray suggested that comparative adjectives in the choices of response made more demand on non-musical intelligence than the gradual transition response.

Hudson (1986) identified some problems that are inherent in test designs for young children. One problem that Hudson noted was the tendency of the students to sing along with familiar melodies. She composed original examples for the test of melodic direction/melodic contour to eliminate the problem. Hudson also discussed the difficulty in presenting understandable test instructions to young children; she suggested that examples of test questions for young children be presented on posters rather than in the test booklets to keep the students from marking on the response sheets prematurely. Both Thackray (1972) and Hudson (1986) cautioned test designers to present instructions to primary aged students in terms that they can understand.

Developmental research supports that some skills in music are acquired through daily experience without a conscious attempt by the learner to gain information. According to Gordon (1987), the level of developmental music aptitude becomes stabilized by the age of nine. Gordon stated that a person cannot go beyond that potential to achieve and further emphasized that early formal and informal instruction in music, from birth to age nine, is of greater consequence than after age nine. Music instruction involves a conscious effort by the student to learn and attain a specific set of objectives established by a music

teacher. Assessment procedures are necessary to furnish information to teachers, administrators, and parents, about student achievement in relation not only to other students but also to progress toward specific competencies. The developmental literature establishes the importance of measuring and evaluating music learning occurring in the elementary grades.

Restatement of Purpose

The purpose of this study was to develop a useable, valid and reliable music achievement test which can be used throughout the State of North Carolina for grades one through five to evaluate progress in music learning in the content areas of melody, rhythm, form, timbre, harmony, and expressive qualities (tempo, dynamics, articulation, texture, and style). Ultimately, the value of evaluating progress is in increasing music educators' abilities to identify individual student needs, to improve instructional planning, and to provide objective information to students, parents, and teachers. The research objectives of the development of the *North Carolina Elementary Measures of Music Achievement* were:

1. To develop a useable, valid and reliable music achievement test for use in grades one through five in North Carolina public schools that can be used to determine the extent to which students benefit from instruction;
2. To collect data from test administration, analyze the data, and evaluate students' test performances and the quality of the five test batteries of the *North Carolina Elementary Measures of Music Achievement*;

3. To provide a method of evaluating elementary music programs relative to the objectives of the *North Carolina Standard Course of Study*; and
4. To analyze the five test batteries for possible bias and provide foundational research for standardizing the tests in North Carolina by analyzing effects of grade, age, gender, race, and parents' education, and parents' occupation on elementary music achievement in grades one through five as measured by the *North Carolina Elementary Measures of Music Achievement*.

CHAPTER III

PROCEDURES

The primary purpose of this study was to develop a useable, valid and reliable elementary music achievement test. The *North Carolina Elementary Measures of Music Achievement* (NCEMMA) was designed to measure music achievements of North Carolina students in grades one through five. The content of two state-adopted basal textbook music series (*Music*, Holt, Rinehart, and Winston, 1988; *World of Music*, Silver Burdett and Ginn, 1988) and of the *North Carolina Standard Course of Study* (NCSCOS, 1989) guided the test development. Concepts categories included in the NCEMMA battery of tests and common to the state-adopted textbooks and NCSCOS were rhythm, melody, form, timbre, harmony, and expressive qualities (tempo, dynamics, articulation, texture, and style).

Procedures of the study included establishing test content, establishing a response mode, developing test items, designing answer sheets, creating audio recordings of test items for aural presentation, developing aural-visual test instructional aids, developing instructional and test scripts, administering grade one through grade five NCEMMA tests, analyzing students' test performances, analyzing test qualities, and recommending test revisions. To determine whether the NCEMMA was biased and to provide foundations for standardizing the five

test batteries, effects of grade, age, gender, race, parents' education and parents' occupation also were examined. The current study emphasized test development, yet ultimately, the long-range goal of the research is to revise and standardize the NCEMMA to accommodate end-of-grade testing mandates and accountability demands in North Carolina public schools. Recommending test revisions was accomplished by completing the current study; however, standardization of the NCEMMA was not within the scope of the current study. Upon completion of the study, revising the five test batteries and standardizing the NCEMMA to attain the study's long range goal must be pursued. Completing the procedures of the current student should contribute to the quality of music education in the state and should help to meet educational mandates established by the North Carolina General Assembly (1989).

Sample of Students

The North Carolina Elementary Measures of Music Achievement (NCEMMA) was administered to 117 students. Because the test was administered during the Fall of the 1993-94 academic year and, ultimately, was designed to be an end-of-grade test of music achievement, students in grades two through six were selected to participate in the study. The sample of students was a sample of convenience and was selected from an elementary school and a middle school in the Guilford County Public School System in North Carolina. The focus of the study, however, was on developing and validating the NCEMMA to measure

learning for which the elementary school music program was accountable upon students' completion of grades one through five.

The sample of students for the current study was established by selecting randomly one class from grades two through five of the elementary school music program and from grade six of the middle school music program. Additionally, the sample of students and schools were located in a suburban (rural) area of North Carolina near three major cities in the state, Greensboro, Winston-Salem, and High Point. Throughout the remaining discussion, participating students are grouped by grades one through five although they were in one grade higher than the grade levels of the study. Results of the study should be accepted as tentative relative to the four-month period of development occurring after the end of the preceding academic year, and relative to possible deteriorating effects of time on retention of recently learned music knowledge and skills. The sample selected for the current study also was not representative of the population of North Carolina elementary school students.

Experts in measurement of music behaviors were consulted and supported that NCEMMA development and validation was imperative and of immediate concern for music educators in the state of North Carolina. Initially, the researcher intended to standardize the NCEMMA across the state. To standardize the NCEMMA, however, a sample representative of elementary students in North Carolina's public schools would be necessary. Including representation across the state's geographic regions, including the Mountain, Piedmont and Coastal Plain

Regions, as well as across gender and race, and parents' education and occupations as defined by the North Carolina and United States Census (1990). Consulted experts and the researcher agreed that using a representative sample and standardization of NCEMMA were not in the scope of the current study. The sample, however, provided sufficient information to develop and validate the NCEMMA which was considered essential to future standardization of the five test batteries as end-of-grade music achievement tests throughout North Carolina. Additionally, to ensure development of a valid and reliable NCEMMA, a sample of students participating in a high quality elementary music instructional program accountable for the music learning measured by the NCEMMA was selected.

Because the NCEMMA was designed as five end-of-grade test batteries and was designed to measure elementary music learning, the quality of the music instructional program implemented in the elementary school participating in the study was examined. The elementary school housed a music instructional program with each grade receiving music instruction from a music educator who had taught at the school for five years and had received the 1992-93 Guilford County Public School Outstanding Educator Award. Additionally, the elementary music educator was full time, was responsible only for the participating elementary school's music instructional program, and had a classroom solely used for music instruction. Each music class in grades one through five met once per week. Grades one through three met for 30-minute music classes, and grades four and five met for 45-minute music classes. The researcher concluded that for

developing and validating the NCEMMA, the participating elementary school housed a music program of acceptable quality with a model music educator.

Research Approval and Parental Permission

Approval of using human subjects in research was granted by the University of North Carolina at Greensboro Institutional Review Board (IRB). A copy of the IRB application and a copy of the Board approval form are included in Appendix B. Upon receipt of University IRB approval to conduct the research, the researcher requested permission to conduct the study from the Guilford County Public School System. A panel of researchers, measurement specialists, and administrators from the Accountability and Curriculum Services of Guilford County Public Schools reviewed the research proposal. A copy of the letter from the county school system granting permission to proceed with the research also is included in Appendix B.

Parental permission for students to participate in the study was obtained via a letter in which parents also were asked to furnish information about their education and occupation. The letter requesting parental permission informed parents of the confidentiality of students' test performances and of their rights to withdraw from the study. A copy of the letter of permission and the consent form are included in Appendix C.

Test Development

Establishing Content Validity

A content analysis of Silver Burdett and Ginn (1988) *World of Music* (WOM) and Holt, Rinehart and Winston (1988) *Music* was completed for grades one through five to determine which concepts were in each textbook series by grade level and to determine the number of lessons in which each concept was presented (Warren, 1990). Concept categories, however, were not defined identically in both series. In the current study, concept categories were identified by analyzing and merging the content of each series into generalized definitions of music concepts.

Music identified the focus of each lesson with a broad concept statement about a music element; while WOM focused each lesson with a behavioral objective. For example, one concept statement about melody presented in *Music* was that "a series of pitches may move up or down or remain the same" (Grade One, Teacher Edition, p. xxii). The same concept, presented in WOM as a behavioral objective was that a "learner will discriminate between upward and downward direction and repeated tones while listening, singing, or playing instruments" (Grade One, Teacher Edition, p. xix). The researcher concluded that WOM lesson behavioral objectives were similar to lesson concept statements in *Music* which permitted distribution and combination of concepts into categories across the two textbook series. Differences in teaching strategies existed between both textbook series; however, these differences were not in content.

During content analyses of both textbook series, differences as well as similarities in lesson presentations were considered, and six concept categories were established. Based on comparisons of *Music* concept statements and WOM behavioral objectives, six concept categories were defined operationally and are listed below.

- Melody:** a series of pitches that moves up or down by steps or skips or remains the same and may move in relation to a tonal center.
- Rhythm:** the movement of music in relation to an underlying beat which is organized into regular or irregular groupings by stressing certain beats. Individual sounds and silences may be longer than, shorter than, or equal to the underlying beat and may occur with, after, or before accented beats.
- Form:** a musical whole, which has a beginning, continues, and ends, and is a combination of identifiable music ideas or patterns which may be the same, varied, or different.
- Timbre:** the quality of music which is determined by the material, shape, and size of the sound source and by how the sound is produced.
- Expressive Qualities:** interpretive music qualities including tempo, dynamics, articulation, texture, and style. **Tempo** is the speed of music which is fast, slow, gets faster, and/or gets slower. **Dynamics** are the loudness levels of music, such as loud, soft, gets louder, and/or gets softer. **Articulation** of pitches and durations makes music sound smooth and legato, or detached and staccato. **Texture** is affected by the distance between and/or degree of contrast between simultaneously sounding melodic-rhythmic patterns. **Style** is the way tonal and rhythmic elements are combined into a whole which reflects the music's origin.
- Harmony:** a quality of music which occurs when two or more pitches or melodic-rhythmic patterns, or a melody and chords sound and move simultaneously.

To serve the needs of programs which meet less than three times per week, both state-adopted textbook series presented a core or minimum curriculum for each grade level. Each series also presented a total curriculum to serve programs meeting three times per week. Analyses of the core curriculum of each textbook series was completed for each of the six concept categories, including rhythm, melody, expressive qualities, timbre, form, and harmony. Separate analyses of the total curriculum of each textbook series also was completed.

Across each textbook series by grade level, frequency of concept presentations in the core and total curricula was determined by counting the number of lessons focusing on each concept category and the total number of lessons in the core curriculum and in the total curriculum, thereby, producing content percentages for each concept category by textbook series. For example, in grade one total curriculum, 50.87% of the total number of lessons in WOM presented rhythm as the lesson focus. In the WOM grade one core curriculum, rhythm was presented as the lesson focus in 40.63% of the lessons. Likewise, *Music* presented rhythm as the focus in 31.54% of the total curriculum lessons and in 30.00% of the core curriculum lessons in grade one. Results of the content analyses are presented in Appendix A for each concept category by core and total curricula and by both textbook series. Content percentages were averaged for each concept category across the core and total curricula of each grade level and series. Content percentages for each grade level and used to

establish content validity for the NCEMMA are presented in Table 1 by grade level. Percentages were rounded to the nearest whole numbers.

Table 1¹
Content Percentage Specifications for the
North Carolina Elementary Measures of Music Achievement
Based on the Curricula in Two Elementary Music Textbook Series

Grade Level	Rhythm	Melody	Form	Timbre	Expressive Qualities	Harmony
One	38%	31%	15%	4%	11%	0%
Two	34%	27%	14%	6%	13%	7%
Three	31%	23%	17%	4%	13%	12%
Four	24%	19%	17%	11%	14%	15%
Five	27%	18%	18%	5%	13%	19%

The number of items included in the six concept categories of each grade level test battery was determined by using the content percentages from Table 1. Acceptable content validity was established for the *North Carolina Elementary Measures of Music Achievement* by using results of the textbook series content analyses and by using the *North Carolina Standard Course of Study* (NCSCOS) as a guide and supportive documentation. Because the NCSCOS is a formal curriculum and does not include music lessons, content percentages were not attained for the NCSCOS. The goals and objectives of the curriculum, however, paralleled the content and concept categories of both state-adopted textbook

¹Because of rounding percentages across the total and core music curricula of both textbook series, averaged content percentages for grades one and two totaled 99% and 101%, respectively.

series. Furthermore, *Music* and *WOM* were adopted by the state; and thereby, provided means to achieve the mandated competency goals and objectives in the NCSCOS.

Developing Test Items for Grades One through Five

Two-hundred and fifty items were written and distributed across five test batteries, one for each grade. Each grade-level test consisted of 50 items. Test items by grade level were submitted to seven elementary music educators who evaluated the tests for appropriateness of music materials, and clarity of test instructions and test items. The consulted music educators accepted the test contents as appropriate and affirmed the clarity of test administration instructions.

To develop test items for each grade level, tasks were associated with each concept category based upon tasks or skills experienced and practiced in the music lessons of state-adopted textbooks. For example, a task associated with the melody category was students indicating whether a five-note pattern moved up, down or stayed the same. Table 2 presents the concept categories, tasks and number of items which were included in each grade level test. Tasks that students completed on the NCEMMA were either aural discrimination, aural-visual discrimination or visual identification tasks. In Table 2 unless indicated, all tasks were aural discrimination tasks. Each item in the tests requested a multiple-choice response and reflected the content presented in both state-adopted textbook series. Students in grades one and two used an eight-page booklet to complete

Table 2

Concept Categories and Tasks by Grade Level and Number of Items per Task

Concept Category and Task ²	Grade Level and Number of Items per Task				
	One	Two	Three	Four	Five
Rhythm:					
Music excerpt; beat or no beat.	4	4	3		
Music excerpt; steady beat, changing beat, or no beat.			3	2	
Second duration of two; long or short.	4				
Music excerpt; duple or triple meter.	4				
Music excerpt; duple, triple or mixed meter.		4	3	3	4
Two Four-beat patterns; same or different.	4	4	3	2	
Four-beat pattern; aural-visual discrimination , associate with rhythmic icon (two choices).		5	2		
Four-beat pattern; aural-visual discrimination , associate with music notation (four choices).			2	4	
Eight-beat pattern; aural-visual discrimination , associate with music notation (four choices).					5
Duration; visual identification , associate note name and duration notation.					4
Melody:					
Five-note pattern; moves up or down.	2				
Five-note pattern; moves up or stays same.	2				
Five-note pattern; moves down or stays same.	2				
Five-note pattern; moves up, down or stays same.	2		4		
Second pitch of two; high or low.	6	3			
Aural-visual discrimination , five-note pattern skips or steps, up or down; associate with melodic icon (four choices).		3	6	2	
Two pitches; half or whole step, up or down.					3
Two five-note patterns; same or different.		7	4		
Two seven-note patterns; same, different, or almost same.				3	
Two seven-note patterns; one high and one low, same, different or almost same.				1	
Melodic pattern; aural visual discrimination , associate with music notation (four choices).				4	3
Melodic pattern; tonal center or no tonal center.					3
Arpeggiated and harmonic triads; major or minor.					4

(continued)

²Tasks involved aural discrimination responses unless indicated in **bold** print.

Table 2 (continued)

Concept Category and Task	Grade Level and Number of Items per Task				
	One	Two	Three	Four	Five
Expressive Qualities:					
Music excerpt; mood - restful or energetic.	2				
Music excerpt; tempo - fast or slow.	2	2			
Music excerpt; tempo - gets faster or slower.		3	3		
Music excerpt; tempo - fast, slow, gets faster or slower.				3	2
Music excerpt; articulation - smooth or detached.	2				
Music excerpt; dynamics - loud or soft.	3	3			
Music excerpt; dynamics - gets louder or softer.			3		
Music excerpt; dynamics - loud, soft, gets louder or softer.				3	2
Music excerpt; style label (4 choices).			4		
Music excerpt; style label (4 choices/item).				3	5
Timbre:					
Music excerpt; solo instrument timbre (4 choices).	3	4	3		
Music excerpt; solo instrument timbre (4 choices/item).				5	3
Melodic pattern; high or low register.	2		1		
Form:					
Melodic patterns; same or different (form icons).	6				
Melodic patterns; AA or ABA (form icons).		5			
Melodic patterns; AAA, ABA, ABB, or AAB (form icons).			3		
Melodic patterns; ABA, AABA, AABB, or ABACA (form icons).				8	
Melodic patterns; ABA, AAB, AABA, or Theme & Variation (form icons).					9
Harmony:					
Music excerpt; one melody or two melodies.		3			
Music excerpt; one melody, melody & countermelody, or melody & harmony.			3		
Music excerpt; one melody, melody & countermelody, melody & harmony, or round.				7	3

the test which did not require reading words nor numbers (see Appendices D and E). Although the majority of test items written for grades one and two requested aural discrimination responses, icons were used throughout the tests as answer choices to eliminate reading and number skills as test variables.

Test Administration and Testing Conditions

Testing Environment

The NCEMMA was administered by the researcher during regularly scheduled music classes. To ensure individual work and high on-task behavior, test and behavior monitoring were conscientious throughout testing. Because the total test required one hour to administer and because music classes met for only 30 to 45 minutes per class meeting, NCEMMA items were divided into two subtests and administered during a two-week period. Subtest One was administered during the first week of testing, and Subtest Two was administered during the second week of testing. Each subtest included twenty-five items.

The testing environments in both the elementary and middle school classrooms were considered acceptable; both had adequate lighting and were comfortably heated and physically isolated from outside noises. To discourage any interruptions, advisory signs were posted in hallways and on classroom doors indicating that testing was in progress. Each student could see the visual aids and hear the recordings easily. During testing, extraneous noises, such as hall noises

and outside traffic, were minimal; interruptions from the classroom intercom did not occur.

Audio and Visual Characteristics of Tests

Tests were presented aurally by audio cassette tape recordings using a Sharp portable cassette player (Model Number QTCD64) with two speakers which were located in the front of each classroom. Playback quality was considered acceptable. Visual aids were used to help students understand test instructions associated with test booklets, answer sheets, and aurally presented test tasks.

The audio tape recordings included all test instructions, announcements of test items, and audio test materials (music patterns and excerpts). Tape recordings were not stopped during test administration. Pencils, test booklets, and answer sheets for all grades were distributed before testing began. For each grade level, visual test instructional aids were 2' x 3' posters which duplicated the information that was printed on test booklets or answer sheets. The administrator pointed to information prompted on tape-recorded test instructions. First and second grade visual test instructional aids duplicated students' eight-page test booklets; during test instructions, item pictures and icons were pointed to by the test administrator (researcher) at a "like this" prompt. Visual test instruction aids used for third, fourth, and fifth grades duplicated the Scantron answer sheet students used during testing. Test transcripts, booklets, and answer sheets are included in Appendices D through H.

Audio tape recordings for the test were created by the researcher and a sound engineer at Beechwood Studios in Weaverville, North Carolina, using a Tascam MSR16 16 track ½ inch open-reel tape recorder and a Tascam M-2524 24 Channel mixer. Test instructions and music excerpts were transmitted to the Tascam recorder and mixer using a Gatex GATF2S preamplifier on the spoken sections and a URIE Compressor on music excerpts which were performed on a Ludwig snaredrum and a Casio (Model 300) electronic keyboard. An RE-20 EV Microphone was used for spoken sections and sections played on the snaredrum. Music excerpts taken from vinyl recordings were played on a Technique SLQD33K turntable. Master tape recordings were transferred to Maxell ferric oxide audio tapes using a JVC-TDV711 two-track cassette tape recorder. Response time for each item was five seconds, and the music pattern or excerpt in each item ranged from five to forty seconds depending upon the item task and materials.

Test Answer Sheets

Students in grades one and two indicated item answers by drawing circles around answer choices in test booklets. Grades three through five indicated item answers on Scantron (Form 882) answer sheets. The Scantron form was selected because it is used in North Carolina schools and is familiar to many elementary students with the exception of students in grades one and two. Practice questions were included for all grades at the beginning of each test. Additionally, each

concept category and task section were introduced to students with a teaching statement and music excerpt or pattern to demonstrate the concept category and task of each section. The number of items included in task sections ranged from one to nine items (see Table 2).

Data Analysis

To analyze data, all grade-level item answers were transferred by hand to National Computer System (NCS) General Purpose Answer Sheets (Form 4521) for scanning on the NCS Sentry 3000 Scanner. The scanner was controlled by an IBM-compatible personal computer and NCS Scantools software. Following data transfer, the NCS answer sheets were proofread twice. First, NCS answer sheets were proofread by the researcher reading transferred answers aloud while an assistant checked students' original answers; and second, by the assistant reading transferred answers aloud while the researcher checked answers in test booklets (grades one and two) and Scantron answer sheets (grades three through five).

Data were analyzed using the *Statistical Package for the Social Sciences* (Norusis, 1988) and the *ITEMA: Test Scoring and Analysis Program* (Martin, 1991) on the University of North Carolina at Greensboro Digital Electronic Computer. The SPSS programs were used to produce cross tabulations by grade, gender, race, parents' education, and parents' occupation; one-way analyses of variance for test performances across the aforementioned student characteristics; two-tailed t-tests for dependent Subtest One and Subtest Two performances means

for the total sample and by grade level. Following analyses of variance data treatment, Scheffé (1959) *post hoc* mean comparisons were used to determine differences between mean test performances grouped by statistically significant variables ($p \leq .05$), such as grade level.

The ITEMA program produced a set of descriptive statistics and measures of test qualities for the Total Test, Subtest One and Subtest Two, and for each concept category across each grade level. Reliability was estimated using *Kuder-Richardson, Formula 20* (Kuder and Richardson, 1937). Item discrimination was determined by using the point-biserial correlation technique recommended by Boyle and Radocy (1988). Item difficulty was determined by calculating the proportion of students answering an item correctly to the total number of students completing a test battery. To confirm the content validity of the NCEMMA, the researcher further pursued the validity of each item relative to task difficulty and state-adopted textbook concept categories and tasks.

CHAPTER IV

RESULTS

Developing elementary music achievement tests for statewide application demanded attention to details of test administration, test performance, and test qualities. Data were analyzed to assess objectively the useability, validity, and reliability of the *North Carolina Elementary Measures of Music Achievement* (NCEMMA) by grade level. Measures of central tendency and variability were examined for the total sample and by grade level. One-way analyses of variance were used to analyze possible differences between mean performances across grade levels for the Total Test and for Subtests One and Two. Within each grade level, a two-tailed *t*-test for dependent means also was used to determine the difference, if any, between mean performances on Subtest One and Subtest Two of the NCEMMA. To assess test biases, if any, one-way analyses of variance by gender and race, and parents' education and occupation also were examined. Results of the analyses of test performances and test qualities are discussed for the total sample and for each grade level.

The *North Carolina Elementary Measures of Music Achievement* (NCEMMA) was administered during the first semester of the 1993-94 academic year to five intact classes of students in the second, third, fourth, fifth, and sixth grades at one elementary school and one middle school in the Piedmont region of

North Carolina. Results of the test are reported in the following discussion as grade one, grade two, grade three, grade four, and grade five. All students who completed the test were taught by the same music specialist during their elementary school years. Elementary music classes participating in the current study met for only 30-45 minutes per class meeting; therefore, the NCEMMA was administered during a two-week period as Subtests One and Two. Table 3 groups the content of Subtests One and Two of the Total Test by concept category and grade level.

Table 3
Content of Subtests One and Two by Grade Level

Grade	Subtest One (Items 1-25)	Subtest Two (Items 26-50)
One	Melody, Timbre, Form	Rhythm and Expressive Qualities
Two	Melody, Timbre, Form, Harmony	Rhythm and Expressive Qualities
Three	Melody, Form, Expressive Qualities, Harmony	Rhythm, Timbre, Expressive Qualities
Four	Melody, Form, Harmony	Rhythm, Timbre, Expressive Qualities
Five	Melody, Form, Harmony	Rhythm, Timbre, Expressive Qualities

Data collected for the current study were analyzed using the *Statistical Package for the Social Sciences* (Norusis, 1986) and the *ITEMA: Test Scoring and Analysis* program on the University of North Carolina at Greensboro Digital Electronic Computer. The SPSS programs were used to describe the sample of students and to analyze test performances. The item analysis program produced a set of descriptive statistics and measures of test qualities for the Total Test, for Subtests One and Two, and for concept categories for each grade level.

Student Characteristics

The sample of students selected for developing the NCEMMA was not representative of the population of North Carolina (*United States Census of Population and Housing, 1990*). To provide a foundation for standardizing NCEMMA and to analyze the test for bias, however, data were collected across student characteristics from parents. Parental permission forms requested information concerning parents' education and occupations (see Appendix C). Even though all consent forms were obtained, seventeen to eighteen returned forms did not supply the information requested. Gender and race data were obtained from class rosters and were complete for all students. The total sample consisted of 117 students described by gender, race, and grade level in Table 4.

Table 4
Gender and Race by Grade Level

Student Characteristics	Grade Level									
	One		Two		Three		Four		Five	
	(n = 22)		(n = 25)		(n = 24)		(n = 25)		(n = 21)	
	n	%	n	%	n	%	n	%	n	%
<u>Gender:</u>										
Female	10	45.5	11	44.0	13	54.2	11	44.0	11	52.3
Male	12	54.5	14	56.0	11	45.8	14	56.0	10	47.6
<u>Race:</u>										
African American	—	—	1	4.0	1	4.2	2	8.0	1	4.8
Hispanic	1	4.5	1	4.0	—	—	—	—	1	4.8
Native American	—	—	—	—	—	—	2	8.0	—	—
White	21	95.5	23	92.0	23	95.8	21	84.0	19	90.4

n = 117

Data describing parents' education were obtained for each student's mother and father, and were divided into three categories. The categories were: college education, four years of high school, and less than four years of high school. Seventeen consent forms did not provide data for the mother's education; and eighteen did not, for the father's education (see Table 5). Table 6 summarizes the occupation of 100 students' parents; seventeen students' parents did not provide occupation data. Occupation classifications based on the 1990 United States Census were: (a) managerial/professional, (b) sales/technical, (c) service, (d) farming/forestry, (e) operator/fabricator, and (f) other (*United States Census of Population and Housing, 1990*). When both parents worked, occupation was classified as "both." No parents indicated a farming/forestry occupation.

Table 5
Parent's Education by Grade Level

Parent's Education	Grade Level									
	One (n = 22)		Two (n = 25)		Three (n = 24)		Four (n = 25)		Five (n = 21)	
	n	%	n	%	n	%	n	%	n	%
*Mother's Education:										
College Education	14	63.6	10	40.0	13	54.2	11	44.0	9	42.8
4 Yrs High School	6	27.3	8	32.0	7	29.1	9	36.0	10	47.6
Less than 4 Yrs HS	1	4.5	1	4.0	-	-	-	-	1	4.8
Missing Value	1	4.5	6	24.0	4	16.7	5	20.0	1	4.8
**Father's Education:										
College Education	12	54.6	10	40.0	13	54.2	13	52.0	7	33.3
4 Yrs High School	8	36.4	7	28.0	6	25.0	7	28.0	12	57.2
Less than 4 Yrs. HS	1	4.5	2	8.0	1	4.2	-	-	-	-
Missing Value	1	4.5	6	24.0	4	16.7	5	20.0	2	9.5

*n = 100 **n = 99

Table 6
Parent's Occupation by Grade Level

Parent's Occupation	Grade Level									
	One		Two		Three		Four		Five	
	(n = 22)		(n = 25)		(n = 24)		(n = 25)		(n = 21)	
	n	%	n	%	n	%	n	%	n	%
Manager/Professional	12	54.6	12	48.0	6	25.0	16	64.0	12	57.1
Sales/Technical	2	27.3	1	4.0	5	20.8	—	—	4	19.0
Service	3	4.5	3	12.0	2	8.3	1	4.0	3	14.3
Operator/Fabricator	—	—	—	—	—	—	—	—	1	4.8
Other	—	—	1	8.0	—	—	1	4.0	—	—
Both	4	18.2	2	8.0	7	29.2	2	8.0	—	—
Missing Value	1	4.5	6	24.0	4	16.7	5	20.0	1	4.8

n = 100

Analysis of Test Performances for Grades One through Five

Test performance raw scores were analyzed for the Total Test, and Subtests One and Two across the total sample of students (n = 117). Raw scores for the total sample are provided in Appendix I. Table 7 summarizes descriptive statistics for the total sample by Total Test and by Subtests One and Two. Figure 2 is a barchart illustrating the distribution of scores across the five test batteries.

Table 7
Descriptive Statistics for the Total Sample (n = 117)

Source	Mean	Median	s	Range
Total Test	32.64	32.00	8.52	43
Subtest One (items 1-25)	14.62	14.00	5.97	24
Subtest Two (items 26-50)	18.02	19.00	3.73	20

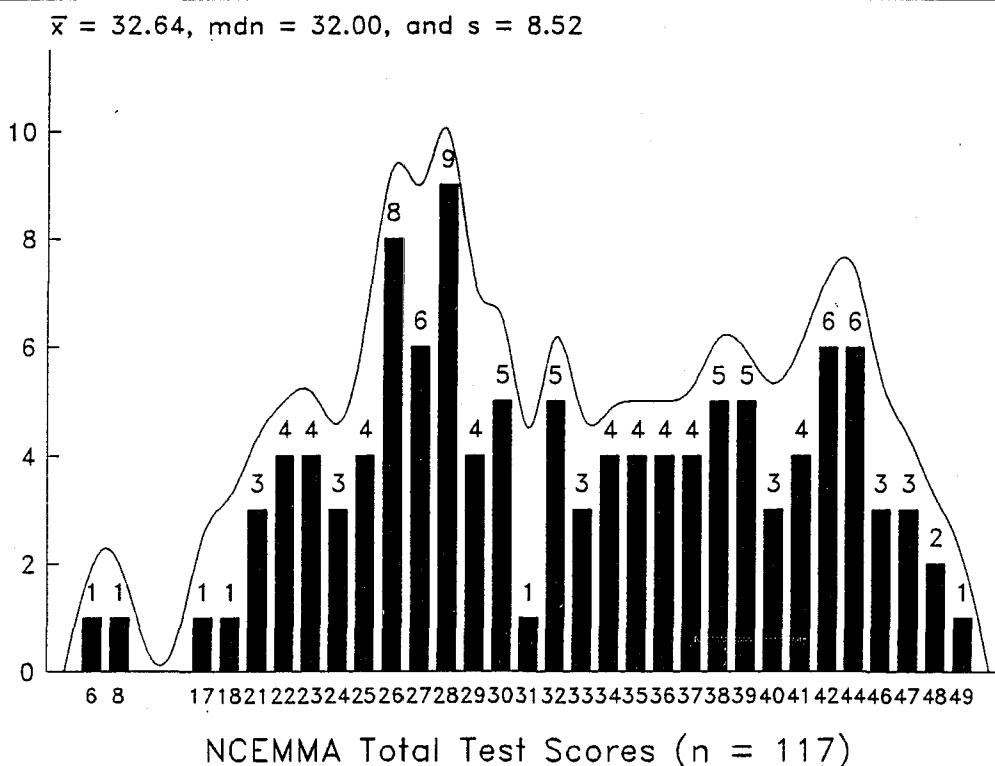


Figure 2. Barchart of the distribution of scores for the total sample of students across the five NCEMMA test batteries.

The *North Carolina Elementary Measures of Music Achievement* consisted of 50 items with 25 items included in Subtest One (items 1-25) and in Subtest Two (items 26-50). The mean test performance for the total sample ($n = 117$) was 32.64. The median was 32.00 and the mode was 28. Measures of central tendency revealed that the distribution was positively skewed slightly.

Examination of the distribution of scores showed that the majority of students scored below the mean (51%) including two extremely low scores (see Figure 2). The range of scores for the total sample was 43 with a standard deviation of 8.52. The percentage of scores between ± 1 standard deviation was 66.67%; 18% of the scores were above one standard deviation and 15% were below one standard

deviation. The mean percentage of items answered correctly by the total sample of students was 65%. Measures of central tendency and variability supported that the distribution of scores was spread evenly across the 43 point range with exception of the two low scores. Approximately 51% of the scores were below the mean; and 49%, above the mean.

Measures of central tendency showed that Subtest One score distribution was positively skewed and supported that the subtest was difficult for the majority of students as reflected in the Total Test scores (see Table 7). The mean percentage of items answered correctly on Subtest One by the total sample of students was 59%. Only 61% of the scores were between ± 1 standard deviation. Subtest two score distribution was negatively skewed indicating that the subtest was less difficult than Subtest One (see Table 7). The mean percentage of items answered correctly on Subtest Two was 72%. The percentage of scores between ± 1 standard deviation was 70% on Subtest Two; the percentage of scores above one standard deviation was 15% and below one standard deviation was 15%.

To determine the consistency of the NCEMMA across the two-day testing period, a two-tailed *t*-test for dependent means was used. Results of the *t*-test confirmed a significant difference between Subtest One and Two means ($p < .001$). Further evidence, therefore, was provided that the first half of the test (Subtest One) was more difficult for the majority of students than Subtest two (see Table 8).

Table 8
Two-tailed t-Test for Dependent Subtest One and Subtest Two Means
for the Total Sample (n = 117)

Source	Mean	Mean Difference	t	df	p
Subtest One	14.62				
		-3.393	-7.16	116	<.001
Subtest Two	18.02				

One-way analyses of variance were used to determine the significance of differences among the means of students' Total Test, Subtest One and Subtest Two test scores in grades one through five. Results of the analyses are summarized in Table 9. The one-way ANOVAs showed that grade significantly affected test performances ($p < .0001$).

Table 9
One-way Analyses of Variance for the
Total Test, and Subtests One and Two by Grade Level

Source	df	Sum of Squares	Mean Square	F ratio	p
Total Test:					
Between Groups	4	5494.8219	1373.7055	52.4726	$p < .0001$
Within Groups	112	2932.1012	26.1795		
Total	116	8490.9915			
Subtest One:					
Between Groups	4	2954.6998	738.6750	70.5448	$p < .0001$
Within Groups	112	1172.7532	10.4710		
Total	116	4127.4530			
Subtest Two:					
Between Groups	4	1060.4156	137.8876	14.5635	$p < .0001$
Within Groups	112	551.5502	9.4680		
Total	116	1611.9658			

<u>Total Test</u>			<u>Subtest One</u>			<u>Subtest Two</u>		
Grade	Mean	54312	Grade	Mean	45312	Grade	Mean	53412
Five	24.33		Four	8.88		Five	14.57	
Four	26.88		Five	9.76		Three	17.25	
Three	31.00	*	Three	13.75	**	Four	18.00	*
One	37.05	***	One	18.73	***	One	18.32	*
Two	43.08	****	Two	21.68	***	Two	21.40	***

Figure 3. Scheffé *post hoc* mean comparisons for grades one through five. Asterisk (*) denotes pairs of means significantly different at .01 level.

Scheffé *post hoc* comparisons were performed to determine the degree to which grades one through five scores on the Total Test, Subtest One and Subtest Two differed significantly (see Figure 3). Grade two had statistically significant higher mean scores than grade one and grades three through five ($p < .01$) on the Total Test. Grade two also had significantly higher Subtest One and Two mean scores than grades three through five ($p < .01$). Grade one mean scores were significantly higher than grades three through five ($p < .01$) on the Total Test and Subtest One. Grade three students scored significantly higher than grades four and five on Subtest One ($p < .01$). Grades one and four mean scores were significantly higher than grade five on Subtest Two ($p < .01$). During analysis of the test qualities of the five NCEMMA test batteries, significant differences in the means directed the researcher to consider two areas for possible test revision: (a) items for grades one and two were not appropriately difficult; and (b) Subtest One for grades three through five possibly did not reflect the developmental level of the students; the first 25 items apparently were too difficult.

Grade One Test Battery

Test Performance

Raw scores for grade one Total Test performance are included in Appendix I. Table 10 presents the descriptive statistics for grade one, and the barchart in Figure 4 illustrates the frequency distribution of scores across the Total Test.

Table 10
Descriptive Statistics for Grade One (n = 22)

Source	Mean	Median	s	Range
Total Test	37.05	38.50	5.04	19
Subtest One (items 1-25)	18.73	19.00	3.63	15
Subtest Two (items 26-50)	18.32	18.50	2.28	10

Total Test performance raw scores were analyzed for students in grade one (n = 22). The mean test performance for grade one was 37.05 with a median of 38.50 and a mode of 41. Measures of central tendency revealed that the distribution was negatively skewed, suggesting that parts of the test were not difficult for the majority of students. The mean percentage of items answered correctly was 74%. The range of scores for grade one was 19 with a standard deviation of 5.04. The percentage of scores between ± 1 standard deviation was 82%, higher than the expected 68.28% in a normal distribution. The percentages of scores higher and lower than one standard deviation were 5% and 13%.

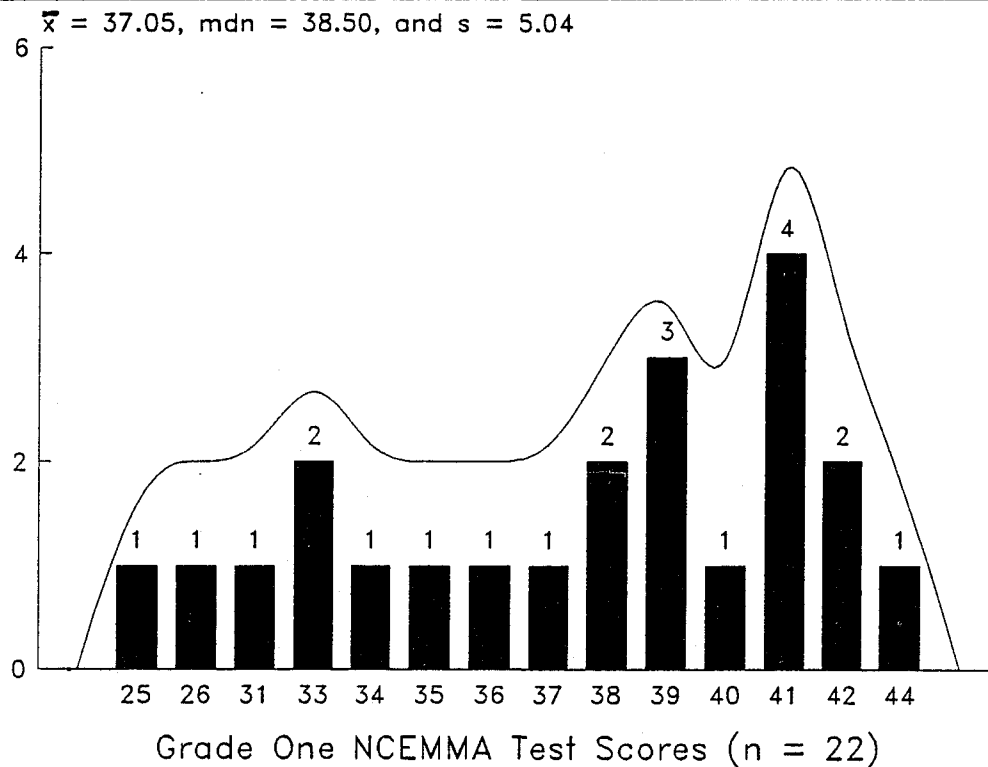


Figure 4. Barchart of the distribution of scores for grade one students across the Total NCEMMA Test battery.

The mean test performance for grade one, Subtest One (25 items), was 18.73. The median was 19 and the bimodal distribution was negatively skewed. The percentage of scores between ± 1 standard deviation was 73% ($s = 3.63$), more than the expected 68.28% in a normal distribution; 9% of the scores were above one standard deviation and 18% were below one standard deviation. The mean percentage of items answered correctly was 75%. Measures of central tendency and variability supported that Subtest One was not difficult for the majority of students. Analysis of the measures of central tendency and variability showed that the majority of scores (64%) were above the relatively high mean score for Subtest One.

Subtest Two had a mean test performance of 18.32 and a median of 18.50 which showed that the distribution had a slight negative skew. The range of scores for Subtest Two was 10 and the standard deviation was 2.28. The percentage of scores which were between ± 1 standard deviation for Subtest Two was 64%; 18% of the scores were above one standard deviation and below one standard deviation. Students in grade one showed a high mean percentage of items answered correctly (73%) which suggested that the test was not difficult for the majority of students.

To determine the consistency of the NCEMMA across the two-day testing period, a two-tailed t-test was used (see Table 11). No significant difference was found between grade one students' Subtest One and Subtest Two test performance means ($p > .05$). Descriptive statistics, mean percentage correct, and t-test results supported the conclusion that test performance for grade one was acceptable.

Table 11
Two-tailed t-Test for Dependent Subtest One and Subtest Two Means
 for Grade One (n = 22)

Source	Mean	Mean Difference	t	df	p
Subtest One	18.73				
Subtest Two	18.32	.409	.570	21	.574

Test Quality

Content of NCEMMA was based on textbook content analysis. State-adopted textbooks (*Music*, Holt, Rinehart, and Winston, 1988; *World of Music*, Silver Burdett and Ginn, 1988) were analyzed and content percentages of lesson presentation were established for each series. Content percentages across the two textbook series were averaged to provide specifications for the test. Complete content analyses of the two textbook series are presented in Appendix A. Averaged content percentages for grade one across both textbook series were 38% rhythm, 31% melody, 15% expressive qualities, 4% timbre, 11% form, and 0% harmony.³ On the fifty item test, the number of items in each concept category was established by using the averaged percentages across both textbooks. Task analysis in each category defined the type of item and item task. Content percentages for grade one NCEMMA test battery were 32% rhythm, 28% melody, 18% expressive qualities, 10% timbre, 12% form, and 0% harmony. The percentage of items for the Total Test by each concept category closely matched the content of the textbook series. To match precisely the content of the textbook series in future revisions of the NCEMMA for grade one, one expressive quality item and three timbre items should be eliminated; and one melody and three

³Content percentages for grade one across both textbook series totaled 99% because of rounding content percentages across the total and core curricula of both series.

rhythm items should be added. At the current stage of developing and testing NCEMMA, the researcher concluded that grade one test battery was content valid.

Item analysis was used to determine the difficulty and discrimination indices of each item. The difficulty index represented the proportion of students answering an item correctly; while the discrimination index represented the correlation of the total test mean and mean scores of students answering an item correctly and incorrectly. The method used to determine discrimination indices of items was point-biserial correlation (Boyle and Radocy, 1987). The item difficulty and discrimination indices were divided into three categories. As supported by Hopkins, Stanley and Hopkins (1990), difficulty indices were classified as easy (1.00-.70), moderate (.69-.40), and difficult (below .40). Discrimination indices were categorized as low (.00-.19), moderate (.20-.39), and high (.40-1.00). If an item negatively discriminated between high and low scoring students; that is, high scoring students answered the item incorrectly, and conversely, low scoring students answered the item correctly; the item was categorized as negative regardless of the discrimination index strength. Item analysis is presented in Tables 12 and 13 for grade one Subtests One and Two, respectively. In the tables, items are grouped by concept category and task, including the percentage of items in a category relative to the total number of test items (1-50); and a brief description of each task accompanies the items. Items that were examined for problems and identified for possible revisions, based on item analysis, are marked with asterisks in the tables.

Table 12
Grade One Subtest One:
Item Analysis by Concept Category, Task, Difficulty and Discrimination

Grade One Subtest One: Melody, Timbre, and Form					
Category:Task (Percentage, Total Test)	Number	Difficulty Index	Item Difficulty	Discrimination Index	Item Discrimination
Melody (1-14, 28%)					
: Five-note pattern, up or down	1	.5909	Moderate	.4571	High
	2	.8636	Easy	.4000	High
: Five-note pattern, up or stays same	3	.9545	Easy	.2000	Moderate
	4	.9091	Easy	.2000	Moderate
: Five-note pattern, down or stays same	5	.8182	Easy	.2889	Moderate
	6	.8182	Easy	.2889	Moderate
: Five-note pattern, up, down or stays same	7	.9545	Easy	.0000	Low
	8	.9091	Easy	.2000	Moderate
: First pitch of two, high or low	9	.9091	Easy	.2000	Moderate
	10	.7273	Easy	.4571	High
	11	.6364	Moderate	.3714	Moderate
	12	.5455	Moderate	.1714	Low
	13	.5909	Moderate	.1143	Low
	14	.6818	Moderate	.8000	High
Timbre (15-19, 10%)					
: Music excerpt, solo instrument timbre (2 choices)	15	.9545	Easy	.2000	Moderate
	16	.9545	Easy	.2000	Moderate
	17	.9545	Easy	.2000	Moderate
: Melodic pattern, high or low register	18	.9091	Easy	.2000	Moderate
	19	.8636	Easy	.4000	High
Form (20-25, 12%)					
: Melodic patterns, same or different (form icons)	20	.3636	Difficult	.5714	High
	21	.5714	Moderate	.8571	High
	22	.5909	Moderate	.3143	Moderate
	23	.5909	Moderate	.4571	High
	24	.6364	Moderate	.3143	Moderate
	25	.5455	Moderate	.6571	High

Table 13
Grade One Subtest Two:
Item Analysis by Concept Category, Task, Difficulty and Discrimination

Grade One Subtest Two: Rhythm and Expressive Qualities					
Category:Task (Percentage, Total Test)	Number	Difficulty Index	Item Difficulty	Discrimination Index	Item Discrimination
<u>Rhythm (26-41, 32%)</u>					
: Music excerpt, beat or no beat	26	.7273	Easy	.2571	Moderate
	*27	.6364	Moderate	-.0857	Negative
	28	.6364	Moderate	.1143	Low
	29	.6364	Moderate	.4571	High

: Four-beat pattern, long or short sounds	30	.8636	Easy	.0571	Low
	31	.8636	Easy	.0571	Low
	32	.9091	Easy	.4000	High
	33	.8182	Easy	.4571	High

: Music excerpt, duple or triple	34	.7273	Easy	.6000	High
	*35	.2727	Difficult	-.2571	Negative
	36	.0909	Difficult	.1429	Low
	*37	.3636	Difficult	-.1143	Negative

: Four-beat patterns, same or different	38	.5000	Moderate	.3143	Moderate
	39	.5455	Moderate	.1714	Low
	40	.7273	Easy	.2571	Moderate
	41	.4091	Difficult	.3143	Moderate
<u>Expressive Qualities</u>					
(42-50, 18%)					
: Music excerpt, restful or energetic	42	1.0000	Easy	.0000	Low
	*43	.9091	Easy	-.1429	Negative

: Music excerpt, fast or slow	44	1.0000	Easy	.0000	Low
	45	.9545	Easy	.2000	Moderate

: Music excerpt, loud or soft	46	.8636	Easy	.0000	Low
	*47	.9545	Easy	-.1429	Negative

: Music excerpt, smooth or detached	48	.8636	Easy	.1071	Low
	49	.9545	Easy	.2000	Moderate

: Music excerpt, gets louder, softer, or louder and softer	50	.9545	Easy	.2000	Moderate

* Items considered or recommended for revisions.

Five items negatively discriminated and were examined for problems in the NCEMMA grade one test battery; these items were 27, 35, 37, 43, and 47. Item 27 presented an excerpt from "And God Created Great Whales" by Alan Hovhaness, a contemporary piece which imitated whale sounds. Students were instructed to indicate if the music had a beat or no beat. No ambiguity was identified in the excerpt because no beat was evident in the piece. No revision was recommended for the item. Item 35 instructed students to indicate whether an aurally presented music excerpt was in duple or triple meter. Item 37 also requested that students aurally discriminate duple or triple meter in a music excerpt. A characteristic common to both items 35 and 37 was a dotted-rhythmic duration at the beginning of the excerpts; item 35 began with a dotted half-note duration; and item 37, with a dotted quarter-note duration. Therefore, students possibly were unable to anchor initially to the metric unit of the excerpts. The music of both items presented ambiguity in terms of meter discrimination; the items should be revised to present music excerpts beginning with the metric unit of duple or triple meter, as appropriate.

Items 43 and 47 measured students' abilities to identify expressive qualities in short, aurally presented music excerpts. Item 43 was the first item in which students indicated whether an excerpt was restful or energetic. The item was easy for students with approximately 91% of the students answering it correctly; however, a moderately high scoring student answered the item incorrectly. The excerpt presented was from the Schubert "March Militaire," which should have

evoked an energetic response from students. Aural examination of the excerpt revealed that the orchestration was not percussive, and that the music was not driving rhythmically nor fast in tempo. Additionally, the intensity level of the recording was noticeably lower than the preceding item. Item 43 should be revised by selecting a music excerpt with percussive orchestration, and with a driving rhythmic quality and fast tempo. Students typically learn to associate these characteristics with an energetic expressive quality. Item 47 instructed students to discriminate loud or soft in an excerpt from "On Hearing a Cuckoo in the Woods" by Frederick Delius. The dynamic level of the excerpt was very soft and should have evoked a soft response. The excerpt, however, began with the familiar pattern of descending minor thirds which possibly distracted students. No music nor item ambiguities were apparent, item revision seemed unnecessary.

Reliability for grade one, estimated by the *Kuder-Richardson, Formula 20* (Kuder and Richardson, 1937), was considered acceptable ($r_{KR20} = .73$). The standard error of measurement was not large at 2.63 points. The test quality was considered acceptable based upon content validity, reliability, standard error of measurement, high mean percentage correct, and the *t*-test for significant difference between Subtest One and Two means. At the onset of the current study, whether grade one students could complete successfully a multiple-choice format music achievement test was questioned. Results showed that NCEMMA grade one test battery was easy to use and students performed well. Design of the test, which required no reading, was satisfactory for first grade.

Grade Two Test Battery

Test Performance

Raw scores for grade two Total Test performance are included in Appendix I. Table 14 presents the descriptive statistics for grade two, and the bar chart in Figure 4 illustrates the frequency distribution of scores across the Total Test.

Table 14
Descriptive Statistics for Grade Two (n = 25)

Source	Mean	Median	s	Range
Total Test	43.08	44.00	3.93	13
Subtest One (items 1-25)	21.68	23.00	3.04	10
Subtest Two (items 26-50)	21.40	22.00	2.06	8

Total Test performance raw scores were analyzed for students in grade two (n = 25). The mean test performance for grade two was 43.08 with a median and mode of 44.00. Measures of central tendency revealed that the distribution was negatively skewed. Range of scores for grade two was 13 with a standard deviation of 3.93. The percentage of scores between ± 1 standard deviation was 68%. The percentages of scores higher and lower than one standard deviation were 12% and 20%, respectively. The mean percentage of items answered correctly was 86%. The high mean percentage of items answered correctly and the negatively skewed distribution revealed that the test was not difficult for the majority of students.

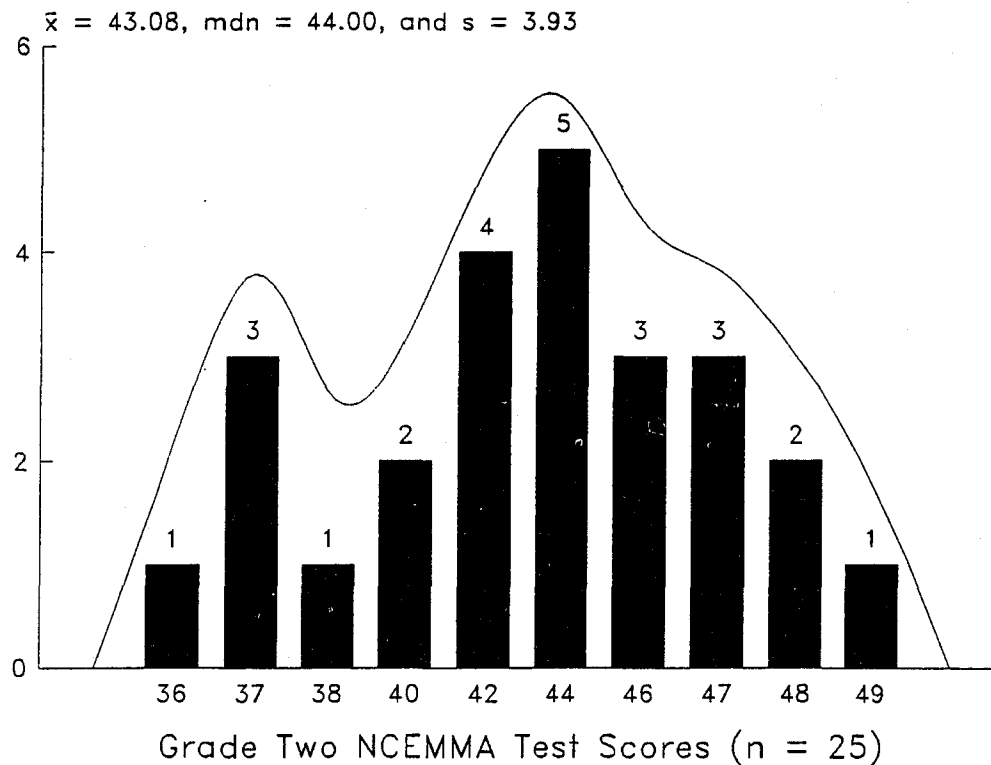


Figure 5. Barchart of the distribution of scores for grade two students across the Total NCEMMA Test battery.

The mean test performance for grade two, Subtest One (25 items), was 21.68. The median was 23 and the mode was 24. The distribution was negatively skewed. Subtest One was not difficult for the majority of students who scored a high mean percentage of items correct (87%). The percentage of scores between ± 1 standard deviation was 72%, more than the expected 68.28% in a normal distribution; 12% of the scores were above one standard deviation and 16% were below one standard deviation ($s = 3.04$). Analysis of the measures of central tendency and variability showed that 40% and 60% of the scores were below and above the mean of the distribution, respectively.

Subtest Two had a mean test performance of 21.40 and a median of 22 which showed that the distribution was negatively skewed. Items 26-50 (Subtest Two) were not difficult for the majority of the students. The mean percentage of items answered correctly was 86%. The distribution was trimodal. The range of scores for Subtest Two was 8 and the standard deviation was 2.06. The percentage of scores which were between ± 1 standard deviation for Subtest Two was 60%; 16% of the scores were above one standard deviation and 24% of the scores were below one standard deviation.

To determine the consistency of the NCEMMA across the two-day testing period, a t-test was used. No significant difference ($p > .05$) was found between grade two students' Subtest One and Two performance means (see Table 15). Descriptive statistics, high mean percentage correct, and t-test results supported the conclusion that students' test performances were acceptable; however, results confirmed that the NCEMMA difficulty for grade two should be increased to measure adequately second grade students' music achievements.

Table 15
Two-tailed t-Test for Dependent Subtest One and Subtest Two Means
for Grade Two (n = 25)

Source	Mean	Mean Difference	t	df	p
Subtest One	21.68				
Subtest Two	21.40	.280	.410	24	.684

Test Quality

The content of NCEMMA test battery was based on content analyses of state-adopted textbooks (see Appendix A). Averaged content percentages for grade two across both textbook series were 34% rhythm, 27% melody, 14% expressive qualities, 6% timbre, 12% form, and 7% harmony.⁴ The number of items in each concept category was determined by the averaged percentages across total and core curricula of both textbook series. Task analysis in each category defined the type of item and item task. Content percentages for grade two test battery were 34% rhythm, 26% melody, 16% expressive qualities, 8% timbre, 10% form, and 6% harmony. The percentage of items for the Total Test for each concept category approximated the content of the textbook series. To exactly reflect textbook content, one timbre item should be eliminated and one expressive quality or form item included. The researcher, however, concluded that the test was content valid.

The item analysis for grade two test battery is included in Tables 16 and 17 for Subtests One and Two, respectively. Items are grouped by concept category and task, including content percentages relative to the Total Test; and a brief description of tasks accompany each group of items. Items that were examined for problems and identified for possible revisions, based on item and task analysis, are marked with asterisks in the tables.

⁴Content percentages for grade two across both textbook series totaled 101% because of rounding content percentages of the total and core curricula of both series.

Table 16
Grade Two Subtest One:
Item Analysis by Concept Category, Task, Difficulty and Discrimination

Grade Two Subtest One: Melody, Form, Harmony, and Timbre					
Category:Task (Percentage, Total Test)	Number	Difficulty Index	Item Difficulty	Discrimination Index	Item Discrimination
Melody (1-13, 26%)					
: First pitch of two, high or low	1	.7600	Easy	.4571	High
	2	.6400	Moderate	.4000	High
	3	1.0000	Easy	.0000	Low
: Melodic pattern, skips down or steps up, aural-visual discrimination (melodic icons)	4	.8400	Easy	.2857	Moderate
	5	.8800	Easy	.2857	Moderate
	6	.9600	Easy	.1429	Low
: Five-note patterns, same or different	7	.9200	Easy	.1429	Low
	8	.8800	Easy	.2857	Moderate
	9	.9600	Easy	.0000	Low
	10	.7600	Easy	.5714	High
	11	.8000	Easy	.0635	Low
	12	.8400	Easy	.4286	High
	13	.9200	Easy	.0000	Low
Form (14-18, 10%)					
: Melodic patterns, AA or ABA (form icons)	14	.4400	Moderate	.3810	Moderate
	15	.6800	Moderate	.7640	High
	16	.9600	Easy	.1429	Low
	17	.8400	Easy	.3175	Moderate
	18	.8000	Easy	.2857	Moderate
Harmony (19-21, 6%)					
: Music excerpt, one melody or more than one melody	19	.9200	Easy	.2857	Moderate
	20	1.0000	Easy	.0000	Low
	21	.9200	Easy	.2857	Moderate
Timbre (22-25, 8%)					
: Music excerpt, solo instrument timbre (2 choices)	22	1.0000	Easy	.0000	Low
	23	1.0000	Easy	.0000	Low
	24	.9200	Easy	.1429	Low
	25	1.0000	Easy	.0000	Low

Table 17
Grade Two Subtest Two:
Item Analysis by Concept Category, Task, Difficulty and Discrimination

Grade Two Subtest Two: Rhythm and Expressive Qualities					
Category:Task (Percentage, Total Test)	Number	Difficulty Index	Item Difficulty	Discrimination Index	Item Discrimination
<u>Rhythm</u> (26-42, 34%)					
: Music excerpt, beat or no beat	26	1.0000	Easy	.0000	Low
	27	.9200	Easy	.1429	Low
	28	.8800	Easy	.2857	Moderate
	29	.6800	Moderate	.6032	High
: Four-beat patterns, same or different	30	.9583	Easy	.6032	High
	31	.8800	Easy	.1667	Low
	32	.9200	Easy	.4286	High
	33	.6667	Moderate	.2857	Moderate
: Music excerpt, duple or triple	*34	.8000	Easy	-.1111	Negative
	35	.6400	Moderate	.5714	High
	*36	.2000	Difficult	-.4286	Negative
	37	.4400	Moderate	.3810	Moderate
: Four-beat pattern, aural-visual discrimination (rhythmic icons)	38	.9600	Easy	.0000	Low
	39	.8400	Easy	.0317	Low
	40	.9600	Easy	.1429	Low
: Four-beat pattern, aural-visual discrimination (music notation)	41	1.0000	Easy	.0000	Low
	42	.8400	Easy	.3175	Moderate
<u>Expressive Qualities</u> (43-50, 16%)					
: Music excerpt, fast or slow	43	1.0000	Easy	.0000	Low
	44	1.0000	Easy	.0000	Low
: Music excerpt, gets faster or slower	45	.9600	Easy	.0000	Low
	46	.9583	Easy	.7500	High
	47	.9200	Easy	.1429	Low
: Music excerpt, loud or soft	48	.8400	Easy	.2857	Moderate
	49	.9600	Easy	.0000	Low
	*50	.9200	Easy	-.1111	Negative

* Items considered or recommended for revisions.

Negatively discriminating items for grade two were items 34, 36, and 50. Of those three items, one was the first example in a category, which possibly confused students initially. Item 34 was the first item in which students indicated whether the music moved in twos or threes. The example was an excerpt from the "Minuet" in *Royal Fireworks Music* by G. F. Handel. Ambiguity perhaps occurred in two areas. First, the initial rhythmic pattern was a half note followed by a quarter note; and, therefore, the metric unit was not the first duration of the excerpt. Second, the excerpt did not have a driving steady beat. To revise Item 34, a different excerpt presenting the metric unit as the first duration with driving steady beats should be chosen. In item 36, students also were requested to indicate whether the music moved in twos or threes. The excerpt was from the "Dance of the Reed Pipes" in *The Nutcracker Suite* by Tchaikovsky. The excerpt did not begin with the metric unit as the first duration; two sets of eighth-note durations were the initial sounds. As for item 34, item 36 should be revised by using a different excerpt which presents the metric unit as the first duration. Item 50 was the third item in a group of tasks in which students identified an excerpt as loud or soft. The excerpt was from "Ase's Death," *Peer Gynt Suite* by Edvard Grieg. The item was easy; 92% of the students answered it correctly. A moderately high scoring student answered incorrectly resulting in negative discrimination; possibly the student's attention to the task lapsed. Analysis of the excerpt and instructions in item 50 revealed no ambiguity; therefore, no revision was recommended.

Reliability for Grade Two, estimated by the *Kuder-Richardson, Formula 20*, was considered acceptable ($r_{KR20} = .71$). The standard error of measurement for grade two was 2.12 points. A high mean percentage correct for both subtests supported the conclusion that the test quality for grade two was acceptable. The test was easy to use and students performed well. Design of the test, which required no reading, was satisfactory for second grade. Based on descriptive statistics and measures of test qualities, the test was considered acceptable; however, it should be increased in difficulty.

Grade Three Test Battery

Test Performance

Raw scores for grade three Total Test performance are presented in Appendix I. Table 18 includes the descriptive statistics for grade three, and the frequency distribution of raw scores across the Total Test is illustrated by the barchart in Figure 6.

Table 18
Descriptive Statistics for Grade Three (n = 24)

Source	Mean	Median	s	Range
Total Test	31.00	31.00	4.95	16
Subtest One (items 1-25)	13.75	13.50	3.22	11
Subtest Two (items 26-50)	17.25	17.50	2.64	11

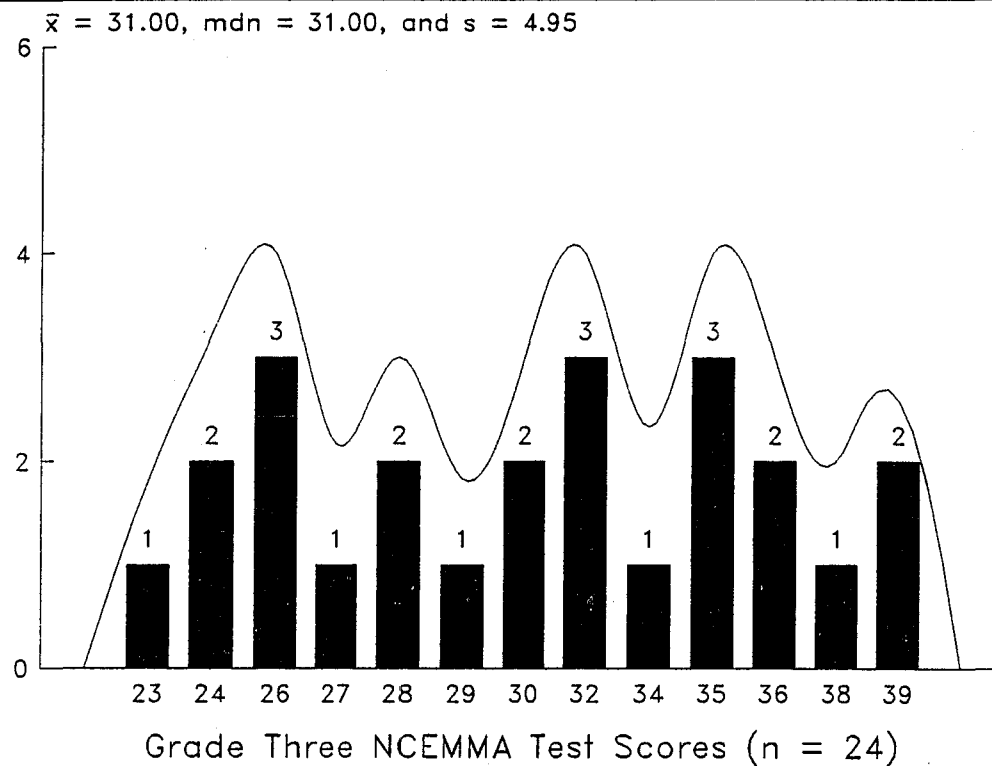


Figure 6. Barchart of the distribution of scores for grade three students across the Total NCEMMA Test battery.

Total test performance raw scores were analyzed for students in grade three (n = 24). The mean and median test performances for students in grade three were 31.00, with a trimodal distribution of scores. Measures of central tendency showed that the distribution of the scores was not noticeably skewed. However, three modes, one five points lower than the mean and two higher than the mean by one point and by four points, suggested that the scores were not normally distributed. Approximately sixty-seven percent of the students answered less than 70% of the items correctly which showed that parts of the test were difficult for the majority of students. The mean percentage of items answered correctly by students in the grade three was 62%, providing further evidence that the test was

difficult. The range of scores for grade three was 16 with a standard deviation of 4.95. The percentage of scores which fell between ± 1 standard deviation from the mean was 54%, lower than the expected 68.28% in a normal distribution. The percentage of scores higher than one standard deviation was 21% and the percentage of scores lower than one standard deviation was 25%. Examination of measures of central tendency and variability supported that the scores were distributed evenly across the 16 point range with 50% of the scores above and below the mean.

Examination of the measures of central tendency for Subtests One and Two showed the Subtest One was positively skewed ($\bar{x} = 13.75$; $\text{mdn} = 13.5$) and Subtest Two was negatively skewed ($\bar{x} = 17.25$; $\text{mdn} = 17.5$). The percentage of scores between ± 1 standard deviation for Subtest One ($s = 3.22$) was 54% and for Subtest Two ($s = 2.64$) was 75%. The percentage of scores higher than one standard deviation from the mean was 33% for Subtest One and 17% for Subtest Two. The percentage of scores lower than one standard deviation below the mean was 13% for Subtest One and 8% for Subtest Two. The positive skew for Subtest One suggested that portions of the test were difficult for the majority of students; however, the negative skew for Subtest Two indicated that it was not difficult for the majority of students. The mean percentage of items answered correctly by students in grade three on Subtest One was low at 55% supporting that the test was difficult. The mean percentage of items answered correctly on Subtest Two was 69%.

To determine the consistency of the NCEMMA across the two-day testing period for grade three, mean scores from Subtests One and Two were compared using a *t*-test (see Table 19). There was a significant difference between the two subtest means ($p < .001$). Students' mean test performance on the first half of the test (Subtest One) was significantly lower than their performance on Subtest Two (items 26-50). The difference between students' Subtest One and Two performances provided additional evidence that Subtest One was beyond students' abilities (see Table 19).

Table 19
Two-tailed *t*-Test for Dependent Subtest One and Subtest Two Means
 for Grade Three (n = 24)

Source	Mean	Mean Difference	<i>t</i>	df	<i>p</i>
Subtest One	13.75				
		-3.500	-5.38	23	<.001
Subtest Two	17.25				

Test Quality

Content of the NCEMMA for grade three test battery was based on textbook content analysis (see Appendix A). Averaged content percentages across the two textbook series for grade three were 31% rhythm, 23% melody, 17% expressive qualities, 4% timbre, 13% form, and 12% harmony. Content percentages for grade three test battery were 32% rhythm, 28% melody, 20%

expressive qualities, 8% timbre, 6% form, and 6% harmony. Several revisions to the content of grade three test battery should be made to accurately reflect the content of both textbook series. Revision to content validity would include eliminating two melody items, two expressive quality items, and two timbre items, and adding three form items and three harmony items. Currently, the content validity for grade three NCEMMA was considered acceptable, but content validity would require careful attention in future research.

Item analysis for grade three test battery is presented in Tables 20 and 21 for Subtests One and Two, respectively. Items are grouped by concept category and task, including content percentages, and brief descriptions of tasks accompany each group of items. Items that were examined for problems and identified for possible revisions, based on the item and task analysis are marked with asterisks in the tables.

Five items on Subtest One were identified for possible revision. Items 9 and 10 required students to identify the form of aurally presented music as represented by geometric shapes or form icons. Melodic patterns, organized by a traditionally defined form (e.g., ABA), were presented aurally one time; no music notation was provided for melodic patterns. Because form icons and music notation are used during music lessons on form at this grade level, the form items should be revised to match the way form is presented customarily in third-grade music classrooms. Two areas of revision were considered for items 9 and 10 in

Table 20
Grade Three Subtest One:
Item Analysis by Concept Category, Task, Difficulty and Discrimination

Grade Three Subtest One: Melody, Form, Expressive Qualities, Harmony, and Timbre					
**Category:Task (Percentage, Total Test)	Number	Difficulty Index	Item Difficulty	Discrimination Index	Item Discrimination
Melody					
(1-8, 20-25, 28%)	1	.6250	Moderate	.3750	Moderate
: Five-note pattern,	2	.7083	Easy	.3750	Moderate
up, down or stays	3	.8333	Easy	.3333	Moderate
same	4	.9107	Easy	.3333	Moderate
: Five-note patterns,	5	.5000	Moderate	.5833	High
same or different	6	.6667	Moderate	.4167	High
	7	.8750	Easy	.3333	Moderate
	8	.7083	Easy	.0833	Low
: Melodic pattern,	*20	.1256	Difficult	-.0417	Negative
skips or steps,	21	.5833	Moderate	.2917	Moderate
up or down, aural-	22	.2500	Difficult	.3333	Moderate
visual discrimination	23	.2500	Difficult	.3333	Moderate
(melodic icons)	*24	.5417	Moderate	.1667	Low
	*25	.3478	Difficult	-.1250	Negative
Form (9-11, 6%)					
: Melodic pattern,	* 9	.1250	Difficult	.0833	Low
ABA, AAA, ABB or	*10	.3750	Difficult	-.1250	Negative
AAB (form icons)	11	.3750	Difficult	.5833	High
Expressive Qualities (12-15, 8%)					
: Music excerpt,	12	.0833	Difficult	.1250	Low
style label	13	.9167	Easy	.0417	Low
(4 choices/item)	14	.8333	Easy	.3333	Moderate
	15	.9091	Easy	.2083	Moderate
Harmony (16-18, 6%)					
: Music excerpt,	16	.3750	Difficult	.4583	High
one melody,	17	.5417	Moderate	.3750	Moderate
two melodies, or	18	.5833	Moderate	.6667	High
melody & harmony					
Timbre (19, 2%)					
: Melodic pattern,	19	.7500	Easy	.2083	Moderate
high or low register					

* Items recommended for revision.

**Items 20-25 are grouped by concept category and are not presented in test order.

Table 21
Grade Three Subtest Two:
Item Analysis by Concept Category, Task, Difficulty and Discrimination

Grade Three Subtest Two: Rhythm, Expressive Qualities, and Timbre					
Category:Task (Percentage, Total Test)	Number	Difficulty Index	Item Difficulty	Discrimination Index	Item Discrimination
Rhythm (26-41, 32%)					
: Music excerpt, beat or no beat	*26	.7083	Easy	-.4167	Negative
	27	.8333	Easy	.3333	Moderate
	28	.7500	Easy	.5000	High
: Music excerpt, beat, changing beat, or no beat	29	.5000	Moderate	.2500	Moderate
	30	.7083	Easy	.0000	Low
	*31	.1667	Difficult	.0000	Low
: Four-beat pattern, aural-visual discrimination (rhythmic icons)	32	.5000	Moderate	.6250	High
	33	.7500	Easy	.4583	High
: Four-beat pattern, aural-visual discrimination (music notation)	34	.5417	Moderate	.5417	High
	35	.7917	Easy	.3750	Moderate
: Four-beat pattern, same or different	36	.8750	Easy	.3333	Moderate
	37	.7917	Easy	.3333	Moderate
	38	.8750	Easy	.0417	Low
: Music excerpt, duple, triple or mixed	39	.6250	Moderate	.5417	High
	40	.2083	Difficult	.0833	Low
	41	.6667	Moderate	.5417	High
Expressive Qualities (42-47, 12%)					
: Music excerpt, gets louder, softer or louder and softer	*42	.5833	Moderate	-.1667	Negative
	43	.8333	Easy	.3333	Moderate
	44	.8750	Easy	.3333	Moderate
: Music excerpt, gets faster or slower	45	.7917	Easy	.2083	Moderate
	46	.5417	Moderate	.2917	Moderate
	47	.7500	Easy	.3333	Moderate
Timbre (48-50, 6%)					
: Music excerpt, solo instrument timbre (4 choices)	*48	.7500	Easy	-.3333	Negative
	49	1.0000	Easy	.0000	Low
	50	1.0000	Easy	.0000	Low

* Items considered or recommended for revisions.

future development and testing of the NCEMMA: (a) melodic patterns should be aurally presented twice, and (b) music notation should be provided for each pattern. Items 20, 24, and 25 required students to select from four icons which represented melodic contours containing pitch distance and direction information (e.g., a melodic contour skips up). The items should be revised by separating the two aural-visual discrimination tasks included in the items; that is, identifying a melodic contour containing pitches which skip or step should be separated from identifying a melodic contour moving up or down. This revision to items 20 through 25 would reduce the number of answer choices from four to two, and thereby, reduce the difficulty of these Subtest One items.

Four items were identified as problematic on Subtest Two. Both items 26 and 31 were in the rhythm category and instructed students to identify characteristics relating to beat. Item 26 required students to indicate if the music excerpt had a beat or no beat. The item was relatively easy with 70% of the students answering it correctly; however, high scoring students answered the item incorrectly. Examination of the music excerpt revealed that it did not begin with the metric unit and also was a familiar medley of songs, "London Bridge," and "Mary Had a Little Lamb." The familiarity of the melodies possibly attracted students' attentions and distracted them from the task. The item should be revised to include an excerpt that is not familiar and begins with the metric unit to which students can anchor. In Item 31, students indicated whether a music excerpt had a beat, a changing beat, or no beat. Intrinsic ambiguity in the item was the subtle

change in the tempo across the music excerpt. The item should be revised by using a different music excerpt which has increased contrast in the changing beats; that is, has an increased and definite change of tempo across the excerpt. Item 42 was the first item in a task set of the expressive qualities category in which students indicated whether a music excerpt got louder or softer. Five high scoring students indicated that they did not know the answer, which suggested that the excerpt was ambiguous. Possibly because of white noise in the original vinyl recording of the excerpt, students could not discriminate that the music got softer. Item 42 should be revised by using a different excerpt in which the decrescendo is not obscured by white noise. Item 48 was the first item of a set in which students identified the instrument playing. The excerpt was from the cadenza of J. N. Hummel's *Trumpet Concerto in E flat Major*. The quality of sound on the recording was acceptable and the performance virtuosic. No instructional nor music ambiguities were identified; therefore, revision was not recommended.

Reliability for grade three, estimated by the *Kuder-Richardson, Formula 20*, was considered acceptable ($r_{KR20} = .65$). The standard error of measurement for grade three was 2.91 points. The test quality of grade three NCEMMA was accepted conditionally. The significant difference between Subtest One and Two means ($t = -5.38, p < .001$) indicated that difficult, and low or negatively discriminating items, especially on Subtest One should be revised. Elimination of ambiguity in items would increase performance levels on both subtests and

subsequently increase the reliability of the test. Additionally, increasing the content validity of grade three test battery should increase the test's reliability.

Grade Four Test Battery

Test Performance

Raw scores for grade four Total Test performance are presented in Appendix I. Table 22 presents the descriptive statistics for grade three, and the barchart in Figure 7 illustrates the distribution of scores across the Total Test.

Table 22
Descriptive Statistics for Grade Four (n = 25)

Source	Mean	Median	s	Range
Total Test	26.88	28.00	7.01	32
Subtest One (items 1-25)	8.88	9.00	3.56	15
Subtest Two (items 26-50)	18.00	19.00	4.59	19

Total test performance raw scores were analyzed for students in grade four (n = 25). The mean test performance for grade four was 26.88 with a median and mode of 28.00. Measures of central tendency revealed that the distribution was negatively skewed and suggested that parts of the test were difficult for some students, but not the majority of students. Additionally, the low mean percentage of items answered correctly (54%) provided evidence that some tasks included in

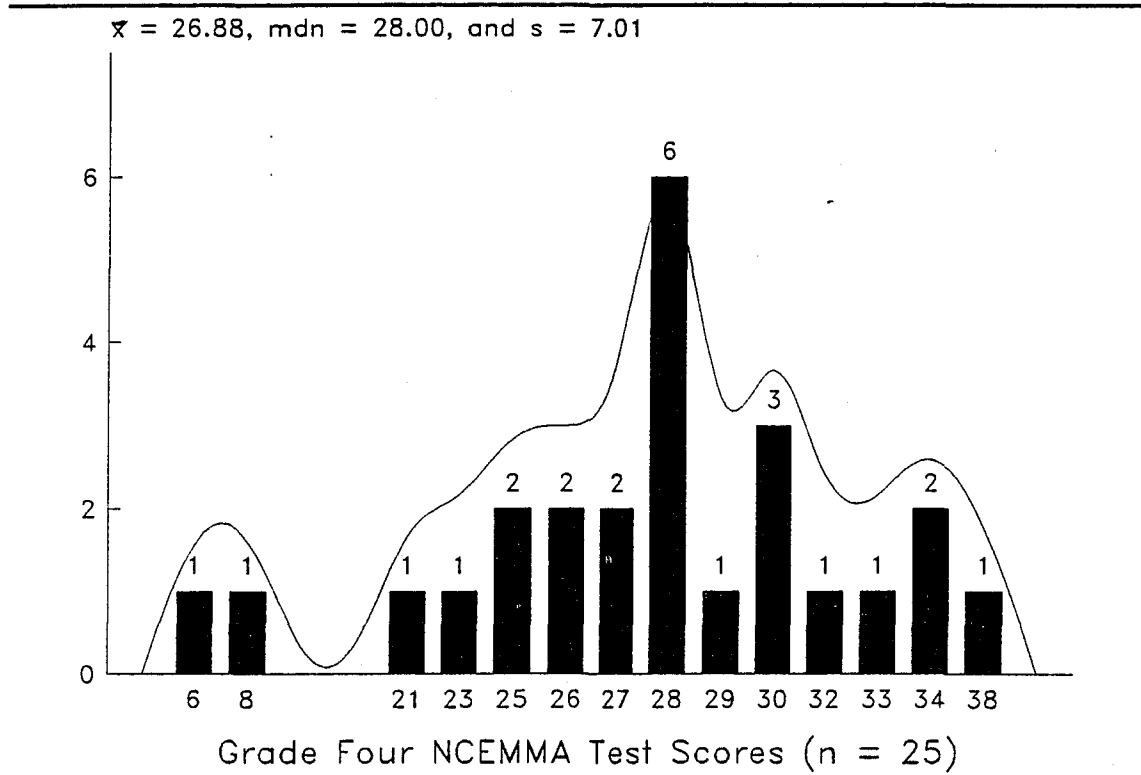


Figure 7. Barchart of the distribution of scores for grade four students across the Total NCEMMA Test battery.

the test battery were too difficult. The range of scores for grade four was 32 with a standard deviation of 7.01. The percentage of scores between ± 1 standard deviation was 80%, higher than the expected 68.28% in a normal distribution. The percentage of scores higher than one standard deviation was 12%; the percentage of scores lower than one standard deviation was 8%. Two extremely low scores (see Figure 7), more than 2 standard deviations below the mean, resulted in a mean lower than the majority of students in grade four performed.

The mean test performance on Subtest One for grade four was 8.88. The median was 9.00; the bimodal distribution was negatively skewed. The low mean percentage of items answered correctly of 36% suggested that Subtest One was

difficult for students and possibly contributed to the low mean performance by grade four students on the Total Test. The percentage of scores between ± 1 standard deviation was 64%, less than the expected 68.28% in a normal distribution; 20% of the scores were above one standard deviation and 16% were below one standard deviation. Analysis of the distribution of scores supported that measures of central tendency and variability were affected by two extremely low scores and one high score which were above and below the mean more than two standard deviations. The range of scores for Subtest One was 15. Figure 7 also illustrates similar effects of extremely low scores on the mean performance across the Total Test, which provides additional credence to the premise that students' low test performance on Subtest One skewed the Total Test mean performance for grade four.

Subtest Two had a mean test performance of 18.00 with a median of 19.00. The distribution of scores was negatively skewed, and the high mean percentage of items answered correctly was 72% which was considerably higher than Subtest One performance. Tasks included in Subtest Two appeared to be easier for students than tasks in Subtest One. The range of scores for Subtest Two was 19 and the standard deviation was 4.59. The percentage of scores which were between ± 1 standard deviation for Subtest Two was 84%; 4% of the scores were above one standard deviation, and 8% of the scores were below one standard deviation.

To determine the consistency of the NCEMMA across the two-day testing period, a *t*-test was used. A significant difference ($p < .001$) was found between grade four students' Subtest One and Two performance means (see Table 23). Descriptive statistics, high mean percentage correct on Subtest Two, and *t*-test results supported the conclusion that students' test performance for grade four was acceptable for Subtest Two and was unacceptable for Subtest One. Grade four test performance for Subtest One suggested that some items in the first half of the test required revisions. Special attention was given by the researcher to eliminate item and task ambiguities and to identify concept-category tasks which were beyond students' abilities.

Table 23
Two-tailed *t*-Test for Dependent Subtest One and Subtest Two Means
 for Grade Four (n = 25)

Source	Mean	Mean Difference	<i>t</i>	df	<i>p</i>
Subtest One	8.88				
Subtest Two	18.00	-9.120	-10.64	24	<.001

Test Quality

The content of NCEMMA grade four test battery was based on textbook content analysis (see Appendix A). Averaged content percentages for grade four across both textbook series were 24% rhythm, 19% melody, 17% expressive

qualities, 11% timbre, 14% form, and 15% harmony. Content percentages for grade four test battery were 22% rhythm, 20% melody, 18% expressive qualities, 10% timbre, 16% form, and 14% harmony. The percentage of items for the Total Test for each concept category approximated the content of the textbook series. To match the textbook content exactly, one form item should be eliminated, and one rhythm item added. The researcher concluded that grade four test battery was content valid; however, the validity of task difficulty levels, particularly in Subtest One were questioned yet reflected the tasks included in both textbook series.

Item analysis for grade four test battery is presented in Tables 24 and 25 for Subtests One and Two, respectively. In the Tables, items are grouped by concept category and task, including content percentages relative to the Total Test. Brief descriptions of tasks accompany each group of items. Items that were examined for problems and identified for possible revisions, based on item and task analysis, are marked with asterisks in the tables.

Ten items across the Total Test for grade four were examined for ambiguity. In item 3, students indicated whether two seven-note melodic patterns were the same, different, or almost the same. Only two pitches of the second melody were different from the first melody, making the item highly difficult with only 24% of the students answering it correctly. The researcher, however, examined the item and found no instructional nor music ambiguities. No revision was recommended for item 3. Items 12, 14, 15, 16, and 17 had either low or

Table 24
Grade Four Subtest One:
Item Analysis by Concept Category, Task, Difficulty and Discrimination

Grade Four Subtest One: Melody, Form, and Harmony					
Category:Task (Percentage, Total Test)	Number	Difficulty Index	Item Difficulty	Discrimination Index	Item Discrimination
Melody (1-10, 20%)					
: Seven-note patterns, same, different or almost same	1	.8400	Easy	.2083	Moderate
	2	.5600	Moderate	.5417	High
	*3	.2400	Difficult	-.2083	Negative
<hr/>					
: Seven-note patterns, high and low, same or different	4	.3200	Difficult	.2083	Moderate
<hr/>					
: Melodic pattern, skips or steps, up or down, aural- visual discrimination (music notation)	5	.0800	Difficult	.1250	Low
	6	.7500	Easy	.4167	High
<hr/>					
: Melodic pattern, aural-visual discrimination (music notation)	7	.5000	Moderate	.7424	High
	8	.6250	Moderate	.5417	High
	9	.5000	Moderate	.7083	High
	10	.5833	Moderate	.4167	High
<hr/>					
Form (11-18, 16%)					
: Melodic patterns, AABA, ABA, AABB, or ABACA (form icons)	11	.1200	Difficult	.2500	Moderate
	*12	.3200	Difficult	-.0833	Negative
	13	.2800	Difficult	.2083	Moderate
	*14	.2800	Difficult	.0833	Low
	*15	.2400	Difficult	.0417	Low
	*16	.3200	Difficult	.1667	Low
	*17	.0800	Difficult	-.1667	Negative
	18	.2000	Difficult	.2500	Moderate
<hr/>					
Harmony (19-25, 14%)					
: Music excerpt, one melody, two melodies, melody & harmony, or round	*19	.2000	Difficult	-.0417	Negative
	20	.3600	Difficult	.3333	Moderate
	21	.3200	Difficult	.6250	High
	*22	.2000	Difficult	-.0417	Negative
	23	.4400	Moderate	.2917	Moderate
	24	.3600	Difficult	.3333	Moderate
	25	.2800	Difficult	.5000	High

* Items considered or recommended for revisions.

Table 25
Grade Four Subtest Two:
Item Analysis by Concept Category, Task, Difficulty and Discrimination

Grade Four Subtest Two: Rhythm, Expressive Qualities, and Timbre					
Category:Task (Percentage, Total Test)	Number	Difficulty Index	Item Difficulty	Discrimination Index	Item Discrimination
<u>Rhythm (26-36, 22%)</u>					
: Music excerpt, beat, gets faster, gets slower, or no beat	26	1.0000	Easy	.0000	Low
	27	.6400	Moderate	.5417	High

: Four-beat patterns, same or different	28	.8800	Easy	.0417	Low
	29	.7600	Easy	.0833	Low

: Four-beat pattern, aural-visual	30	.7200	Easy	.3750	Moderate
	31	.6000	Moderate	.2500	Moderate
discrimination	*32	.7200	Easy	-.0833	Negative
(music notation)	33	.5600	Moderate	.8333	High

: Music excerpt, duple, triple or mixed	34	.4000	Difficult	.4583	High
	35	.3600	Difficult	.6250	High
	*36	.3600	Difficult	-.2917	Negative
<u>Expressive Qualities</u> (37-45, 18%)					
: Music excerpt, loud, soft, gets louder or gets softer	37	.8000	Easy	.2083	Moderate
	38	.7917	Easy	.3750	Moderate
	39	.5200	Moderate	.2500	Moderate

: Music excerpt, fast, slow, gets faster or gets slower	40	.7083	Easy	.5649	High
	41	.8750	Easy	.2013	Moderate
	42	.7500	Easy	.4740	High

: Music excerpt, style label (4 choices)	43	.9583	Easy	.3300	Moderate
	44	.9583	Easy	.3300	Moderate
	45	.9583	Easy	.3300	Moderate
<u>Timbre (46-50, 10%)</u>					
: Music excerpt, solo instrument timbre (4 choices/item)	46	.9583	Easy	.5000	High
	47	.9583	Easy	.5000	High
	48	.5652	Moderate	.5833	High
	49	.9130	Easy	.3750	Moderate
	50	.8696	Easy	.5417	High

* Items considered or recommended for revisions.

negative discrimination indices and high difficulty indices. Only 8% to 32% of the students answered these five items correctly. The items were in the form category in which students identified the form of aurally presented music by associating the form with a series of geometric shapes or form icons. Melodic patterns, organized by a traditionally defined form (e.g., ABACA), were presented aurally one time; music notation of the patterns was not provided. Analysis of the items indicated that the melodies should be presented more than once, and that music notation of each melody should be provided. Items 19 and 22 required students to indicate whether an excerpt was one melody, a melody and a countermelody, a melody and harmony, or a round. The items negatively discriminated and were highly difficult with only 20% of the students answering the items correctly; five low to average scoring students answered correctly. Item 19 was a melody and countermelody; Item 22 was a two-part round. The researcher concluded that similar definitions of countermelody and two-part round in both textbook series possibly explained the difficulty of the two items for the majority of students. Items 19 and 22 should be revised by eliminating either round or melody and countermelody in the same set of items and foils.

Item 32 required students to match a four-beat rhythm pattern with music notation. The item was free of ambiguity and was not a pattern that started with eighth-notes. Additionally, the item was not difficult with the majority of students answering it correctly (72%). Item 32 was not revised. Item 36 required students to indicate whether a music excerpt moved in twos or threes. The excerpt,

"Minuet" from G. F. Handel's *Royal Fireworks Music*, presented the same problems for students in grade two. Ambiguity occurred because the initial rhythmic pattern of the excerpt was a half-note duration followed by a quarter-note duration which possibly presented the feeling of duple meter rather than triple meter, and also students initially could not anchor to the metric beat or unit of the music. Item 36 should be revised by using a different excerpt in which the metric beat is more easily recognized than in Handel's "Minuet".

Reliability for grade four, estimated by the *Kuder-Richardson, Formula 20*, was considered acceptable ($r_{KR20} = .84$). The standard error of measurement for Grade Four was 2.80 points. The low mean percentage of items correct for Subtest One strongly supported revising Subtest One, especially in the form category. Except for the problems reported in the form category, the test design was useable, and the items were some of the most discriminating across the five test batteries and were at an appropriate difficulty level.

Grade Five Test Battery

Test Performance

Raw scores for grade five Total Test performance are included in Appendix I. Table 26 presents the descriptive statistics for grade five, and the barchart in Figure 8 illustrates the distribution of scores across the Total Test.

Table 26
Descriptive Statistics for Grade Five (n = 21)

Source	Mean	Median	s	Range
Total Test	24.33	24.00	3.77	15
Subtest One (items 1-25)	9.76	10.00	2.57	8
Subtest Two (items 26-50)	14.57	14.00	3.03	12

Total Test performance raw scores were analyzed for students in grade five (n = 21). The mean test performance for grade five was 24.33 with a median of 24.00 and mode of 22. Measures of central tendency showed that the distribution of scores was positively skewed slightly. There were no extreme scores (see Figure 8). The range of scores for grade five was 15 with a standard deviation of 3.77. The percentage of scores which fell between ± 1 standard deviation was 76%, higher than the 68.28% expected in a normal distribution. The percentage of scores which were higher than one standard deviation was 14%; the percentage of scores lower than one standard deviation was 10%. The mean percentage of items answered correctly by fifth grade students was 49%. Grade five students averaged the lowest mean score across the five grades tested; 100% of the students answered less than 65% of the items correctly across the Total Test. The low percentage of items answered correctly suggested that NCEMMA was difficult for grade five students.

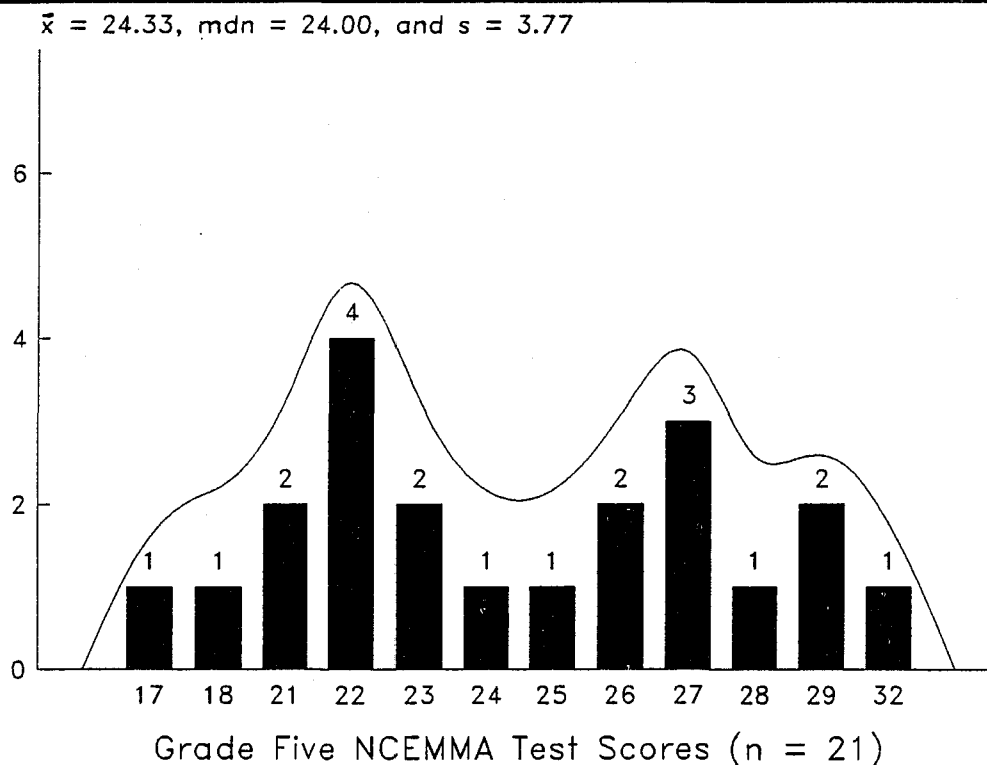


Figure 8. Barchart of the distribution of scores for grade five students across the Total NCEMMA Test battery.

The mean test performance for grade five on Subtest One was 9.76 with a median of 10.00 and mode of 12. The standard deviation for Subtest One was 2.57 with 76% of the scores between ± 1 standard deviation, higher than the 68.28% expected in a normal distribution. The mean percentage of items answered correctly on Subtest One was 39% suggesting that the subtest was difficult for students and possibly needed revising. Additionally, grade five students' Subtest One performance guided the researcher to examine carefully the validity of some of the tasks included on the test which reflected, however, the tasks included in both textbook series.

Subtest Two had a mean of 14.57 and a median of 14.00 which indicated that the distribution of scores for the subtest was slightly positively skewed. The standard deviation for Subtest Two was 3.03 with 67% of the scores between ± 1 standard deviation. The percentage of scores below one standard deviation was 14%; 19% of the scores were above one standard deviation. The mean percentage of items answered correctly in Subtest Two by students in grade five was 58% which suggested that Subtest Two was less difficult for grade five than Subtest One. However, the mean percentage of items correct was low for Subtest Two providing additional evidence that the Total Test for grade five was difficult.

To determine the consistency of the Total Test for grade five across the two-day testing period, scores from Subtest One and Subtest Two were compared using a t-test. Difference between subtest means was significant ($p < .001$). A significant difference between means indicated that revisions should be made to the test, and that Subtest One was noticeably more difficult for students in grade five than Subtest Two. Results of the t-test are reported in Table 27.

TABLE 27
Two-tailed t-Test for Dependent Subtest One and Subtest Two Means
for Grade Five (n = 21)

Source	Mean	Mean Difference	t	df	p
Subtest One	9.76				
		-4.809	-5.300	20	<.001
Subtest Two	14.57				

Test Quality

Content of the NCEMMA for grade five test battery was based on textbook content analysis (see Appendix A). Averaged content percentages for grade five across both textbook series were 27% rhythm, 18% melody, 18% expressive qualities, 5% timbre, 13% form, and 19% harmony. Content percentages for grade five test battery were 26% rhythm, 26% melody, 18% expressive qualities, 6% timbre, 18% form, and 6% harmony. Several revisions to the content of grade five test battery should be made to match more accurately the content of the textbook series. Revision to content validity would include eliminating four melody items and two form items, and adding six harmony items. The current content validity for grade five NCEMMA was considered conditionally acceptable. Content validity for grade five test battery would require revision prior to readministration of the test. Additionally, the validity of some of the tasks were questioned, yet, the tasks reflected those included in both textbook series.

Item analysis for grade five test battery is presented in Tables 28 and 29 for Subtests One and Two, respectively. In the Tables, items are grouped by concept category and task, including content percentages relative to the Total Test. Brief descriptions of tasks accompany each group of items. Items that were examined for problems and identified for possible revisions, based on the item and task analysis, are marked with asterisks in the tables.

Table 28
Grade Five Subtest One:
Item Analysis by Concept Category, Task, Difficulty and Discrimination

Grade Five Subtest One: Harmony, Melody, and Form					
**Category:Task (Percentage, Total Test)	Number	Difficulty Index	Item Difficulty	Discrimination Index	Item Discrimination
Harmony (1-3, 6%)					
: Music excerpt, one melody,	*1	.1429	Difficult	-.0417	Negative
two melodies,	2	.4762	Moderate	.0000	Low
melody & harmony, or round	3	.2857	Difficult	.5000	High
Melody (4-9, 19-25, 26%)					
: Half or whole step, up or down	4	.4762	Moderate	.4583	High
	5	.3810	Difficult	.0417	Low
	6	.4762	Moderate	.4167	High
: Melodic pattern, aural-visual discrimination (music notation)	7	.5714	Moderate	.7083	High
	8	.6667	Moderate	.3750	Moderate
	9	.5741	Moderate	.2500	Moderate
: Melodic pattern, tonal center or no tonal center	19	.3810	Difficult	.0000	Low
	*20	.5714	Moderate	-.1667	Negative
	21	.2857	Difficult	.3333	Moderate
: Arpeggiated and harmonic triads, major or minor	22	.5238	Moderate	.4583	High
	23	.5238	Moderate	.5883	High
	24	.4256	Moderate	.2917	Moderate
	25	.6667	Moderate	.0833	Low
Form (10-18, 18%)					
: Music patterns, ABA, AABA, AABB, or Theme & Variation (form icons)	*10	.4286	Moderate	-.1250	Negative
	11	.2857	Difficult	.2500	Moderate
	*12	.2857	Difficult	.2083	Moderate
	13	.4286	Moderate	.4583	High
	*14	.1905	Difficult	.3750	Moderate
	*15	.1905	Difficult	.1250	Low
	*16	.1905	Difficult	-.0417	Negative
	*17	.2381	Difficult	.0833	Low
	*18	.0952	Difficult	.1250	Low

* Items considered or recommended for revision.

**Items 19-25 are grouped by concept category and are not presented in test order.

Table 29
Grade Five Subtest Two:
Item Analysis by Concept Category, Task, Difficulty and Discrimination

Grade Five Subtest Two: Rhythm, Timbre, and Expressive Qualities					
Category:Task (Percentage, Total Test)	Number	Difficulty Index	Item Difficulty	Discrimination Index	Item Discrimination
<u>Rhythm (26-38, 26%)</u>					
: Rhythmic notation,	26	.6500	Moderate	.6571	High
visual identification,	27	.5263	Moderate	.8571	High
note name and	28	.3684	Difficult	.4286	High
notation of duration	29	.5263	Moderate	.1714	Low
<hr/>					
: Music excerpt,	*30	.4000	Difficult	.1714	Low
duple, triple or	*31	.1000	Difficult	.1429	Low
mixed	*32	.3158	Difficult	.0857	Low
	*33	.2500	Difficult	.0857	Low
<hr/>					
: Eight-beat pattern,	*34	.3000	Difficult	-.1143	Negative
aural-visual	35	.3500	Difficult	.4286	High
discrimination	36	.6667	Moderate	.4571	High
(music notation)	37	.7143	Easy	.8000	High
	38	.5174	Moderate	.5143	High
<hr/>					
<u>Timbre (39-41,6%)</u>					
: Music excerpt, solo	39	1.0000	Easy	.0000	Low
instrument timbre	40	.9524	Easy	.2000	Moderate
(4 choices/item)	*41	.0556	Difficult	.1429	Low
<hr/>					
<u>Expressive Qualities</u>					
(42-50, 18%)					
: Music excerpt, loud,	42	.4762	Moderate	.5417	High
soft, gets louder or	43	.5714	Moderate	.6667	High
gets softer					
<hr/>					
: Music excerpt, fast,	44	.8095	Easy	.6667	High
slow, gets faster or	45	.8571	Easy	.2083	Moderate
gets slower					
<hr/>					
: Music excerpt,	46	.9048	Easy	.3333	Moderate
style label	47	.9524	Easy	.1667	Low
(4 choices/item)	48	.8571	Easy	.2083	Moderate
	49	.9048	Easy	.1667	Low
	*50	.7619	Easy	.5000	High

* Items considered or recommended for revisions.

Nine items were considered for possible revisions in Subtest One. Item 1 required students to indicate whether a music excerpt was melody only, melody and countermelody, melody and harmony, or a round. As in the grade four test, the item should be revised to avoid melody and countermelody in the same set of foils as round. In item 20 students indicated whether an aurally presented melodic pattern had a tonal center or no tonal center. Examination of the item revealed no ambiguities. Items 19 through 21 required the completion of the same task, and only 29% to 57% answered these items correctly. The researcher concluded that the level of experience during music lessons may not provide students sufficient practice to be able to identify individually whether music has no tonal center or has a tonal center. Without further analysis of the experiences within music lessons, no revision, currently, was considered necessary for these items. Items 10, 12, 14, 15, 16, 17, and 18 were in the form category. As in grades three and four, form items should be revised to present aurally the melodic patterns more than once, and to provide music notation of melodic patterns used to create the form items.

Seven items were considered for possible revisions in Subtest Two. Items 30, 31, 32, and 33 required students to indicate whether music excerpts moved in twos, threes, or a combination of twos and threes. No music ambiguities were found across the excerpts. These items, however, should be revised by presenting each excerpt twice or by presenting increased amounts of each excerpt to ensure that students have adequate time to internalize the metric unit and underlying

beat. Item 34 was the first item in a task set which instructed students to match music notation with an aurally presented eight-beat rhythmic pattern. The rhythmic pattern was syncopated with eighth-note and quarter- or half-note combinations which was considered to be a familiar syncopation to students. Because students experienced difficulty with the previous task set (items 30-33), beginning the aural-visual rhythmic discrimination task set with a syncopated rhythmic pattern possibly presented information that was difficult for students to accommodate at that time in the test. The order of the aural-visual rhythmic discrimination task set (items 34-38) should be reordered. The set should begin with a nonsyncopated rhythmic pattern permitting students time to adjust to the new task with less complex music materials. Item 41 was an excerpt of an oboe solo, possibly an unfamiliar instrument to many students. Examination of the item revealed no ambiguities. The researcher concluded that general music lessons frequently do not include experiences with oboe. Currently, no revision to the item was considered necessary. In item 50, students identified the style of a music excerpt aurally presented. The four foils from which students selected in item 50 included Rock, Jazz, Country, and Ragtime. Two high scoring students selected Jazz rather than Ragtime as the style of Scott Joplin's "Maple Leaf Rag." The close historical association of Jazz and Ragtime apparently presented ambiguity for some students. The item should be revised to avoid including Jazz and Ragtime in the same set of foils.

Reliability for Grade Five, estimated by the *Kuder-Richardson, Formula 20*, was not considered acceptable ($r_{KR20} = .34$). The standard error of measurement for grade five was 3.07 points which is over 6% of the total number of items on the NCEMMA, and thus considered to be slightly high (Hopkins, Stanley & Hopkins, 1990). The standard error of measurement and low reliability supported revising the test battery for grade five. A weakness of the grade five Total Test was in the high difficulty level of the form items (items 10-18) and meter discrimination items (items 30-33); these items were 24% of the Total Test. Additionally, the content validity errors reduced the reliability. Revision of items to eliminate ambiguity and to include content valid and developmentally appropriate tasks should increase the test quality of Subtests One and Two, and consequently, increase the validity and reliability of the NCEMMA test battery for grade five.

Effects of Student Characteristics on Test Performance

To determine whether the NCEMMA design, content, and tasks favorably or negatively affected students' test performances grouped by age, gender, race, parents' education and parents' occupation, descriptive statistics were compiled and one-way analyses of variance were used to treat the data. Table 30 includes the means and standard deviations grouped by each student characteristic for the Total Test, Subtest One and Subtest Two. Table 31 includes results of the analyses of variance.

Table 30
Means and Standard Deviations for Total Test, and Subtests One and Two
Grouped by Student Characteristics

Student Characteristics	n	Source					
		<u>Total Test</u>		<u>Subtest One</u>		<u>Subtest Two</u>	
		Mean	s	Mean	s	Mean	s
<u>Birthdate: (Grades 1 and 2)</u>							
Prior to first quarter	5	43.40	4.78	22.00	3.27	21.20	2.28
January to March	8	38.00	5.68	20.38	2.97	17.63	3.02
April to June	8	40.63	5.40	20.50	3.96	20.13	2.30
July to September	11	40.36	3.83	19.73	3.10	20.64	2.46
October to December	7	42.15	6.75	21.71	3.55	20.43	3.31
<u>Gender:</u>							
Female	56	32.41	8.57	14.50	6.01	17.91	3.67
Male	61	32.85	8.54	14.74	5.97	18.12	3.81
<u>Race:</u>							
Minority	9	33.00	9.47	14.00	6.67	19.00	3.43
White	108	32.61	8.48	14.67	5.93	17.94	3.75
<u>Mother's Education:</u>							
College Education	57	33.11	7.45	14.75	5.73	18.35	3.09
4 Years High School	40	32.05	9.33	14.43	6.19	17.63	4.15
Less than 4 Yrs HS	3	34.00	11.14	16.33	5.51	17.67	6.03
<u>Father's Education:</u>							
College Education	55	33.44	7.61	14.80	5.64	18.63	3.33
4 Years High School	40	31.88	9.10	14.48	6.42	17.40	3.66
Less than 4 Yrs HS	4	35.50	5.94	16.25	3.40	18.75	3.30
<u>Parent's Occupation:</u>							
Manager/Profession	58	32.66	8.62	14.48	5.92	18.17	4.03
Sales/Technical	12	29.17	8.64	12.75	6.00	16.42	3.55
Service	12	36.67	7.28	17.00	6.11	19.67	2.50
Operator/Fabricator	1	22.00	0.00	10.00	0.00	12.00	0.00
Other	2	36.00	11.31	16.50	12.02	19.50	.71
Both	15	32.87	6.24	15.13	4.76	17.73	1.95

Table 31
One-way Analyses of Variance for the Total Test, and Subtests One and Two
across Student Characteristics

Student Characteristics by Test	Between/Within df	F ratio	<i>p</i>
<u>Birthdate</u> (Grades 1 and 2): (n = 39)			
Total Test	4/34	.9987	.4217
Subtest One		.6606	.6236
Subtest Two		1.9924	.1179
<u>Gender:</u> (n = 117)			
Total Test	1/115	.0778	.7808
Subtest One		.0460	.8306
Subtest Two		.0868	.7688
<u>Race:</u> (n = 117)			
Total Test	1/115	.0171	.8960
Subtest One		.1059	.7455
Subtest Two		.6760	.4127
<u>Mother's Education:</u> (n = 100)			
Total Test	2/97	.2249	.7990
Subtest One		.1587	.8535
Subtest Two		.4860	.6166
<u>Father's Education:</u> (n = 99)			
Total Test	2/96	.5602	.5730
Subtest One		.1729	.8414
Subtest Two		1.5379	.2201
<u>Parent's Occupation:</u> (n = 100)			
Total Test	5/94	1.4167	.2254
Subtest One		.8247	.5352
Subtest Two		1.6900	.1446

Significant differences between students' test performances by grade have been reported; there was a significant effect of grade on students' NCEMMA test performances ($p < .0001$). The developmental literature included in Chapter II indicated that advances in perception are greatest between the ages of six and nine (e.g., Piaget, 1959). Because developmental research suggested that age influenced perception and cognitive ability, particularly in grades one and two, a one-way analysis of variance was used to examine the effect of age on test performance. Birthdates for students in grades one and two were grouped into five categories based on quarterly divisions of a calendar year: (a) birthdates prior to the first quarter, (b) January to March birthdates, (c) April to June birthdates, (d) July to September birthdates, and (e) October to December birthdates. Group one consisted of the oldest students in grades one and two; group five included the youngest students. There was no significant difference between scores for grade one and grade two students relative to birthdates ($p > .05$, see Table 31). For grades one through five effects of gender and race, and parents' education and occupation also were examined. No significant effects of these student characteristics on test performances were found across the Total Test, and Subtests One and Two ($p > .05$, see Table 31). The researcher concluded that the NCEMMA functioned equally well across all groupings of students by age, gender, race, parents' education, and parents' occupation.

Evaluation of the
North Carolina Measures of Music Achievement

The NCEMMA consisted of a series of achievement tests for grades one through five. The five test batteries were designed as objective measures of end-of-grade achievements as described in the *North Carolina Standard Course of Study* (1989). The overall test quality of the NCEMMA was acceptable for grades one and two. The test quality for grades three and four was conditionally acceptable; revisions of some items would improve the overall test quality for grades three and four. Currently, grade five test quality was not acceptable, and revisions are necessary in content validity and item tasks. The NCEMMA functioned well for first and second grade students which is a benefit for educators who wish to measure primary-aged students' music achievements. With recommended revisions and increased validity and reliability, educators at all grade levels could use the NCEMMA with ease and economy for assessing end-of-grade achievement as mandated by the state's General Assembly (1989) and described in the *North Carolina Standard Course of Study*. Fundamental to increasing students' music abilities, the NCEMMA could be used to measure objectively strengths and weaknesses of students' music learning as related to music instruction.

Raw data and test performances across birthdate, gender, race, parents' education and parents' occupation also were analyzed. The NCEMMA functioned similarly for each group. Ultimately, establishing norms for comparing groups is a

desired outcome of test development. The characteristics of the sample of students in the current study were not representative of the population of North Carolina in gender, race, nor in socioeconomic status as reflected by parents' education and occupation. To provide meaningful norms across each group of students, a revised NCEMMA should be administered to a representative population.

The content of the NCEMMA was established by analyzing the state-adopted textbooks (Holt, Rinehart, and Winston, 1988; Silver Burdett and Ginn, 1988) and the competencies goals and objectives of the *North Carolina Standard Course of Study* (NCSCOS, 1989). Additionally, tasks required in each concept category were determined from the lessons in the music textbooks and the content of the NCSCOS. Item tasks were free from irrelevant or incidental measurements not supported by the state-adopted textbooks and the NCSCOS. Basically, the NCEMMA was content valid; however, it did not exactly match the content percentages of the textbook series across all concept categories. Additionally, upon completion of the analyses of students' test performances and the NCEMMA test qualities, the researcher questioned the developmental validity of some tasks as used in both textbook series. Whether the tasks required in textbook lessons were developmentally appropriate was not in the scope of the study. A summation of NCEMMA test performances and qualities for all grade

levels is presented in Table 32. Overall, the *North Carolina Elementary Measures of Music Achievement*, at its current stage of development, was found to be a valid, reliable, and useable battery of tests for grades one through five.

Table 32
Performance and Quality of Grades One through Five Test Batteries

Total Test (Items 1-50)							
Grade	n	Range	Mean	Median	Standard Deviation	Standard Error of Measure	Reliability KR₂₀
One	22	19	37.05	38.50	5.04	2.63	.7270
Two	25	13	43.08	44.00	3.93	2.12	.7091
Three	24	16	31.00	31.00	4.95	2.91	.6357
Four	25	32	26.88	28.00	7.01	2.80	.8409
Five	21	15	24.33	24.00	3.77	3.07	.3398
Subtest One (Items 1-25)							
One	22	15	18.73	19.00	3.63	1.88	.7318
Two	25	10	21.68	23.00	3.04	1.47	.7653
Three	24	11	13.75	13.50	3.22	2.07	.5864
Four	25	15	8.88	9.00	3.56	2.12	.6456
Five	21	8	9.76	10.00	2.57	2.29	.2037
Subtest Two (Items 26-50)							
One	22	10	18.32	18.50	2.28	1.82	.3615
Two	25	8	21.40	22.00	2.06	1.47	.4895
Three	24	11	17.25	17.50	2.64	2.04	.4026
Four	25	19	18.00	19.00	4.59	1.76	.8525
Five	21	12	14.57	14.00	3.03	1.99	.5649

CHAPTER V

SUMMARY, DISCUSSION, AND RECOMMENDATIONS

Current national emphasis on educational accountability and reform create an urgency for developing tools which provide objective data to evaluate progress in all subject areas. Music educators presently do not have tools to measure student achievement in grades one through three, and few achievement tests are available at the other elementary grade levels. The *North Carolina Standard Course of Study* (NCSCOS) has established informal competency measures by which behaviors in classrooms may be evaluated, but those measures are not designed to provide comparative results or to determine attainment of competency goals and objectives. Achievement tests are important to measure progress toward goals and objectives in music which is defined as a basic subject in North Carolina. The adoption of textbooks by the Textbook Commission of North Carolina is based on the philosophies, goals, and objectives for basic subject areas under consideration. End-of-grade tests that formally and collectively assess music achievement have not been established even though measurement and evaluation of achievement in all classrooms is supported legislatively in North Carolina.

Justification for continuation of music programs, which frequently is a task demanding the attention of music educators, requires objective evidence of learning outcomes. Music learning outcomes can be established with tests

designed to measure music achievement in the mastery of concepts and skills outlined in the NCSCOS and included in state-adopted music textbooks. A well-constructed test of music achievement is an invaluable tool with which to evaluate the progress of students. The development of the *North Carolina Elementary Measures of Music Achievement* (NCEMMA) was in response to the need for a valid, reliable, and useable music achievement test which can be administered to students in grades one through five, and used efficiently by a music specialist or by a classroom teacher.

The purpose of this study was to develop the *North Carolina Elementary Measures of Music Achievement*. The primary objective of this study was to construct a useable, valid and reliable test of music achievement for grades one through five in North Carolina which is sufficiently comprehensive test to measure adequately the concepts included in state-adopted textbooks (Silver Burdett and Ginn *World of Music*, 1988, and Holt, Rinehart, and Winston *Music*, 1988) and in the objectives described in the *North Carolina Standard Course of Study* (1985). The aurally and visually presented NCEMMA consisted of 50 items, divided into two subtests of 25 items to meet time constraints of class schedules.

The development of the NCEMMA required solving several problems including: (a) defining concepts and skills that should be acquired at each grade level; (b) designing a test that could be used by a music specialist or classroom teacher during regularly scheduled music classes and with children who could not read; (c) producing quality test recordings with valid music materials; and, (d)

administering the test to students to analyze test performances and test qualities across the five batteries of tests. Solving these problems and revising the NCEMMA, ultimately, provides a logical and realistic foundation for future development of the test. The generic test form of NCEMMA is summarized in the list below.

1. The content of each concept category across the battery of tests was proportionate to the content of state-adopted textbooks and represented the content of the curriculum guide of the *North Carolina Standard Course of Study*.
2. The total test for grades one through five was 21 to 25 minutes in length and consisted of two subtests.
3. The test, including administrative directions, was presented aurally using cassette tape recordings and was presented visually using test booklets, answer sheets, and enlarged 2' x 3' posters.
4. The response mode for all grade levels was multiple choice with a "do not know" choice to reduce guessing. Reading words or numbers was not a prerequisite for completing the NCEMMA test batteries in grades one and two.

Task requirements were progressively difficult at each grade level, and applied Bruner's (1965) spiral curriculum theory as used in the state-adopted music textbooks. The test content was proportionate to the concepts and tasks presented in the lessons of state-adopted music textbooks and paralleled state competency guidelines (NCSCOS, 1985). During test construction and prior to test administration, content validity of NCEMMA was pursued rigorously, and initially was considered acceptable across the test batteries for grades one through five.

Results of Test Administration and Analysis

Following administration of the NCEMMA, students' raw scores for the Total Test and for each subtest were analyzed using descriptive statistics. Effects of grade, race, gender, parents' education, and parents' occupation on Total Test, and on Subtest One and Subtest Two performance were examined using one-way analyses of variance. The test qualities of each grade level test battery were analyzed for item difficulty and item discrimination, and for reliability using the *Kuder-Richardson, Formula 20*, and standard error of measurement. Additionally, to establish an accurate and precise account of validity relative to content and task difficulty, the extent to which each test battery was content valid was further pursued. To establish consistency of the NCEMMA across the two-day test administration period, differences between means of Subtest One and Subtest Two were compared using *t*-tests. Following data analyses and interpretation of the analyses, recommendations for test revisions were made.

Revisions to test items for grades one, two, three, four, and five test batteries were recommended. Results supported that the difficulty of the test for grade two should be increased. Furthermore, analysis of the test qualities for grades three through five showed that portions of the tests were too difficult. The difficulty level of grades three through five test batteries should be reduced so that test items accurately reflect developmentally appropriate perceptual and cognitive tasks as supported by music research (Colwell, 1970; Zimmerman, 1984). Such revisions would not accommodate suggested tasks found in the music lessons of

the state-adopted textbook series. The researcher concluded, however, that it was essential for future editions of the NCEMMA should reflect and measure students' music development rather than to match exactly the state-adopted textbook series lesson tasks which may not accommodate completely elementary students' music development. Verifying this hypothesis was not in the scope of this study.

To increase the difficulty of grade two test battery, revisions should include increasing the number of foils from two to three and presenting some excerpts longer than seven notes. For grades three through five, revision of some items, for example in the form category, should be limited to matching music notation with aurally presented excerpts and providing two hearings of some music excerpts requiring aural-visual discrimination. Although the NCEMMA was basically content valid, test items which required students to demonstrate an ability to match aurally presented excerpts with theoretical labels, such as ABA, ABACA, or theme and variations, or with icons, seemed inappropriate for the developmental level of students in grades two through five. While Broudy (1958) suggested that the abilities to detect music form was critical to music appreciation, Hartshorn (1958) concluded that discovering form was a matter of recognizing whether melodic and rhythmic information was repeated or changed. He explained that this discovery was not necessarily accomplished by attaching formal descriptions to aurally presented music excerpts. Results of the current study, in part, may be explained by Hartshorn's theory which is fundamental to revising future editions of the NCEMMA appropriately.

Although reliability estimates determined by *Kuder-Richardson, Formula 20* were acceptable for grades one through four, problems in Subtest One for grades three and four were identified. Subtest One of NCEMMA for grade five students also contained problems. Analysis of the total test battery for grade five revealed problems in content validity and item difficulties, which produced a low and unacceptable reliability. Revisions of the content validity and item difficulties across all test batteries should ultimately increase the reliabilities and reduce the standard errors of measurement of the NCEMMA at each grade level.

Ease of administration was an essential characteristic of the NCEMMA. Testing procedures were satisfactory and reception of procedures by students was satisfactory based on comments from the students. The pace of the aural material was appropriate and the response time of five seconds was adequate for students. Answer booklets for grades one and two were satisfactory. Test booklets for grades three through five were also satisfactory, and the use of Scantron forms did not seem to affect students' test performances.

Conclusions

Overall, students' test performances and the quality of NCEMMA was acceptable. Students in grades one and two showed a high level of mastery of test content. With the exception of some portions of NCEMMA, scores in grades three, four, and five also revealed a high level of mastery. Revisions in the design

of items and content validity as identified, should increase the mean percentage of items answered correctly in grades three, four, and five.

A fundamentally important finding of the current study was that first and second grade students' music achievements can be tested successfully in a group setting with the NCEMMA which does not require reading skills. The developmental literature supports that the greatest increase in cognitive skills and learning occurs between ages six and nine (Piaget, 1950). Measuring primary-aged students' music achievements is not only appropriate but also imperative to confirm progress in music learning. Attention to achievement in music learning at such a critical stage of development is necessary to furnish objective information about student progress in each music program to assure that music programs continue to be included in public school curricula.

Results of item analysis provided tentative support for research findings by Colwell (1970), Serafine (1988), Zimmerman (1984), and McDonald and Simons (1989). As tentatively confirmed in the current study, the researchers found that a taxonomy of musical tasks exists; and that discriminating between major and minor, identifying harmonic and polyphonic music structures and, determining the number of same and different sections occurring vertically during the aural presentations of music excerpts are difficult tasks for elementary-aged students. Additionally, analysis of students' NCEMMA test performances, especially in grade three, supported Ramsey's (1983) conclusions that melodic-rhythmic perception

precedes melodic-interval recognition as shown in this study by the difficulty indices of the melodic contour items.

Both Zimmerman (1984) and Colwell (1970) established that discriminating differences in dynamics, timbre, tempo, and pitch are easy perceptual and conceptual tasks. High scores on the NCEMMA in grades one and two support these findings to the extent that the grade two test battery, particularly, needs an increase in difficulty. Recommendations to include items in the test for grade two that measure students' abilities to perform perceptual and conceptual tasks beyond the current difficulty level is warranted. Additionally, recommendation to balance difficult perceptual and conceptual tasks with easy items at all grade levels is supported by previous research (Colwell, 1970; Zimmerman, 1984; Serafine, 1988; McDonald and Simons, 1989). In the current edition of NCEMMA, this balance was not adequately achieved.

Recommendations for Future Research

A critical recommendation for future uses of the NCEMMA is revising items identified as problematic. Levels of revision include accommodating the developmental level of the subjects in task requirements, eliminating ambiguity in the music excerpts, and selecting items representative of an accurate population of items ranging from easy to difficult tasks as recommended. Additionally and foremost, increasing content validity in future revisions of the tests must be pursued as recommended by the current analysis of the test qualities, particularly

for grades one, three, and five. The content validity of grades two and four test batteries closely matched the content of the state-adopted textbooks and objectives of the NCSCOS. Future revisions of the NCEMMA for grades two and four, however, also should accommodate changes in elementary music curricula textbook series occurring as results of time and research.

The NCEMMA was developed with future standardization of the test as the ultimate goal. Although standardization across North Carolina was beyond the scope of the current study, establishing statewide norms is desirable. To standardize the NCEMMA, a test sample which is representative of the population of North Carolina must be selected. At least one hundred students should be selected at each grade level for establishing norms (Glass and Hopkins, 1984). Students should be selected from three geographical regions of the state including Mountain, Piedmont, and Coastal Plain Regions. Mountain counties include counties west of the eastern border of Surry, Wilkes, Caldwell, Burke, and Rutherford. Piedmont counties are east of the mountain counties to the eastern borders of Warren, Franklin, Wake, Chatham, Lee, Moore, and Richmond. Coastal Plain counties are those east of the Piedmont. Additionally, subjects should be divided equally across counties that have adopted Silver Burdett and Ginn (1988) *World of Music* and Holt, Rinehart, and Winston (1988) *Music*. If state-adopted textbooks change, the content of the NCEMMA should be revised from content analyses to represent new textbooks to maintain the integrity of the test's content validity.

Students selected for future standardization of the NCEMMA should be representative of the most recent census taken in North Carolina. The 1990 census (*Vital Statistics of North Carolina, 1990*) shows that a representative sample would include the following distributions: 49% male and 51% female; ethnic background with 76% white, 22% black, and 2% other (i.e., American Indian, Asian/Pacific Islander, and Hispanic). Additionally, 49% of the students should be from a rural setting and 51% from a nonrural setting. Parents' education levels should be 13% with at least four years of college, 56% with at least four years of high school, and 31% with less than four years of high school. Parents' occupation classifications should be represented at 22% managerial/professional, 29% technical/sales, 11% service, 3% farming and forestry, 13% precision production, and 22% operators/fabricators, and laborers.

Although the quality of the test recordings was professional, the use of the textbook series vinyl recordings of musical excerpts was not satisfactory. Distracting white noise was evident in both of the sets of textbook series recordings. Future revisions of the test should use test recordings employing a music synthesist/recording specialist or studio musicians to perform the music excerpts of the test.

Although the use of achievement tests in music education has not been widespread, the availability of such measures is required before they can be used. Boyle and Radocy (1987) warn that evidence of quality assessment must be produced to keep music programs from risk of elimination or retrenchment. The

Music Educators National Conference emphasized the need to identify music learning outcomes and also reiterated the need for developing and disseminating appropriate methods or tests measuring program effectiveness and student learning. The importance of measuring achievement at all grade levels is evident. Because learning occurs rapidly during a student's elementary years of schooling, and because intervention for low-achieving students must happen early in their music education, the fundamental importance of using elementary music achievement tests is reiterated and emphasized. The continued development and use of the *North Carolina Elementary Measures of Music Achievement* provide a means for music educators to advocate the value of music learning, and ultimately, to present valid instruction accommodating elementary students' music learning and development.

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APPENDIX A

CONTENT ANALYSIS OF THE TOTAL AND CORE CURRICULA IN
WORLD OF MUSIC (Silver Burdett and Ginn, 1988)
AND *MUSIC* (Holt, Rinehart, and Winston, 1988)

Content Analysis of the Total and Core Curricula in
World of Music (Silver Burdett and Ginn, 1988)
 and *Music* (Holt, Rinehart, and Winston, 1988)

Textbook Series	Grade Level	Rhythm	Melody	Expressive Qualities	Timbre	Form	Harmony
WOM Total	1	50.86%	32.76%	6.90%	4.31%	5.17%	.00%
WOM Core	1	40.63%	46.88%	3.12%	3.12%	6.25%	.00%
MUSIC Total	1	31.54%	18.01%	27.03%	4.50%	15.32%	3.60%
MUSIC Core	1	30.00%	26.67%	23.33%	3.33%	16.67%	.00%
AVERAGE		38.25%	31.08%	15.10%	3.81%	10.85%	.10%
WOM Total	2	37.61%	26.61%	11.01%	9.17%	11.01%	4.59%
WOM Core	2	41.18%	32.35%	2.94%	5.88%	11.77%	5.88%
MUSIC Total	2	28.56%	22.45%	22.44%	5.10%	13.29%	8.16%
MUSIC Core	2	28.33%	25.00%	20.00%	3.33%	15.00%	8.34%
AVERAGE		33.92%	26.60%	14.10%	5.87%	12.77%	6.74%
WOM Total	3	40.36%	28.45%	2.75%	4.59%	11.00%	12.85%
WOM Core	3	36.11%	27.77%	8.33%	5.56%	11.11%	11.12%
MUSIC Total	3	23.91%	17.39%	28.26%	3.26%	16.30%	10.88%
MUSIC Core	3	23.33%	20.00%	28.34%	1.66%	15.00%	11.67%
AVERAGE		30.93%	23.40%	16.92%	3.77%	13.35%	11.63%
WOM Total	4	35.34%	19.83%	6.03%	12.07%	8.62%	18.11%
WOM Core	4	31.35%	11.76%	6.88%	23.53%	8.82%	17.66%
MUSIC Total	4	11.20%	18.40%	32.80%	4.00%	16.89%	16.71%
MUSIC Core	4	16.60%	25.00%	23.20%	6.00%	20.72%	8.39%
AVERAGE		23.62%	18.74%	17.25%	11.40%	13.77%	15.22%
WOM Total	5	33.33%	19.29%	7.89%	7.03%	7.02%	25.44%
WOM Core	5	30.55%	22.23%	16.66%	5.56%	8.33%	16.67%
MUSIC Total	5	16.92%	14.24%	26.40%	3.68%	16.36%	22.40%
MUSIC Core	5	26.63%	15.84%	19.98%	5.50%	18.73%	13.32%
AVERAGE		26.86%	17.90%	17.73%	05.44%	12.61%	19.45%

APPENDIX B

UNIVERSITY HUMAN SUBJECTS RESEARCH APPROVAL
AND GUILFORD COUNTY SCHOOL SYSTEM APPROVAL

934083

THE UNIVERSITY OF NORTH CAROLINA AT GREENSBORO

Instructions for Completing the Application for the Use of Human Subjects in Research

All research with human subjects conducted by students, faculty, or staff at UNCG, whether or not requests for outside funding are involved, must be reviewed initially by a member of the University's Institutional Review Board. To initiate this review, the investigator/project director must complete and submit the attached application and forward it to the IRB member in his/her college/school/department. If the research does not qualify for exempt status, the IRB member will determine if an expedited or full committee review is appropriate. The application is then forwarded to the Office of Research Services with the IRB Member's recommendation. The University IRB meets if a full review is necessary. You will be informed by the IRB regarding the disposition of your application.

Please submit your human subjects application as early as possible. Data cannot be collected prior to receiving an approval form from the IRB.

Any changes in research protocol that affect human subjects must be approved by the IRB prior to their implementation unless these changes are necessary to eliminate apparent immediate hazards to the subject. Any unanticipated problems involving risks to subjects or others must be promptly reported to the IRB.

COMPLETE PART A ONLY; PAGES 3, 4 AND 5; AND THE APPROPRIATE CONSENT FORM INFORMATION. BE SURE TO SIGN THIS APPLICATION ON PAGE 5.

Part A

Date: 11 / 22 / 93

Project Title: The Development and Validation of the Elementary Measures of Music Achievement for Grades One through Five

Principal Investigator(s): Mary Ann Warren

Phone No. 704-252-5783

Address of Principal Investigator 79 North Griffing Blvd., Asheville, NC 28804

Relationship to the University: Faculty ___ Student Other ___ (Specify)

If student, name of faculty sponsor: Patricia E. Sink

School/College: Music Department: Music Education Division

Funding Agency/Sponsor(if applicable): NA

Project Dates: From 11 / 29 / 93 To 12 / 10 / 93 (in schools)

New Application Renewal of Previously Approved Application

Attach additional sheets if necessary but DO NOT ATTACH THE ENTIRE PROPOSAL.

1. BRIEF STATEMENT OF PROJECT GOALS:

The purpose of this study will be to develop and validate the North Carolina Elementary Measures of Music Achievement which will be designed to be used across two state-adopted basal textbook music series for grades one through five and the North Carolina Standard Course of Study (NCSCS). The entire test will include five tests at each grade level with two subtests at each grade level. Concepts to be tested, common to both the state adopted textbooks and the NCSCS, will include rhythm, melody, form, timbre, expressive qualities, and harmony. End-of-grade testing in all required public school subjects was encouraged by the 1989 North Carolina General Assembly. The current study will be developmental and will serve as an assessment of the quality of the North Carolina Elementary Measures of Music Achievement. Results of the study, however, will provide the basis for developing and validating end-of-grade music tests for grades one through five in the state of North Carolina.

2. PROTOCOL:

- Procedures
- Name and description of data gathering tool (if not well known, attach a copy)
- Number of subjects
- From where will subjects be obtained?
- How long will procedures take?
- Any special situations (Example: Deception - Full disclosure prior to procedure is not feasible because biased data will result.)
- If data collection is done in class, explain what students who do not participate will be doing.
- Attach letter or form of approval from any agencies that will be involved with data collection.

The procedures for developing and validating the North Carolina Elementary Measures of Music Achievement were approved by the researcher's Dissertation Committee in October 1993, and the complete dissertation proposal including the tests and test scripts for grades one and two are on file in the Graduate Office of the University of North Carolina at Greensboro School of Music. Membership of the researcher's Dissertation Committee consist of the following faculty members: (1) Dr. Patricia Sink, Dissertation Advisor and Associate Professor of Music; (2) Mrs. Barbara Bair, Professor Emeritus and former Chair of Music Education and Director of Teacher Education; (3) Dr. Michelle Irwin, Professor of Pedagogical Studies in the School of Education (Teacher's Academy); (4) Dr. Randy Kohlenberg, Chair of Music Education and Associate Professor of Music; (5) James Sherbon, Director of Graduate Studies and Professor of Music.

Procedures for developing and validating the battery of music achievement tests will include:

1. Establish content of the test by analyzing the content of the two state-adopted basal textbook music series (Music, Holt, Rinehart and Winston, 1988; and World of Music, Silver Burdett and Ginn, 1988) and the North Carolina Standard Course of Study (1986) in music (completed, Fall 1992-Spring 1993).
2. Establish appropriate response modes for grades one through five by analyzing research on human development and expected music behaviors of human beings between the ages of six and eleven years of age (completed, Spring-Summer 1993).

Proposed Procedures (continued)

3. Develop test items based on the content analysis of the two state-adopted basal textbook music series and the North Carolina Standard Course of Study (completed, Summer-Fall 1993).
4. Design appropriate test answer sheets and test scripts by analyzing previously developed and standardized music achievement and aptitude tests and by analyzing research on measurement and evaluation of music behaviors (completed, Summer-Fall 1993).
5. Complete an audio recording and develop visual aids for administering the test items and script to grades one through five. The audio recording was completed in a recording studio by a audio recording professional to assure highest quality aural presentation of the test and to eliminate any contamination of test results due to audio recording qualities (completed, Fall 1993).
6. Administer test to approximately 150 students in grades one through five in a school in the Piedmont Region of North Carolina which approximates a normal distribution of North Carolina's population of students in grades one through five, and provides high quality elementary music instruction by a music specialist (projected date of completion, December 6-10, 1993).
7. Analyze data to determine the test qualities including analysis of content validity, reliability, item difficulty, and item discrimination (projected date of completion, January 1994).
8. Analyze data to establish tentative norms for grades one through five which will serve as baseline norms for continued development of end-of-grade music tests for grades one through five in North Carolina Public Schools following completion of the current study. Norms will be established across gender, age, race, socioeconomic background, and parental educational level. The sample for the current study will be assessed to determine to what extent it is representative of the population of students in grades one through five in North Carolina. During the Summer of 1993 to determine the distribution of the population of North Carolina across the aforementioned variables, the researcher analyzed the 1990 census for the state (Vital Statistics of North Carolina, 1990; U.S. Bureau of the Census, 1990) (projected date of completion, January 1994).
9. Complete a trend analysis of music achievement by analyzing the relationships among music achievement test scores, gender, age, race, socioeconomic background, and parental educational levels (projected date of completion, January-February 1994).
10. Recommend revisions of the North Carolina Elementary Measures of Music Achievement which thereby may serve as a foundation in the development and validation of end-of-grade tests in music for grades one through five in the Public Schools of North Carolina (projected date of completion, March 1994).

The prospective school system which will provide the sample for the current study will be the Guilford County School System. As of November 1993, permission to complete the testing in one of the Guilford County Elementary Schools was obtained verbally from the respective school's Music Teacher and Principal. To proceed with the study, the research is awaiting official authorization from the Department of Assessment and Evaluation of the County and from the UNCG School of Music Institutional Research Board Representative. For students to

complete the test, parental permission will be acquired and filed with the Guilford County Department of Assessment and Evaluation. Confidentiality of students and the school will be protected throughout the study and in any future research reports evolving from the study. The students and school participating in the current study will be at no risk throughout the study and during the final disposition of the results; standard educational practices will be used in the current study which have been approved and used since the inception of federal regulations protecting human subjects participating in research. If a parent does not permit his or her child to complete the North Carolina Elementary Measures of Music Achievement or at any time wishes to withdraw from the study, the parent may of course do so without penalty. Completion of the test by a student is completely voluntary. Because the test will be administered during regular class times during the school day, students who do not participate in the study will be provided individualized/small group music instruction during the testing sessions. Completion of test administration will require two class periods. The focus of the current study is upon test development and validation; therefore, the final report of results will be focused upon test quality rather than on student behavior and quality of the school music program in which the study will be conducted.

3. **BENEFITS:** Describe the benefits to the individual and/or mankind.

In 1989, the North Carolina General Assembly encouraged the development of state-wide end-of-grade tests across all required subjects, including music. The current study will provide a valid end-of-grade music test for grades one through five. Results will serve as a baseline which will help to develop and validate statewide end-of-grade tests. Currently a music achievement test does not exist at the national nor state levels to measure the music achievements of students in grades one through five based upon the content of the two state-adopted and nationally used basal textbook music series which were used to develop the North Carolina Elementary Measures of Music Achievement. Also the school and students participating in the development and validation of the test will be provided results of the test which ultimately will assist in making educational decisions relating to maintaining a high quality music instructional program.

4. **RISKS:**

- Describe the risks to the subject and precautions that will be taken to minimize them. This includes physical, psychological, and/or sociological risks.
- How will confidentiality of data be maintained?
- Final disposition of data (What will be done with questionnaires, inventories, videotapes, and/or audiotapes.) _____

For students to complete the test, parental permission will be acquired and filed with the Guilford County Department of Assessment and Evaluation. Confidentiality of students and the school will be protected throughout the study and in any future research reports evolving from the study. The students and school participating in the current study will be at no risk throughout the study and during the final disposition of the results; **standard educational practices** will be used in the current study which have been approved and used since the inception of federal regulations protecting human subjects participating in research. If a parent does not permit his or her child to complete the North Carolina Elementary Measures of Music Achievement or at any time wishes to withdraw from the study, the parent may of course do so without penalty. Completion of the test by a student is completely voluntary. The focus of the current study is based upon test development and validation; therefore, the final report of results will be focused upon test quality rather than on student behavior and quality of the school music program in which the study will be conducted.

How would you describe the level of risk for subjects participating in this project?

No risks

Minimal risks

More than minimal risks

5. CONSENT FORMS:

Regular Form: The regular form should be used when research procedures are complicated or when the researcher will have no direct contact with the person who signs the form. Information should be included in the spaces provided on the form. N/A should be inserted for sections not applicable to a specific study. **THE FORM MAY BE REVISED BUT MUST INCLUDE ALL ASPECTS OF INFORMED CONSENT** (see list below).

Short Form and Oral Presentation: A short form and oral presentation are appropriate when procedures are rather simple and when the researcher will have direct contact with the person who signs the form. The oral presentation must include the following:

1. Explanation of research purpose and procedures
2. Benefits
3. Risks
4. The opportunity to withdraw without penalty
5. The opportunity to ask questions
6. The amount of time required of the subjects
7. Confidentiality of data and final disposition of data

The oral presentation does not require the subjects' signatures but must include the date on which it was read to subjects. If an oral presentation is planned, include the content of the presentation on the form.

A letter containing all aspects of informed consent may be used for data collected via mail. Subjects need not sign a consent form since returning of the questionnaire is implied consent.

Please attach only the forms that you plan to use. For special situations in obtaining consent, please see your IRB representative or call the Office of Research Services.

SEE ATTACHED LETTER TO PARENTS AND PARENTAL CONSENT FORM

 I certify that the statements made herein are accurate and complete. I agree to inform the Board in writing of any emergent problems or proposed procedural changes. Should changes be made, I further agree not to proceed with the research until the Board has reviewed and approved the changes that I propose to make in the protocol.

Signed: Maylene Warren
 Principal Investigator

Date: November 22, 1993

934083

UNIVERSITY OF NORTH CAROLINA AT GREENSHORO

Institutional Review Board
Notification Form

DATE: November 23, 1993

PROJECT TITLE: The Development & Validation of the
Elementary Measure of Music Achievement for Grades
One Through Five

PRINCIPAL INVESTIGATOR: Mary Ann Johnson (Principal)

SCHOOL/COLLEGE: Music DEPARTMENT: Music

ACTION TAKEN:

- Exempt
- Expedited Review
- Full IRB Review

DISPOSITION OF APPLICATION:

- Approved
- Disapproved

MODIFICATIONS AND COMMENTS:

Severly S. Maddox - Quitt
 IRB Chair/Designee

Approval of research is valid for one year. If your research goes beyond one year, the project must be reviewed prior to continuation.

Guilford County Schools
120 Franklin Boulevard
Greensboro, NC 27401

December 3, 1993

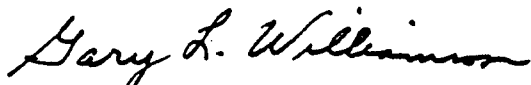
Mary Ann Warren
79 N. Griffing Blvd.
Asheville, NC 28804

Dear Ms. Warren:

Your research proposal, "The Development, Validation, and Standardization of the North Carolina Elementary Measures of Music Achievement" has been reviewed by a panel of researchers, measurement specialists and administrators from Accountability and Curriculum Services, for the Guilford County Schools. The panel approved your proposal. Therefore you may proceed to contact the principals, if needed, to plan for the implementation of your research project. Of course, approval by the review panel does not guarantee the participation of principals, who have the final authority for activities conducted in their schools. Please present this letter, when requesting cooperation or assistance from school system employees.

Good luck in your work. If I may be of further assistance, please feel free to call.

Sincerely,



Gary L. Williamson, Ph.D.
Program Specialist--Planning/Research

79 North Griffing Boulevard
Asheville, NC 28804
November 23, 1993

Mr. Gary Williamson
Department of Assessment and Evaluation
Guilford County Schools
120 Franklin Boulevard
Greensboro, NC 27401

Dear Mr. Williamson:

Thank you very much for spending time with me yesterday and for your encouragement in my study. I met with my advisor, Dr. Sink, after our meeting yesterday. Dr. Sink has sent the UNC-G form from the Institutional Review Board indicating that my study is approved for research providing no risk to human subjects. That document is included with five copies of the research proposal summary form and five copies of Chapters I and III of my dissertation proposal as you requested.

Space on the form did not permit information about my dissertation committee, which I am fortunate to have to assist in my study. Committee members are Dr. Sink, Associate Professor of Music Education, Ph.D., University of Kansas; Dr. James Sherbon, Associate Dean and Director of Graduate Studies, Ph.D., University of Kansas; Dr. Randy Kohlenberg, Associate Professor and Chairman of the Division of Music Education, Ph.D., University of Oklahoma; Dr. Michelle Erwin, Professor of Pedagogical Studies of the School of Education and Teachers Academy, Ph.D., University of Minnesota; Ms. Barbara Bair, Professor Emeritus of the School of Music and Director of the Office of Teacher Education and Chairman of the Music Education Division from 1970-1991, M.M.Ed., University of North Carolina at Greensboro.

I was so pleased that you shared with me your good news about your CD. I am a bluegrass fancier; so I will look for it in the stores. I hope your Thanksgiving will be enjoyable. I always love the chance to cook on a grand scale, as well as the company of the four children and their spouses.

Thank you again for your time and expertise. I hope to hear from you very soon.

Sincerely yours,



Mary Ann Warren

APPENDIX C
PARENT CONSENT LETTER AND PERMISSION FORM

Mary Ann Warren
%Dr. Patricia E. Sink
School of Music
University of North Carolina at Greensboro
Greensboro, North Carolina 27412

November 29, 1993


Dear Parent:

I am a doctoral student in the School of Music at the University of North Carolina at Greensboro. As part of my work for the Ph.D. Degree in Music Education, I have created an end-of-grade music achievement test based on the content of the two state-adopted music textbooks and the North Carolina Standard Course of Study. Your child's school has been selected to participate in the development and validation of the North Carolina Elementary Measures of Music Achievement. The Principal and Music Teacher at your school and the Department of Assessment and Evaluation of the Guilford County School System have provided permission for the test to be administered at your school. For your child to complete the music achievement test, your permission is requested and required.

The test your child will complete consists of two subtests with 25 questions each. Each subtest will ask questions relating to concepts the music teacher and students have been studying. The test will be given during your child's regular, thirty-minute music class and take two class meetings to administer. Results of the test will be confidential and will be used only to study to strengths and weaknesses of the test. Results will not be used to officially assess your child's achievements in music. However if you would like to receive your child's test results, I will be more than happy to provide them to you. The test results also will be examined across gender, age, race, socioeconomic background and parental educational level to assist in developing a state-wide end-of-grade test in music. Upon completion of the testing, an official report will be filed with the Department of Assessment and Evaluation of the Guilford County Schools.

Everyone participating in the study agree that this is a "grounds breaking" project in music testing in the state of North Carolina. Because of the quality of your child's school and music program, I am grateful that your school officials have agreed to participate in the study which ultimately will benefit not only your child and school but other children and schools in North Carolina. If you will permit your child to participate in this study, please complete the attached parental permission form and provide the requested information. Also indicate if you would like to receive results of the study. If at any time you would like to withdraw your child from the study, you may with no consequences to you, your child or your school. If you have any questions, please feel free to call me or Patricia Sink, my research advisor from the University. The telephone number is 334-5469. Thank you for your assistance and consideration.

Sincerely yours,



Mary Ann Warren

APPENDIX D

TEST TRANSCRIPTS, TEST BOOKLETS, AND ANSWER KEYS
GRADE ONE

TEST TRANSCRIPT: GRADE ONE, SUBTEST ONE

MELODY, FORM, TIMBRE

You are getting ready to take a music test. Put your name on the first line. (PAUSE FOR 20 SECONDS). Write how old you are on the next line, beside the word age-A-G-E. (PAUSE FOR 20 SECONDS). Write today's date on the next line. Your teacher has written the date for you to copy. (ADMINISTRATOR HOLDS UP SHEET WITH DATE WRITTEN ON IT OR HAS DATE WRITTEN ON THE BOARD. PAUSE FOR 20 SECONDS). On the next line, write your birthdate, if you know it. If you do not know your birthdate, put an X on the line. (PAUSE FOR 20 SECONDS).

Next, find the picture of the apple and bookworm. In the boxes beside the apple, you find a box with balloons in it, a box with a light bulb in it, and a box with a clock in it. Draw a circle around the box with the balloons in it. (PAUSE FOR 5 SECONDS). Your answer should look like this. (POINT TO CIRCLED BALLOONS ON POSTER). To answer a question you draw a circle around the box that holds the correct answer.

Let's do a practice question. Put your finger on the box that has a ball and jacks in it. (PAUSE FOR 3 SECONDS). Next to the ball and jacks are three boxes: one has an arrow that goes up, like this. (POINT TO APPROPRIATE ARROW ON POSTER). One has an arrow that goes down, like this. (POINT TO

APPROPRIATE ARROW ON POSTER). One box has a question mark in it,, like this. (POINT TO BOX WITH QUESTION MARK ON POSTER). When you do not know an answer, circle the box with the question mark in it. Listen to this melody and decide if the melody goes up, like this,



or if the melody goes down, like this.



Get ready and let's answer the ball and jacks question. Listen to a melody.

Decide if it goes up or down.



Now, circle your answer. (PAUSE FOR 5 SECONDS). Your answer should look like this. (POINT TO CORRECTLY CIRCLED ANSWER ON POSTER).

Please open your test booklet.

Get ready to answer the crayon question. Listen to a melody and decide if it goes up or down.



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Get ready to answer the man-on-the-horse question. Listen to a melody and decide if it goes up or down.



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Find the picture of the bookworm. In one of the boxes beside the bookworm, the arrow stays the same, like this. (POINT TO APPROPRIATE ARROW ON POSTER). In one of the boxes the arrow goes up, like this. (POINT TO APPROPRIATE ARROW ON POSTER). One box has a question mark in it to show that you do not know the answer. (POINT TO THE BOX WITH THE QUESTION MARK IN IT ON POSTER). Sometimes the melody that we hear stays on the same sound, like this.



Sometimes the melody that we hear goes up, like this.



Get ready to answer the bookworm question. Listen to the melody and decide if it stays on the same sound or if it goes up.



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Get ready to answer the backpack question. Listen to a melody. Decide if it goes up or if it stays on the same sound.



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Find the picture of the frowny face. In one box beside the frowny face there is an arrow that goes down. In the next box there is an arrow that stays the same. Sometimes a melody goes down. Sometimes a melody stays on the same

sound. Get ready for the frowny face question. Listen to a melody and decide if it goes down or if it stays on the same sound.



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Find the picture of the barrel-of-monkeys. Get ready for the barrel-of-monkeys question. Listen to a melody and decide if it goes down or if it stays on the same sound.



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Please turn the page.

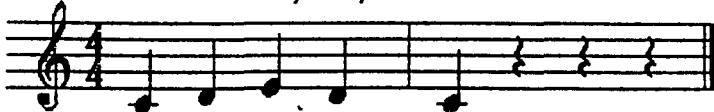
Find the picture of the light bulb. In one box beside the light bulb are up and down arrows. In the next box is an arrow that goes across. Sometimes a melody goes up and down, like this.



Sometimes a melody stays on the same sound, like this.



Get ready to answer the light bulb question. Listen to a melody and decide if it goes up and down or if the melody stays on the same sound.

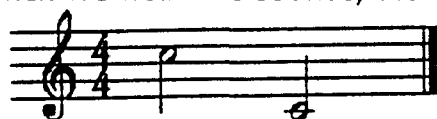


Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready to answer the butterfly question. Listen to the music and decide if the melody goes up and down or if the melody stays on the same sound.



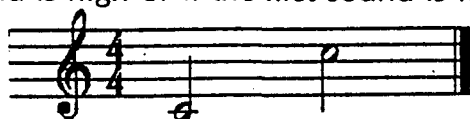
Find the picture of the clock. In the boxes beside the clock are two dots. In the first box, the first dot is high and the second dot is low, like this. (POINT TO THE APPROPRIATE DOTS ON POSTER). In the next box, the first dot is low and the second dot is high, like this. (POINT TO THE APPROPRIATE DOTS ON POSTER). Sometimes when we hear two sounds, the first sound is high, like this:



Sometimes the first sound is low, like this.



Get ready to answer the clock question. Listen to two musical sounds and decide if the first sound is high or if the first sound is low.



Circle your answer now. (PAUSE FOR 5 SECONDS).

Find the picture of the telephone. Get ready to answer the telephone question. Listen to two sounds. Decide if you hear a high sound first or a low sound first.



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Find the picture of the balloons. Get ready to answer the balloons question. Listen to two musical sounds and decide if you hear a high sound or a low sound first.



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Get ready to answer the sliding board question. Listen to two sounds and decide if you hear a high sound or a low sound first.



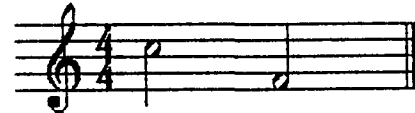
Now, circle your answer. (PAUSE FOR 5 SECONDS).

Get ready to answer the bicycle question. Listen to two sounds and decide if you hear a high sound or a low sound first.



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Get ready to answer the airplane question. Listen to two sounds and decide if you hear a high sound or a low sound first.



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Each instrument has its own special sound. In the next three questions you will decide which instrument you hear. Find the picture of the pencil. In one box next to the pencil there is a picture of a trumpet. In the next box there is a picture of a drum: Get ready to answer the pencil question. Listen to the music and decide if you hear a trumpet or a drum. (MUSIC PLAYS: "What Do You Hear?" Silver Burdett and Ginn *World of Music* (1988), Grade Three, Record 6, Side A, Band 4[5]). Now, circle your answer. (PAUSE FOR 5 SECONDS).

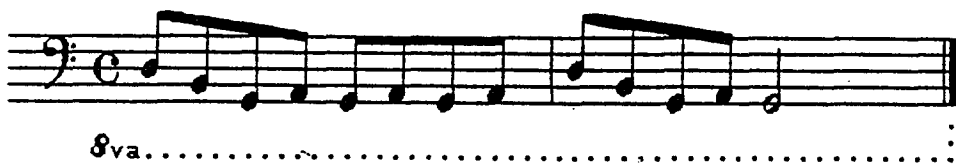
Get ready to answer the arrow question. Listen to this music and decide if you hear a clarinet or a piano. (MUSIC PLAYS: "What Do You Hear?" in Silver Burdett and Ginn, *World of Music*, 1988, Grade Three, Record 6, Side A, Band 4[6]). Now, circle your answer. (PAUSE FOR 5 SECONDS).

Get ready to answer the trophy question. Listen to some music and decide if you hear voices singing or a piano. (MUSIC PLAYS; "Swing Low, Sweet Chariot," *World of Music*, Silver Burdett and Ginn, 1988, Grade Four, Record 2, Side, A, Band 5). Now, circle your answer. (PAUSE FOR 5 SECONDS).

Sometimes the music sounds that we hear are mostly high. Sometimes they are mostly low. These sounds are mostly high.



These sounds are mostly low.



Find the picture of the star. In one box next to the star there is an arrow that points up for mostly high sounds. In the next box there is an arrow that points down for mostly low sounds. Get ready to answer the star question. Listen to the music and decide if the sounds that you hear are mostly high sounds or if they are mostly low sounds. (MUSIC PLAYS: excerpt from Maurice Ravel, "Beauty and

the Beast," *World of Music*, Silver Burdett and Ginn, 1988, Grade Three, Record 2, Side A, Band 8). Now, circle your answer. (PAUSE FOR 5 SECONDS).

Please turn the page.

Get ready to answer the school bus question. Listen to this music and decide if the sounds that you hear are mostly high sounds or if they are mostly low sounds. (MUSIC PLAYS: excerpt from "Malo Flute," Music, Holt, Rinehart, and Winston, 1988, Grade Two, Record 1, Side A, Band 3). Now, circle your answer. (PAUSE FOR 5 SECONDS).

Find the picture of the see-saw. In one box beside the see-saw there is a circle and a rectangle, shapes that are different from each other. (POINT TO APPROPRIATE SHAPES ON POSTER). In the next box there are two circles, shapes that are alike. (POINT TO APPROPRIATE SHAPES ON POSTER). This box has a question mark in it to show that you do not know the answer. (POINT TO APPROPRIATE BOX WITH QUESTION MARK). Sometimes the melody patterns we hear are different from each other, just like a circle and rectangle are different from each other. Listen to two patterns that are different from each other.



Sometimes the melody patterns we hear are the same, just like two circles are the same. Listen to two patterns that are the same.



Get ready to answer the see-saw question. Listen to two melody patterns and decide if they are different or if they are the same.



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Get ready to answer the desk question. Listen to two melody patterns and decide if they are different from each other or if they are the same.



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Get ready to answer the smiley face question. Listen to two melody patterns and decide if they are different or the same.



Pattern 2:



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Get ready for the swing set question. Listen to two melody patterns and decide if they are different or the same.

Pattern 1:



Pattern 2:



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Get ready to answer the owl question. Listen to two melody patterns and decide if they are different or the same.

Pattern 1:



Pattern 2:



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Go to the top of the next page. (PAUSE FOR 3 SECONDS).

Get ready to answer the pencil sharpener question. Listen to two melody patterns and decide if they are different or the same.

Pattern 1:



Pattern 2:



Circle your answer now. (PAUSE FOR 5 SECONDS).

This is the end of the test. Please close your test booklets. (PAUSE 5 SECONDS). Stay in your seat until all test booklets have been collected.

(TIME: 23 minutes, 25 seconds)

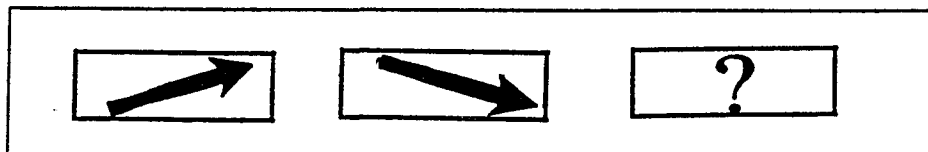
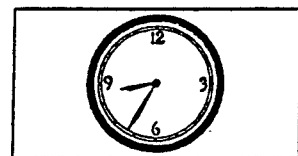
ANSWER KEY

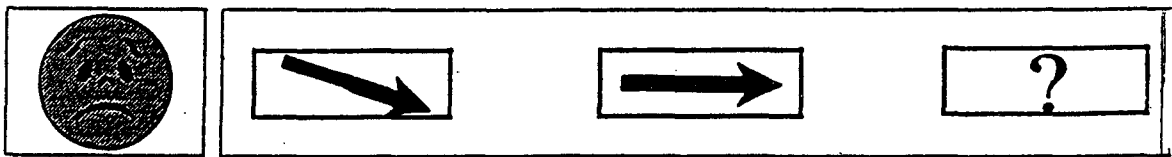
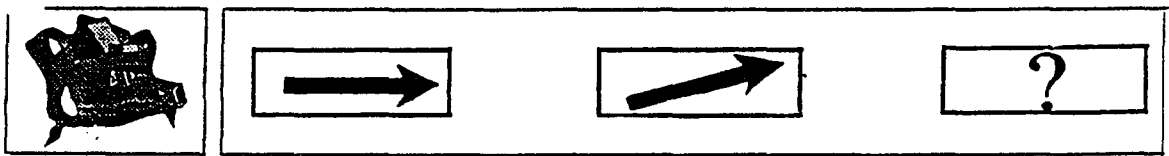
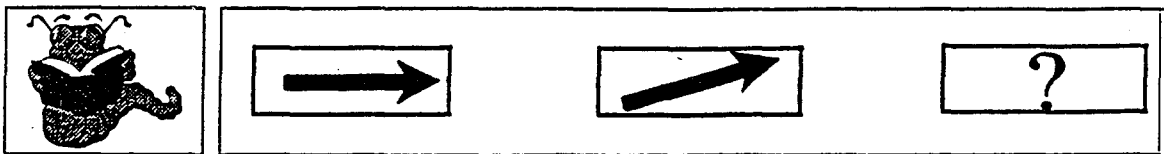
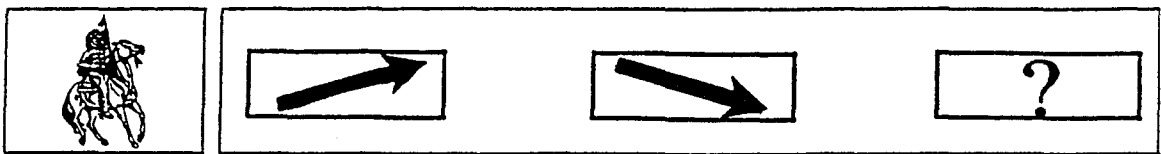
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|------|-------|-------|-------|-------|
| 1. B | 6. B | 11. B | 16. A | 21. B |
| 2. A | 7. A | 12. B | 17. A | 22. B |
| 3. B | 8. A | 13. A | 18. B | 23. B |
| 4. A | 9. A | 14. A | 19. A | 24. A |
| 5. A | 10. B | 15. A | 20. A | 25. B |

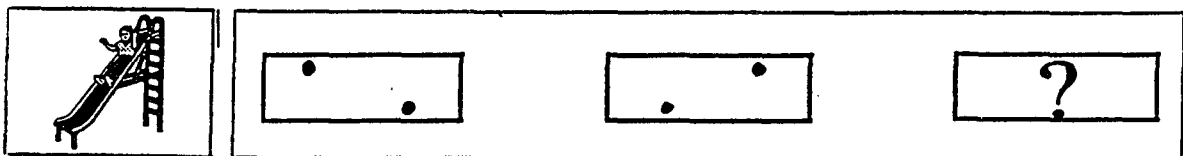
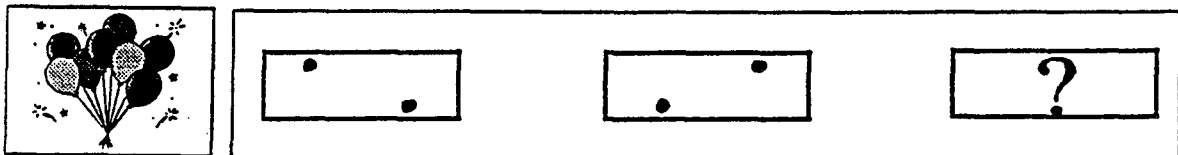
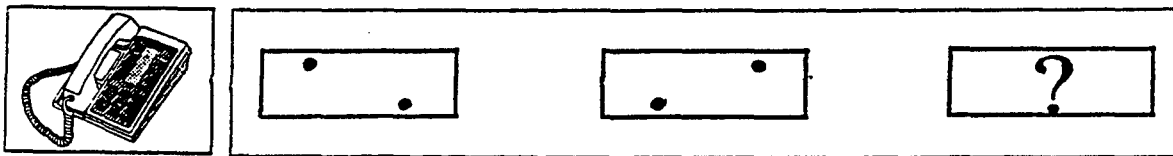
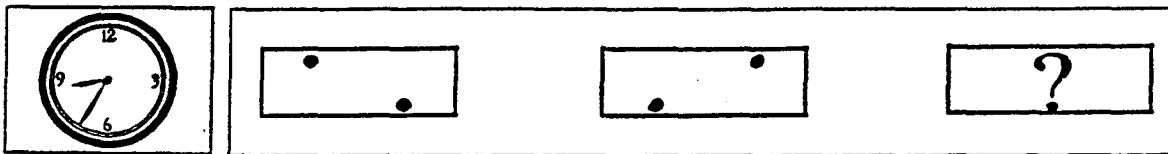
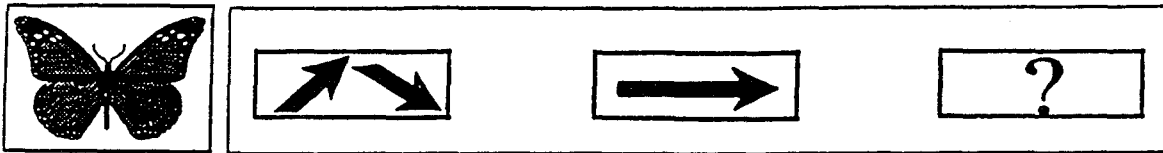
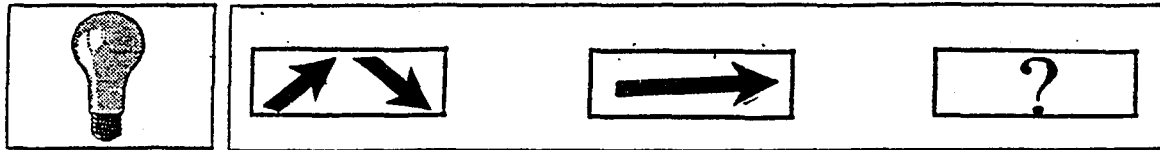
Test Booklet
Grade One
Melody, Timbre, Form

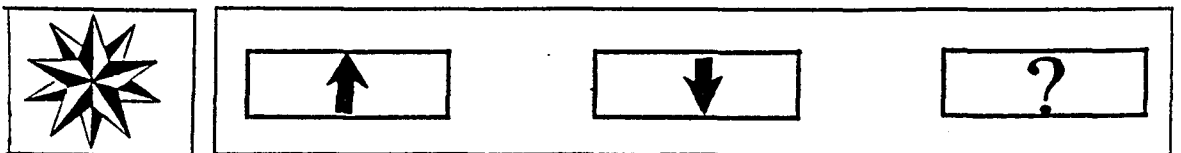
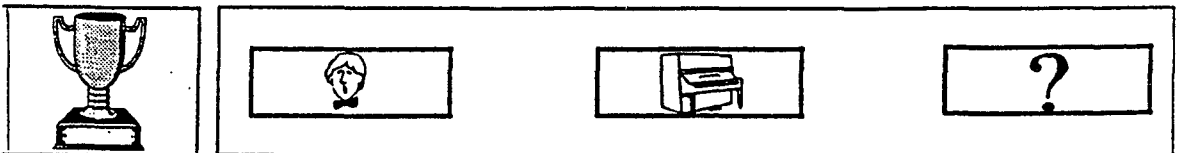
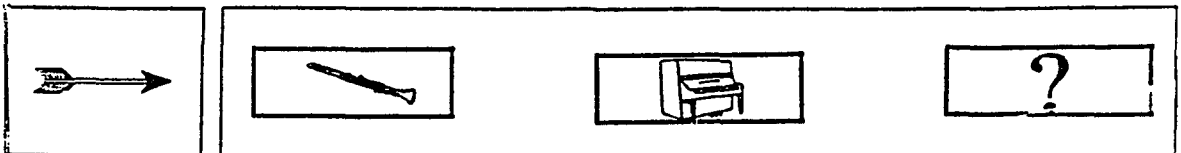
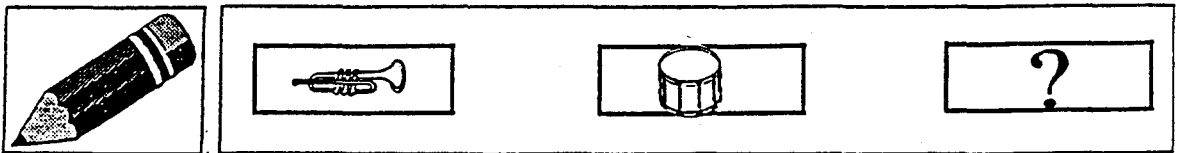
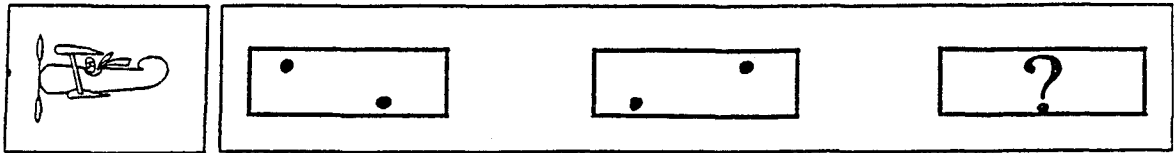
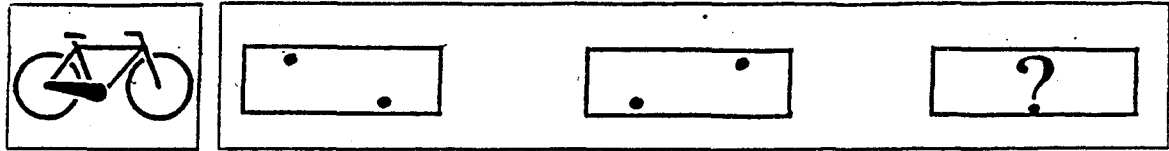
Name: _____ Age: _____

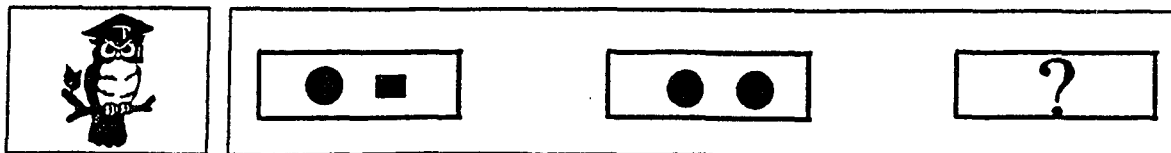
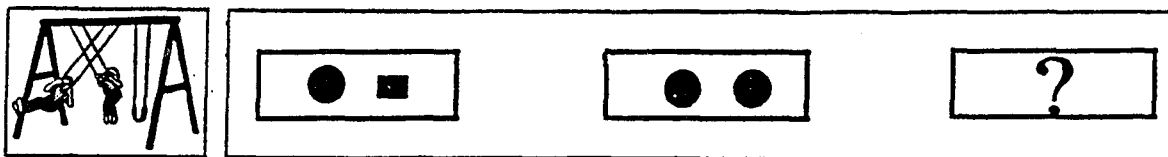
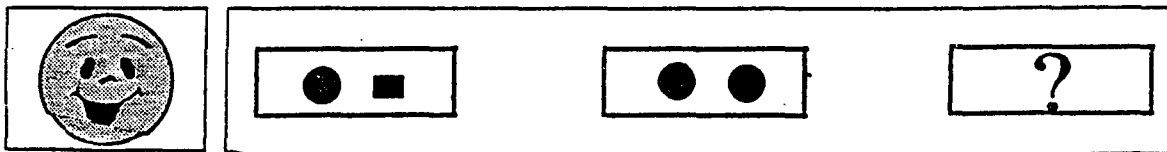
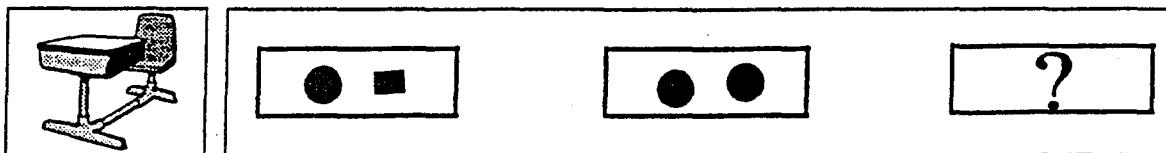
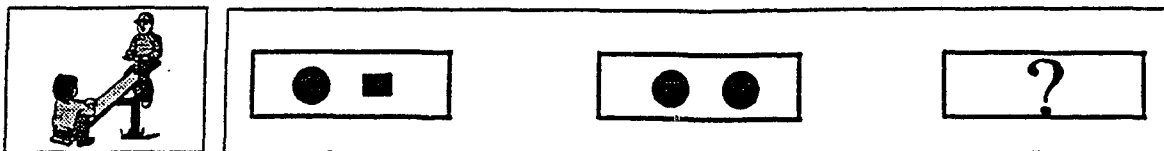
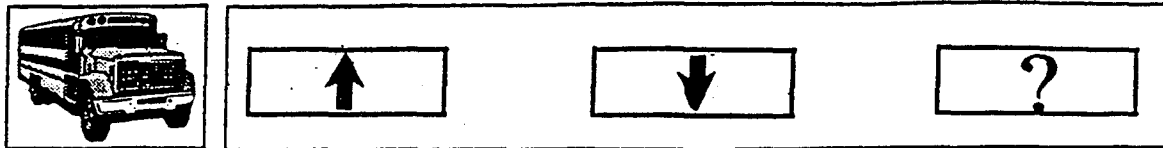
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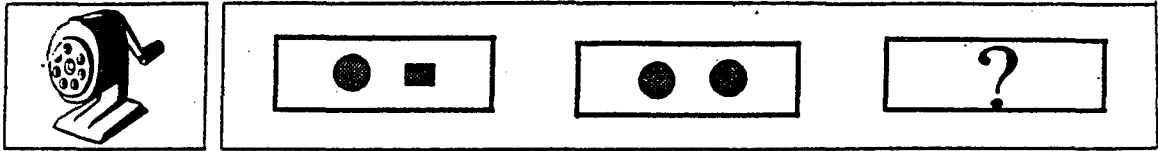












TEST TRANSCRIPT: GRADE ONE, SUBTEST TWO
RHYTHM AND EXPRESSIVE QUALITIES

You are getting ready to take a music test. Put your name on the first line. (PAUSE FOR 20 SECONDS). Write how old you are on the next line, beside the word age—A-G-E. (PAUSE FOR 20 SECONDS). Write today's date on the next line. Your teacher has written the date for you to copy. (TEACHER POINTS TO POSTER WITH DATE WRITTEN ON IT OR HAS DATE WRITTEN ON THE BOARD. PAUSE FOR 20 SECONDS).

Next, find the picture of the apple with the bookworm. In the boxes beside the apple, you find a box with balloons in it, a box with a light bulb in it, and a box with a clock in it. Draw a circle around the box with the balloons in it. (PAUSE 5 SECONDS). Your answer should look like this. (POINT TO CIRCLED BOX WITH BALLOONS ON POSTER WITH FINGER). To answer a question, you must draw a circle around the box that holds the correct answer. Let's do a practice question. Put your finger on the box that has a ball and jacks in it. (PAUSE FOR 5 SECONDS). Next to the ball and jacks are three boxes: one has four marks in it; one has no marks in it; one has a question mark in it. Listen to this music and decide if the music has a beat or if the music has no beat. (MUSIC PLAYS: excerpt from *Sinfonia* by Luciano Berio, World of Music, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side A, Band 7). Draw a circle around the box with marks in it if the music had a beat. Draw a

circle around the box with nothing in it if the music did not have a beat. If you are not sure of the answer, draw a circle around the box with the question mark in it. Answer the practice question now. (PAUSE FOR 5 SECONDS). Your answer should look like this. (POINT TO POSTER WITH THE CORRECT ANSWER INDICATED).

Please open your test booklet.

Sometimes music has a steady beat. Sometimes music has no beat. This music has a steady beat. (MUSIC PLAYS: excerpt from "The Stars and Stripes Forever" by John Philip Sousa, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 6, Side B, Band 9). This music does not have a steady beat. (MUSIC PLAYS: excerpt from "Moon Music" by Williams, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side A, Band 7[2]).

Find the picture of the bicycle in your booklet. Get ready to answer the bicycle question. Listen to this music. Decide if you hear a steady beat or no beat. (MUSIC PLAYS: excerpt from "Brontosaurus" by C. Bahn/K. Hahn, *Music*, Holt, Rinehart and Winston, 1988, Grade Two, Record 7, Side B, Band 9). Circle your answer now. (PAUSE FOR 5 SECONDS).

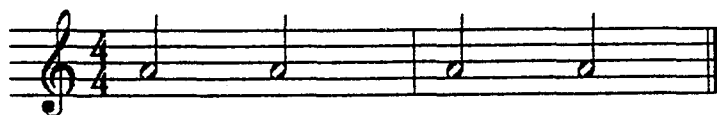
Get ready to answer the airplane question. Listen to this music and decide if you hear a steady beat or no beat. (MUSIC PLAYS: excerpt from "And God Created Great Whales" by Alan Hovhaness, *World of Music*, Silver Burdett and Ginn, 1988, Grade Four, Record 1, Side B, Band 9). Circle your answer now. (PAUSE FOR 5 SECONDS).

Find the picture of the pencil. Get ready to answer the pencil question.

Listen to this music and decide if you hear a steady beat or no beat. (MUSIC PLAYS: excerpt from "March" from *The Nutcracker Suite* by Peter Tchaikovsky, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side A, Band 7[3]). Circle your answer now. (PAUSE FOR 5 SECONDS).

Find the arrow. Get ready for the arrow question. Listen to this music and decide if it has a steady beat or no beat. (MUSIC PLAYS: excerpt from "Plucky" by Herb Alpert, *Herb Alpert and the Tiajuana Brass*, A and M Records, 1965). Now circle your answer. (PAUSE FOR 5 SECONDS).

Sometimes musical sounds are long, like this:



Sometimes musical sounds are short, like this:

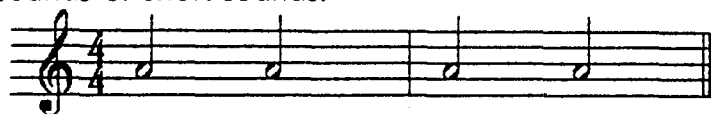


Find the picture of the trophy. In the box beside the trophy are long bars. (POINT TO BOX OF LONG BARS ON POSTER). In the next box are short dots. (POINT TO BOX OF SHORT DOTS ON POSTER). In the next four questions, if you hear long sounds, circle the box with the long bars in it. If you hear short sounds, circle the box with dots in it. If you do not know the answer, circle the box with the question mark in it. Get ready to answer the trophy question. Listen to some music and decide if you hear long sounds or short sounds.



Answer the trophy question now. (PAUSE FOR 5 SECONDS).

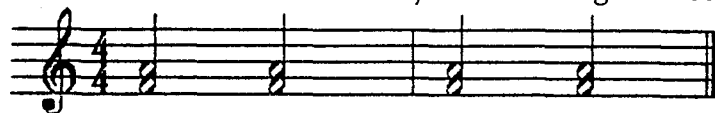
Get ready to answer the star question. Listen to the music and decide if you hear long sounds or short sounds.



Circle your answer now. (PAUSE FOR 5 SECONDS).

Please turn the page.

Find the light bulb at the top of the page. Get ready for the light bulb question. Listen to the music and decide if you hear long sounds or short sounds.



Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready for the butterfly question. Listen to the music and decide if you hear long sounds or short sounds.

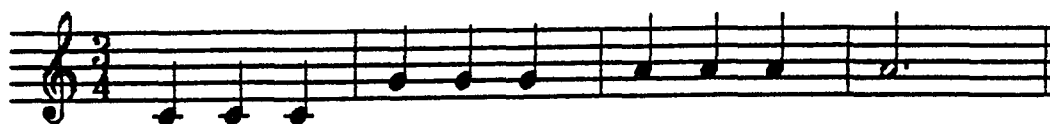


Answer the butterfly question now. (PAUSE FOR 5 SECONDS).

Sometimes the music we hear moves in groups of two, like this.



Sometimes the music we hear moves in groups of three, like this.



Find the picture of the clock. In the box next to the clock are two grey boxes, like this. (POINT TO BOXES ON POSTER). In the next box are three grey boxes, like this. (POINT TO BOXES ON POSTER). Get ready to answer the clock question. Listen to this music and decide if it moves in groups of two or in groups of three. (MUSIC PLAYS: excerpt from, "Carillon" from *L'Arlesienne Suite* by G. Bizet, *World of Music*, Silver Burdett and Ginn, 1988, Grade Four, Record 6, Side B, Band 1[2]). Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready to answer the telephone question. Listen to the music and decide if the music moves in groups of two or groups of three. (MUSIC PLAYS: excerpt from "Skater's Waltz" by Emil Waldteufel, *World of Music*, Silver Burdett and Ginn, 1988, Grade Three, Record 4, Side A, Band 6). Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready to answer the balloon question. Listen to the music and decide if the music moves in groups of twos or in groups of threes. (MUSIC PLAYS: excerpt from "Children's March" by E. F. Goldman, *Music*, Holt, Rinehart, and Winston, 1988, Grade One, Record 7, Side A, Band 7). Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready for the sliding board question. Listen to the music and decide if the music moves in twos or in threes. (MUSIC PLAYS: excerpt from "Kid Stuff," Boston Pops Orchestra, *Music*, Holt, Rinehart, and Winston, 1988, Grade One, Record 7, Side A, Band 4). Circle your answer now. (PAUSE FOR 5 SECONDS).

Please go to the next page.

Find the picture of the school bus at the top of the page. In the box next to the school bus there is a box with a circle and a rectangle in it for patterns that are different. In the next box are two circles for patterns that are the same. (POINT TO POSTER AND APPROPRIATE BOXES). Get ready to answer the school bus question. Listen to two rhythm patterns and decide if the patterns are different or if they are the same.

Pattern 1:



Pattern 2:



Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready for the desk question. Listen to the music and decide if the rhythm patterns are different or if they are the same.

Pattern 1:



Pattern 2:



Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready for the smiley face question. Listen to this music and decide if the rhythm patterns are different or if they are the same.

Pattern 1:



Pattern 2:



Circle your answer now. (PAUSE FOR 5 SECONDS).

Sometimes the music that we hear is restful. Sometimes the music that we hear is exciting. Find the picture of the swing set. In the box next to the swing set is a picture of a person resting for music that is restful or quiet. In the next box is a picture of a person jumping for music that is exciting. Get ready to answer the swing set question. Listen to the music and decide if it is restful or exciting. (MUSIC PLAYS: excerpt from "Sheep May Safely Graze" from *Cantata, BWV208*, by J. S. Bach, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side B, Band 2[4]). Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready for the owl question. Listen to the music and decide if it is restful or exciting. (MUSIC PLAYS: excerpt from "March Militaire" by Franz Schubert, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Band 10). Circle your answer now. (PAUSE FOR 5 SECONDS).

Go to the next page.

Sometimes music is slow, like this. (MUSIC PLAYS: excerpt from "Sarabande" from *Suite* by Johann Pezel, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side B, Band 4).

Sometimes music is fast, like this. (MUSIC PLAYS: excerpt from "Can-Can" from *Gaite Parisienne* by Jacques Offenbach, *World of Music*, Silver Burdett, and Ginn, 1988, Grade One, Record 4, Side A, Band 9[4]).

Next to the crayons is a box with a squiggly line that has bumps far apart to represent slow music. In the next box, the squiggly line has bumps that are close together to represent fast music. (POINT TO BOX WITH SQUIGGLY LINES ON POSTER). In the next box, the squiggly line has bumps that are close together to represent fast music. (POINT TO BOX WITH SQUIGGLY LINES ON POSTER).

Get ready to answer the crayon question. Listen to this music and decide if it is fast music or slow music. (MUSIC PLAYS: excerpt from "Minuet" from *Berenice* by G. F. Handel, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side A, Band 9[5]). Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready to answer the man-on-the-horse question. Listen to the music and decide if it is fast or slow. (MUSIC PLAYS: excerpt from "Children's Games" *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side A, Band 8). Circle your answer now. (PAUSE FOR 5 SECONDS).

Sometimes we hear music that is loud, like this. (MUSIC PLAYS: excerpt from *1812 Overture* by Peter Tchaikovsky, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side B, Band 2[3]). Sometimes we hear music that is soft, like this. (MUSIC PLAYS: excerpt from "Fantasia on Greensleeves" by Ralph Vaughan-Williams, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side B, Band 1[1]). Look at the boxes beside the

bookworm. The box next to the bookworm has a black circle in it for loud music. The next box has a grey circle in it for soft music.

Get ready to answer the bookworm question. Listen to this music and decide if it is loud or soft. (MUSIC PLAYS: excerpt from *Brandenburg Concerto No. 5 in D Major* by J. S. Bach, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side A, Band 8[5]). Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready to answer the bookbag question. Listen to this music and decide if it is loud or soft. (MUSIC PLAYS: excerpt from "On Hearing a Cuckoo in the Deep Woods" by Frederick Delius, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side B, Band 2[1]). Circle your answer now. (PAUSE FOR 5 SECONDS).

Find the frowny face. Next to the frowny face is a box with three smooth lines in it for music that is smooth and connected. (POINT TO THE BOX WITH SMOOTH LINES ON THE POSTER). The next box is filled with dots for music that is not smooth. (POINT TO THE BOX WITH DOTS ON THE POSTER).

Get ready to answer the frowny face question. Listen to the music and decide if it is smooth or if it is not smooth. (MUSIC PLAYS: excerpt from "Run, Run" by Octavio Pinto, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 6, Side A, Band 2). Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready for the barrel-of-monkeys question. Listen to the music. Decide if it is smooth and connected or if it is not smooth and connected. (MUSIC PLAYS: excerpt from "The Swan" from *Carnival of the Animals* by Camille Saint-Saens, *Music*, Holt, Rinehart, and Winston, 1988, Grade Two, Record 4, Side A, Band 8). Circle your answer now. (PAUSE FOR 5 SECONDS).

Go to the next page.

Find the picture of the pencil sharpener at the top of the page. In the box next to the pencil sharpener there are circles that start small and get bigger and darker for music that gets louder. (POINT TO THE BOX WITH CIRCLES THAT GET BIGGER ON POSTER). In the next box are circles that start big and dark and get smaller for music that gets softer. (POINT TO THE BOX WITH CIRCLES THAT GET SMALLER ON POSTER). Get ready to answer the pencil sharpener question. Listen to the music and decide if it gets louder or if it gets softer. (MUSIC PLAYS: excerpt from "Turkish March" by Ludwig Beethoven, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side B, Band 2[5]). Circle your answer now. (PAUSE FOR 5 SECONDS).

This is the end of the test. Please close your test booklet and stay in your seat until all booklets have been collected.

ANSWER KEY

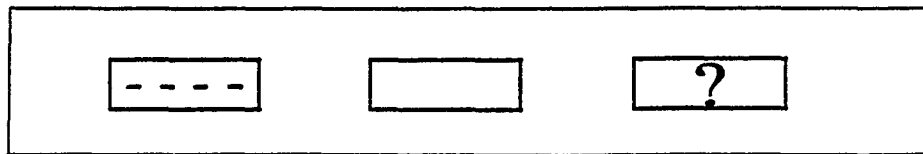
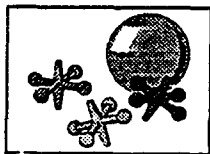
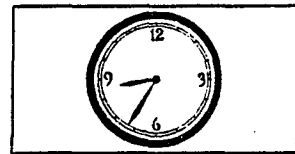
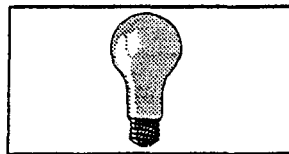
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5. B	10. B	15. B	20. B	25. A

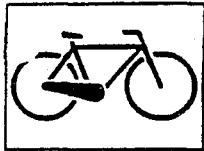
Note: Items 1-25 in Subtest Two transcript and answer key are items 26-50 in the Total Test analysis, discussion, and revision recommendations.




Test Booklet
Grade One
Rhythm and Expressive
Qualities

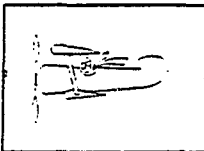
Name: _____ Age: _____



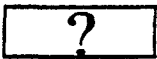
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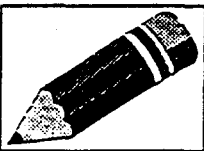




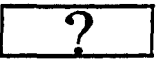


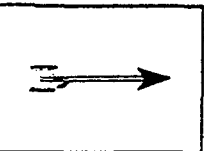
		
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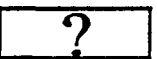


		
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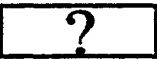


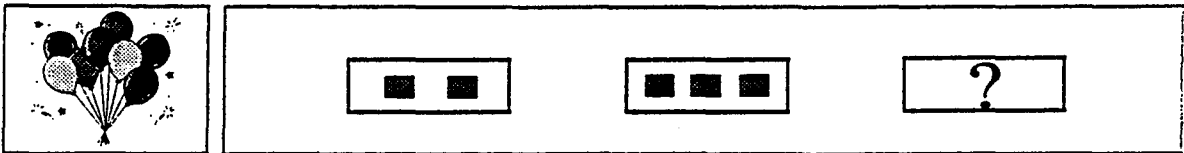
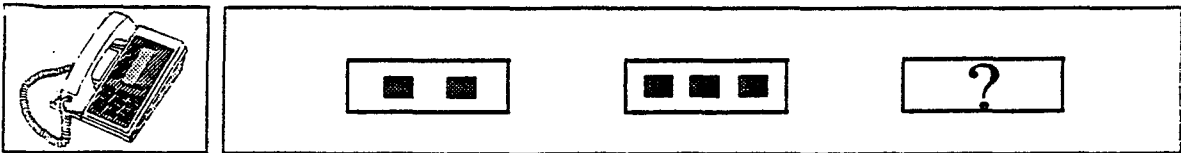
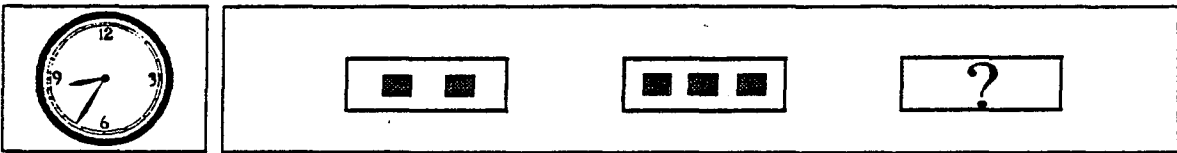
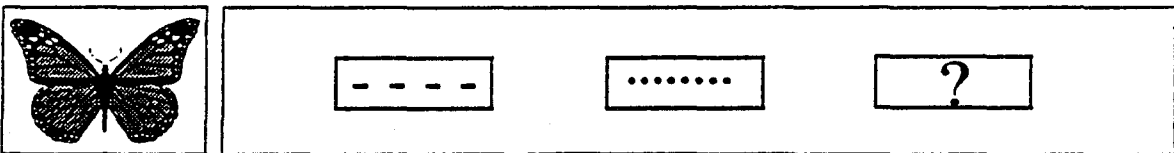
		
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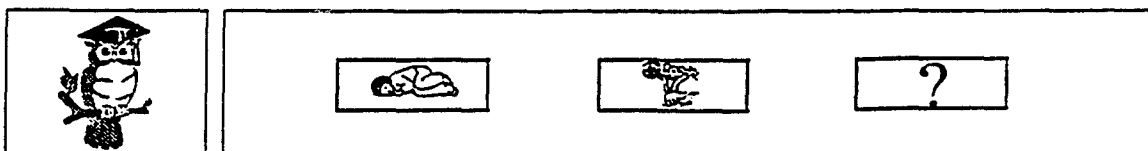
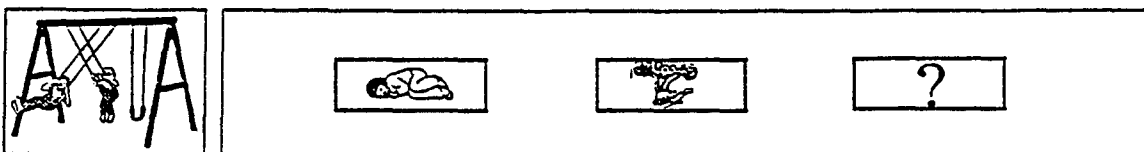
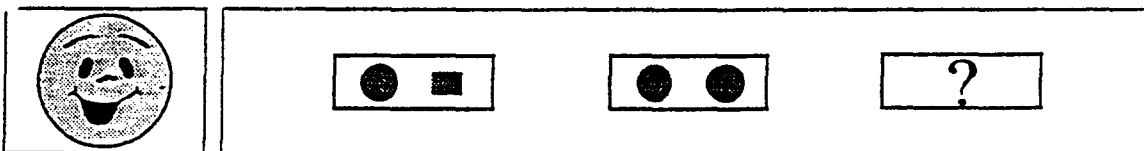
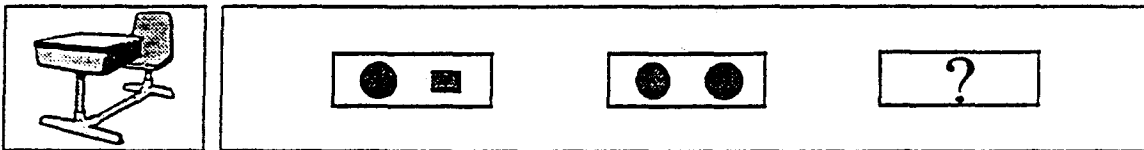
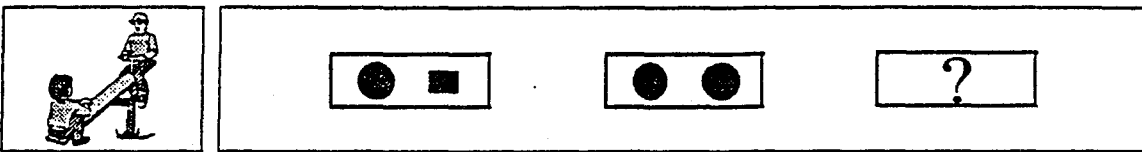


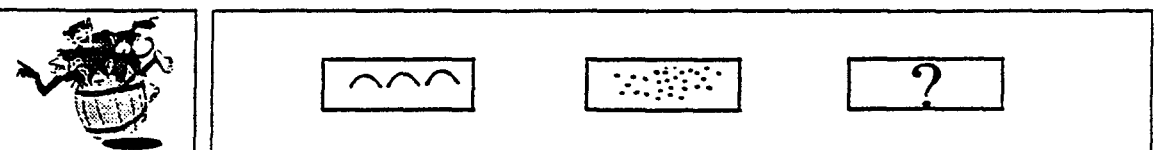
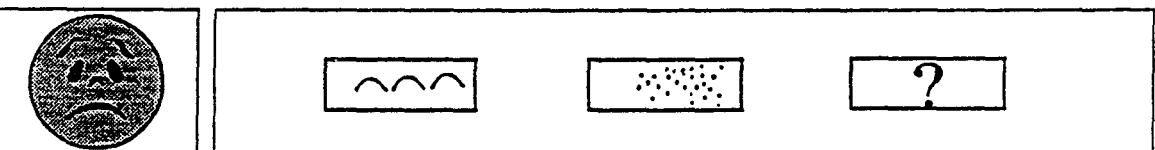
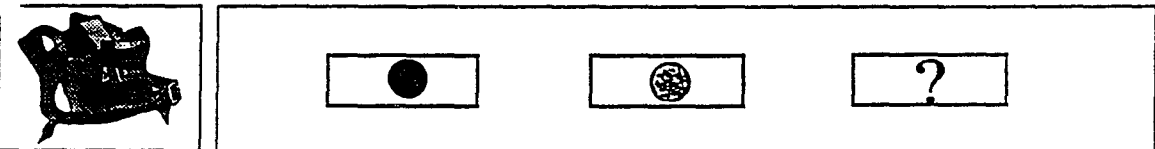
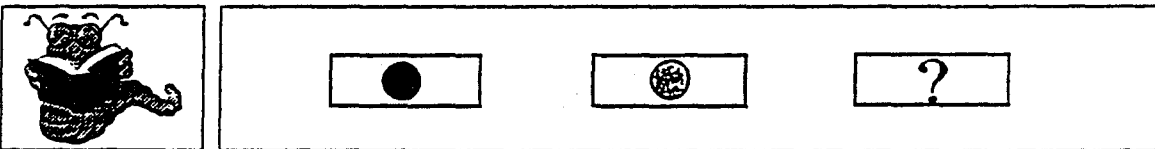
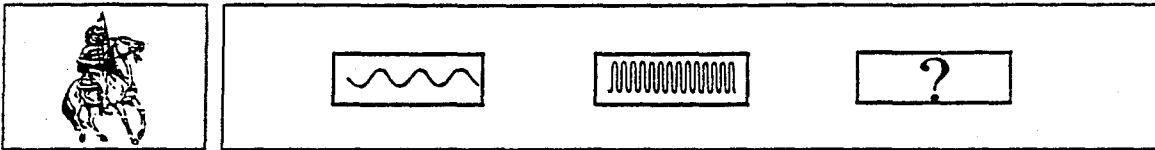
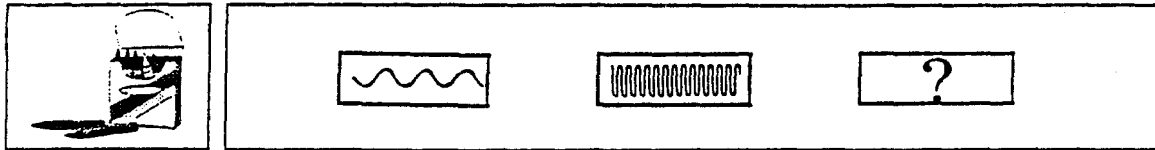
		
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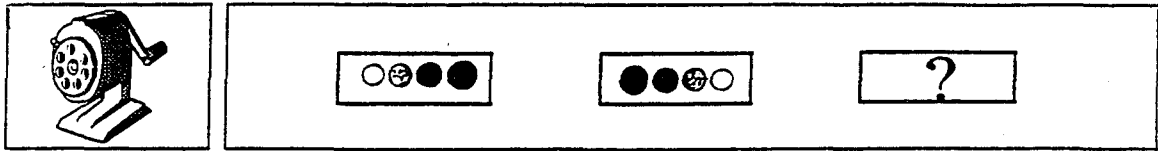


		
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APPENDIX E

TEST TRANSCRIPTS, TEST BOOKLETS, AND ANSWER KEYS
GRADE TWO

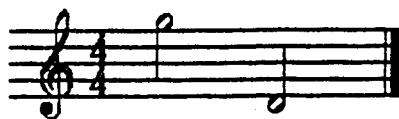
TEST TRANSCRIPT: GRADE TWO, SUBTEST ONE

MELODY, FORM, TIMBRE, HARMONY

You are getting ready to take a music test. Put your name on the first line (PAUSE FOR 20 SECONDS). Write how old you are on the next line, beside the word age—A-G-E. (PAUSE FOR 10 SECONDS). Write today's date on the next line. Your teacher has written it for you to copy. (HOLD UP POSTER WITH DATE WRITTEN ON IT OR POINT TO DATE WRITTEN ON BLACKBOARD. PAUSE FOR 10 SECONDS). On the next line, write your birthdate, if you know it. If you do not know your birthdate, put an X on the line. (PAUSE FOR 20 SECONDS).

Next, find the picture of the apple and bookworm. (POINT TO POSTER 1). In the box beside the apple is a box with balloons in it, a box with a light bulb in it, and a box with a clock in it. Draw a circle around the box with balloons in it. (PAUSE FOR 5 SECONDS). Your answer should look like this. (POINT TO THE ENCIRCLED BOX WITH BALLOONS IN IT. PAUSE FOR 5 SECONDS). Let's do a practice question. Put your finger on the box that has the ball and jacks in it. (PAUSE FOR 3 SECONDS). Next to the ball and jacks are three boxes. The first box has two dots in it—the first one high, the next one low. The next box also has two dots in it, but the first one is low. The second one is

Decide if the first sound is high or low.

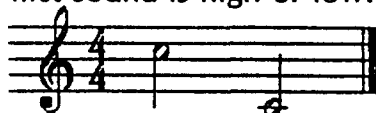


If you heard a high sound first, draw a circle around the first box. If you heard a low sound first, draw a circle around the second box. If you do not know, draw a circle around the box with the question mark in it. Circle your answer now. (PAUSE FOR 5 SECONDS). Your answer should look like this. (HOLD UP POSTER WITH THE CORRECT ANSWER CIRCLED. POINT TO CORRECT ANSWER. PAUSE FOR 5 SECONDS).

Please open your test booklet.

Find the picture of the school bus. In the boxes beside the school bus there are two dots. high then low; in the next box are two dots, low, then high. In the next box is a question mark. In the next three questions you will hear two musical sounds. If the first sound is high, circle the first box. If the low sound is first, circle the next box. If you do not know, circle the box with the question mark in it.

Get ready to answer the school bus question. Listen to these two musical sounds and decide if the first sound is high or low.



Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready to answer the see-saw question. Listen to two musical sounds and decide if the first sound is high or if the second sound is high.



Answer the see-saw question now. (PAUSE FOR 5 SECONDS).

Get ready to answer the desk question. Listen to two musical sounds and decide if the first sound is high or low.



Circle your answer now. (PAUSE FOR 5 SECONDS).

Find the picture of the smiley face. In the box beside the smiley face are three blocks that skip down, 5-3-1. In the next box are four blocks that step up—1-2-3-4. In the next box there is a question mark. Sometimes the music that we hear moves by skips, like this.

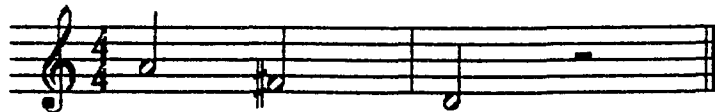


Sometimes the music that we hear moves by steps, like this.



In the next three questions, listen to the music. Decide if it moves by skips or by steps. If the melody skips, draw a circle around the first box. If the melody steps, draw a circle around the next box. If you do not know, draw a circle around the box with the question mark in it. Get ready to answer the smiley face question.

Listen to the music. Decide if it moves by steps or by skips.



Answer the smiley face question now. (PAUSE FOR 5 SECONDS).

Get ready to answer the swing set question. Listen to the music and decide if the melody moves by skips or steps.



Answer the swing set question now. (PAUSE FOR 5 SECONDS).

Get ready to answer the owl question. Listen to the music and decide if the melody moves by skips or by steps.



Answer the owl question now. (PAUSE FOR 5 SECONDS).

Please turn the page. (PAUSE FOR 3 SECONDS).

Find the picture of the box of crayons. In the Box next to the crayons is a box with two shapes that are alike, two circles. In the next box are two shapes that are different—a circle and a rectangle. In the next box is a question mark. Sometimes the music that we hear has melodies that are the same, like this.

Melody 1:



Melody 2:



Sometimes the music that we hear has melodies that are different.

Melody 1:



Melody 2:



In the next seven questions you will hear two melodies. If the melodies are alike, circle the box with two circles. If you hear two melodies that are different, circle the box with different shapes in it. If you do not know, draw a circle around the box with the question mark in it.

Get ready to answer the crayon question. Listen to two melodies. Decide if they are alike or different.

Melody 1:



Melody 2:

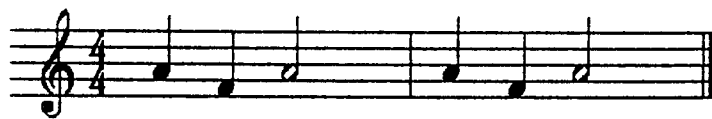


Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready to answer the man-on-a-horse question. Listen to two melodies.

Decide if they are alike or different.

Melody 1:



Melody 2:



Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready to answer the bookworm question. Listen to two melodies.

Decide if they are alike or different.

Melody 1:



Melody 2:



Circle your answer now. (PAUSE FOR 5 SECONDS).

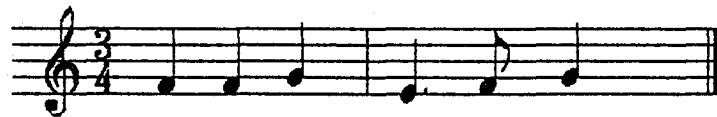
Get ready to answer the bookbag question. Listen to two melodies.

Decide if they are alike or different.

Melody 1:



Melody 2:



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Get ready to answer the frowny face question. Listen to two melodies.

Decide if they are alike or if they are different.

Melody 1:



Melody 2:



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Get ready to answer the barrel-of-monkeys question. Listen to two melodies. Decide if they are alike or different.

Melody 1:



Melody 2:



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Go to the top of the next page.

Get ready to answer the bicycle question. Listen to two melodies. Decide if they are alike or if they are different.

Melody 1:



Melody 2:



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Find the picture of the airplane. In the box beside the airplane there are two circles, shapes that are the same. In the next box you see a circle, a rectangle, a circle. The way melodies are put together in music is called form. In the next five questions you will listen to music and decide if the form is two melodies that are alike, two melodies that are different, of three sections of melody. If you do not know, circle the question mark.

Get ready for the airplane question. Listen to music and decide if you hear two sections or three sections.



Get ready to answer the trophy question. Listen to the music and decide if you hear two sections or three sections.



Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready to answer the star question. Listen to the music and decide if you hear two sections or three sections.



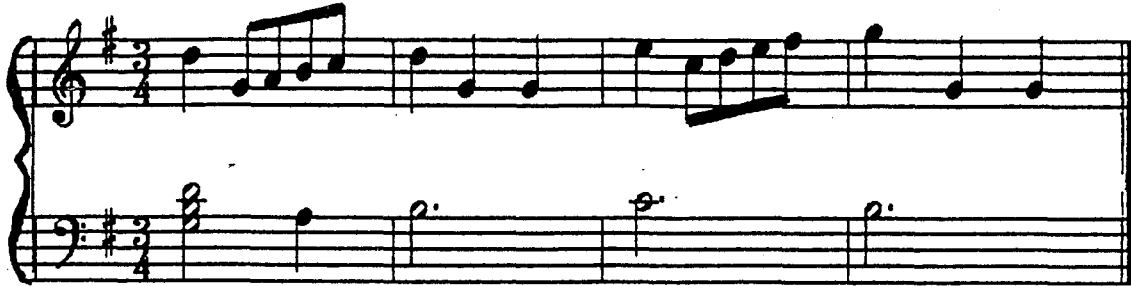
Answer the star question now. (PAUSE FOR 5 SECONDS).

Please turn the page. (PAUSE FOR 3 SECONDS).

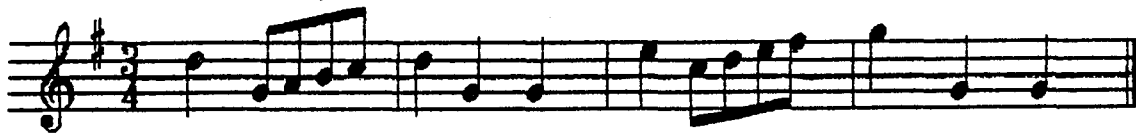
Find the picture of the light bulb. In the box next to the light bulb is one wavy line. In the next box there are four wavy lines. Sometimes we hear one melody only, like this.



Sometimes we hear a melody with harmony, or more than one melody, like this.



In the next three questions, decide if you hear one melody or a melody with harmony. If you hear melody only, circle the box with one wavy line. If you hear more than a melody, circle the box with four wavy lines in it. If you do not know, circle the box with the question mark in it. Get ready to answer the light bulb question. Listen to the music and decide if you hear only one melody or more than one melody.



Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready to answer the butterfly question. Listen to this music. Decide if you hear one melody or more than one melody.





Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready to answer the clock question. Listen to this music. Decide if you hear one melody or more than one melody.



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Each instrument has its own special sound. Find the picture of the telephone. In the box next to the telephone is a drum. In the next box is a picture of a piano. In the next box is a question mark. Get ready to answer the telephone question. Listen to the music and decide if you hear a drum or a piano. (MUSIC PLAYS: excerpt from "Children's Symphony" by H. McDonald,

Silver Burdett, Grade One, Record 1, Side A, Band 2). Now, circle your answer.
(PAUSE FOR 5 SECONDS).

Get ready to answer the balloon question. Listen to this music and decide if you hear a trumpet or a clarinet. (MUSIC PLAYS: "What Do You Hear?" from Silver Burdett, Grade Three, Record 6, Side A, Band 4).

Get ready to answer the sliding board question. Listen to this music. Decide if you hear a clarinet or a violin. (MUSIC PLAYS: excerpt from "Serenade for Strings," Silver Burdett, Grade One, Record 6, Side B, Band 5[5]). Now, circle your answer. (PAUSE FOR 5 SECONDS).

Go to the next page.

Get ready to answer the pencil sharpener question. Listen to this music. Decide if you hear a clarinet or a piano. (MUSIC PLAYS: "What Do You Hear?" Silver Burdett, Grade One, Record 6, Side B, Band 4).
Now, circle your answer. (PAUSE FOR 5 SECONDS).

This is the end of the test. Please close your test booklet. Stay in your seat until all booklets have been collected.

(TIME: 23 minutes, 15 seconds)

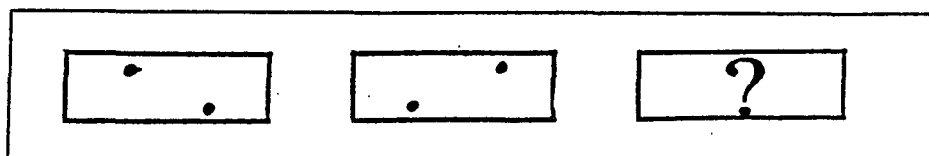
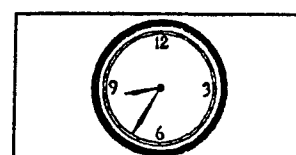
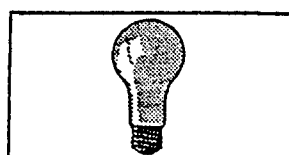
ANSWER KEY

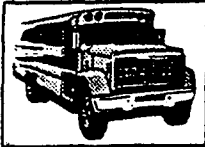

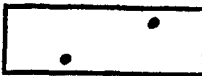
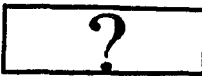
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2. B	7. B	12. B	17. A	22. A
3. A	8. A	13. A	18. B	23. A
4. A	9. B	14. A	19. A	24. A
5. B	10. A	15. B	20. B	25. B

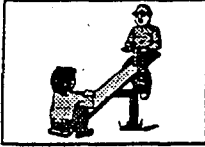



Test Booklet Grade Two Melody, Timbre, Form





Name: _____ Age: _____


Date: _____ Birthdate: _____

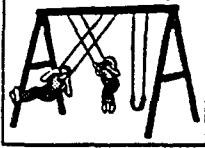


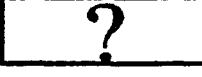






   

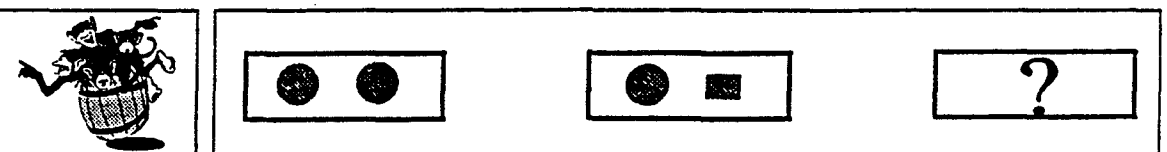
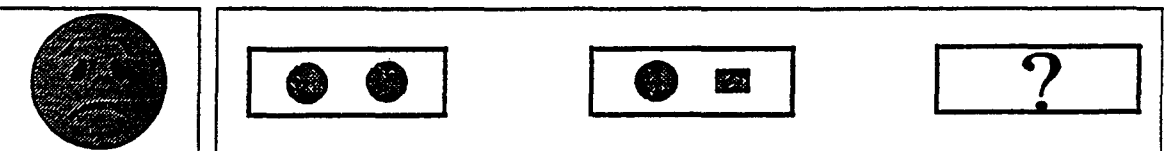
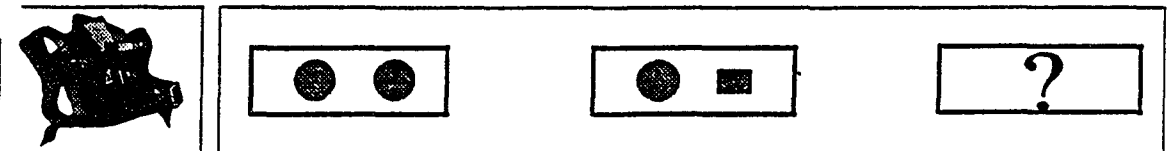
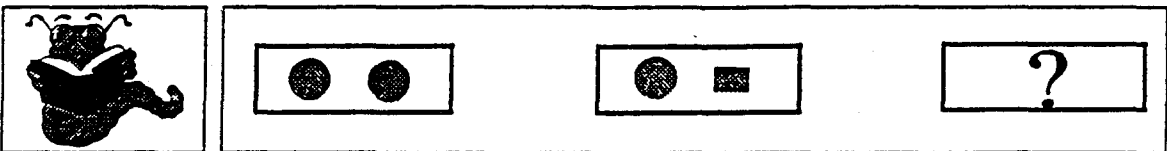
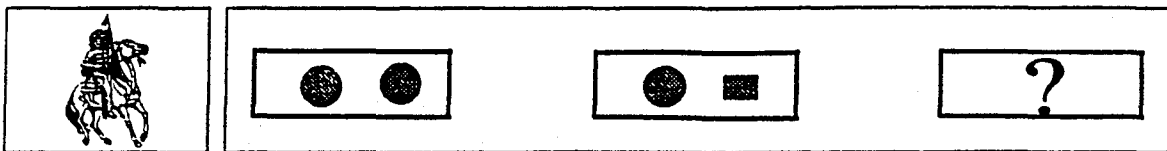
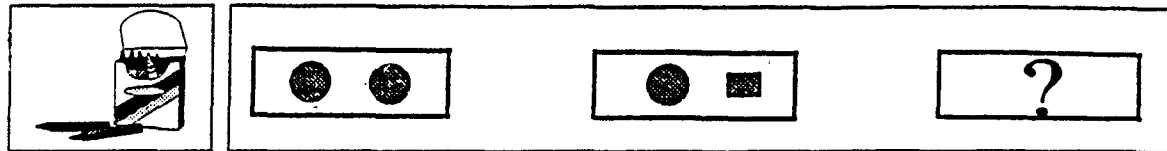
   

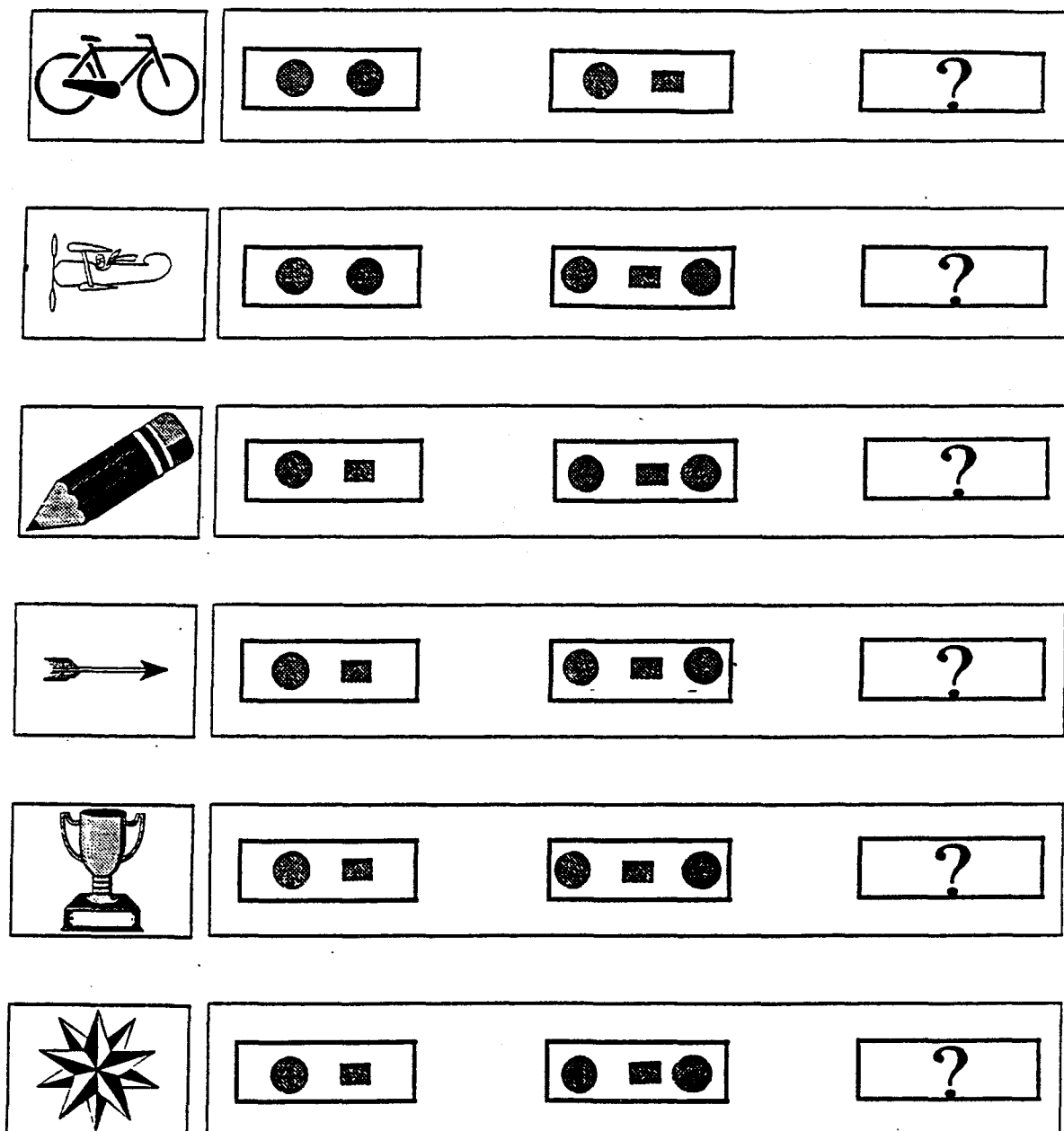
   

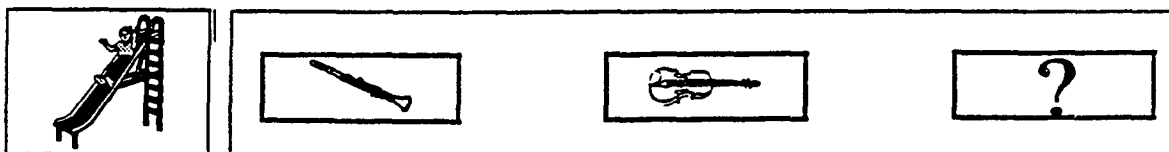
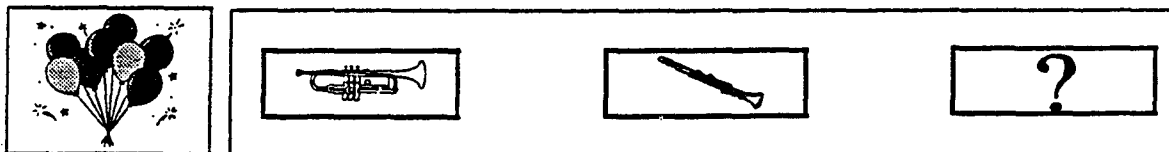
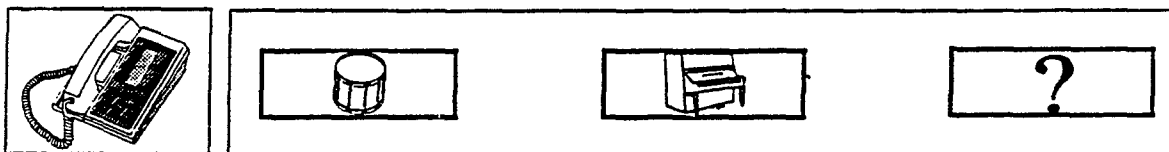
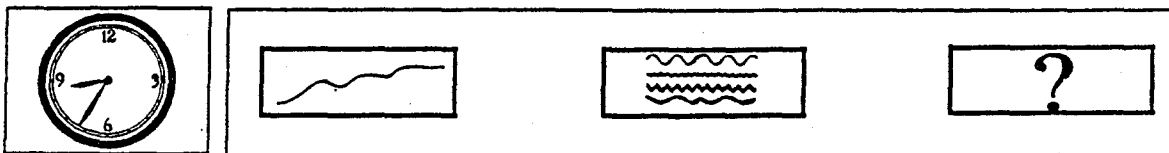
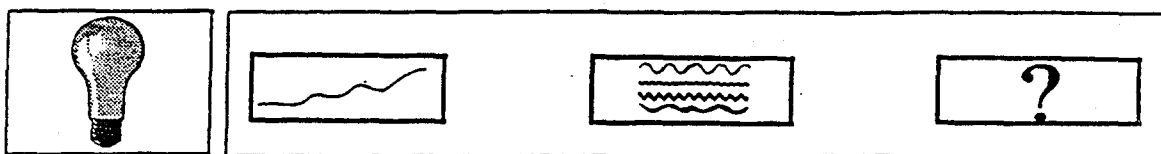
   

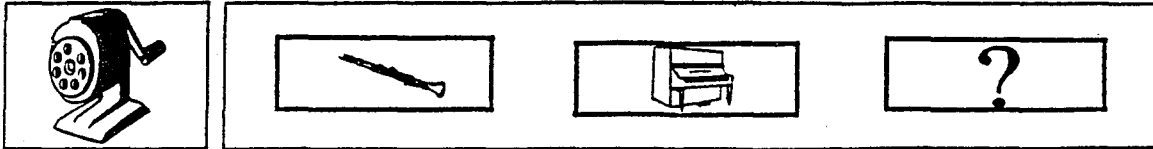
   









TEST TRANSCRIPT: GRADE TWO, SUBTEST TWO
RHYTHM, TIMBRE, EXPRESSIVE QUALITIES

You are getting ready to take a music test. Put your name on the first line. (PAUSE FOR 20 SECONDS). Write how old you are on the next line, beside the word age—A-G-E. (PAUSE FOR 10 SECONDS). Write today's date on the next line. Your teacher has written the date for you to copy. (HOLD UP SHEET WITH DATE WRITTEN ON IT OF DATE IS WRITTEN ON THE BOARD. PAUSE FOR 20 SECONDS). On the next line, write your birthdate, if you know it. If you do not know your birthdate, put an X on the line. (PAUSE FOR 20 SECONDS).

Next, find the picture of the apple and bookworm. In the boxes beside the apple you find a box with balloons in it, a box with a light bulb in it, and a box with a clock in it. Draw a circle around the box with the balloons in it. (PAUSE FOR 5 SECONDS). Your answer should look like this. (POINT TO THE CIRCLED BOX WITH BALLOONS IN IT). To answer a question, you must draw a circle around the box that holds the correct answer.

Let's do a practice question. Put your finger on the box that has the ball and jacks in it. (PAUSE FOR 3 SECONDS). Next to the ball and jacks are three boxes. One has four marks in it for music that has a beat. One has no marks in it for music with no beat. One box has a question mark in it. Listen to some music. Decide if this music has a beat or no beat. (MUSIC PLAYS: excerpt from

"Children's Symphony" by H. McDonald, *Music*, Holt, Rinehart, and Winston, 1988, Grade One, Record 1, Band 2). Draw a circle around the box with marks in it if that music had a beat. Draw a circle around the box with no marks in it if that music did not have a beat. If you do not know, draw a circle around the box with the question mark in it. Circle your answer now. (PAUSE FOR 5 SECONDS). Your answer should look like this. (PAUSE FOR 3 SECONDS. POINT TO CORRECT ANSWER).

Please open your test booklet.

Sometimes music has a steady beat. Sometimes music does not have a steady beat. This music has a steady. (MUSIC PLAYS: excerpt from "The Stars and Stripes Forever" by J. P. Sousa, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 6, Side B, Band 9). This music does not have a steady beat. (MUSIC PLAYS: excerpt from "The Banshee" by H. Cowell, *Music*, Holt, Rinehart, and Winston, 1988, Grade Three, Record 8, Side A, Band 5). Find the picture of the light bulb at the top of the page. Get ready to answer the light bulb question. Listen to this music and decide if you hear a steady beat or no beat. (MUSIC PLAYS; excerpt from "Brontosaurus" by C. Bahn and K. Hahn, *Music*, Holt, Rinehart, and Winston, 1988, Grade Two, Record 7, Side B, Band 7). Circle your answer now. (PAUSE 5 SECONDS).

Get ready to answer the butterfly question. Listen to this music and decide if you hear a steady beat or no beat. (MUSIC PLAYS: excerpt from "Plucky" from

Herb Alpert and the Tiajuana Brass, A and M Records, 1963). Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready to answer the clock question. Listen to this music. Decide if you hear a steady beat or if you do not hear a beat. (MUSIC PLAYS: excerpt from "Syncopated Clock" by L. Anderson, *World of Music*, Silver Burdett and Ginn, 1988, Grade Four, Record 1, Side A, Band 5). Circle your answer now. (PAUSE FOR 5 SECONDS).

Find the picture of the telephone. Get ready to answer the telephone question. Listen to this music and decide if you hear a steady beat or no beat. (MUSIC PLAYS: excerpt from "Autumn" from *The Four Seasons* by A. Vivaldi, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 5, Side A, Band 3[3]). Circle your answer now. (PAUSE FOR 5 SECONDS).

Find the picture of the balloons. In the box beside the balloons there are two circles—two things that are alike. In the next box is a circle and a rectangle—two things that are not alike. Sometimes we hear rhythm patterns that are alike, like this.

Pattern 1:

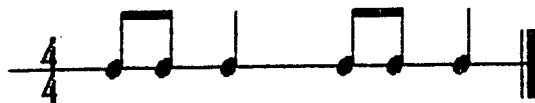


Pattern 2:



Sometimes we hear patterns that are different form each other, like this.

Pattern 1:



Pattern 2:



To answer the next four questions, if you hear two patterns that are alike, draw a circle around the box with two shapes that are alike. If you hear patterns that are different from each other, draw a circle around the box with two different shapes in it. If you do not know, draw a circle around the box with the question mark in it.

Get ready to answer the balloon question. Listen to two rhythm patterns and decide if the patterns are alike or if they are different from each other.

Pattern 1:



Pattern 2:



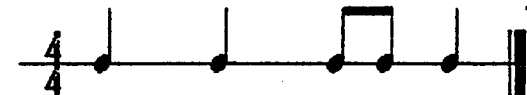
Now, circle your answer. (PAUSE FOR 5 SECONDS).

Find the picture of the sliding board. Get ready to answer the sliding board question. Listen to two rhythm patterns and decide if the patterns are alike or if they are different from each other.

Pattern 1:



Pattern 2:



Answer the sliding board question now. (PAUSE FOR 5 SECONDS).

Please turn the page. (PAUSE FOR 3 SECONDS).

Find the picture of the bicycle at the top of the page. Get ready to answer the bicycle question. Listen to two rhythm patterns and decide if they are alike or if they are different from each other.

Pattern 1:



Pattern 2:



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Find the picture of the airplane in your booklet. Get ready to answer the airplane question. Listen to two rhythm patterns and decide if they are alike or if they are different from each other.

Pattern 1:



Pattern 2:



Circle your answer now. (PAUSE FOR 5 SECONDS).

Find the picture of the pencil. In the box next to the pencil there is a box with two rectangles in it. In the next box there are three rectangles. Sometimes the music that we hear moves in groups of twos like this. (MUSIC PLAYS: excerpt from "Prelude" to *Carmen* by G. Bizet, *World of Music*, Silver Burdett and

Ginn, 1988, Grade Five, Record 7, Side A, Band 4[1]). Sometimes music moves in groups of threes, like this. (MUSIC PLAYS: "Waltz in A flat major" by J. Brahms, *World of Music*, Silver Burdett and Ginn, 1988, Grade Five, Record 7, Band 4[2]). In the next four questions, draw a circle around the box with two rectangles if the music moves in twos. Draw a circle around the box with three rectangles in it if the music moves in threes. If you do not know, draw a circle around the box with the question mark in it.

Get ready to answer the pencil question. Listen to the music and decide if it moves in twos or in threes. (MUSIC PLAYS: excerpt from "Minuet" from *Royal Fireworks Music* by G. F. Handel, *World of Music*, Silver Burdett and Ginn, 1988, Grade Five, Record 7, Side A, Band 4[5]). Answer the pencil question now. (PAUSE FOR 5 SECONDS).

Get ready to answer the arrow question. Listen to this music. Decide if the music moves in twos or if it moves in threes. (MUSIC PLAYS: excerpt from "March Militaire" by F. Schubert, *World of Music*, Silver Burdett and Ginn, 1988, Grade Five, Record 7, Side A, Band 4[6]). Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready to answer the trophy question. Listen to this music. Decide if it moves in twos or threes. (MUSIC PLAYS: excerpt from "Dance of the Reed Pipes" from *The Nutcracker Suite* by P. Tchaikovsky, *World of Music*, Silver Burdett and Ginn, 1988, Grade Five, Record 7, Side B, Band 1). Circle your answer now. (PAUSE FOR 5 SECONDS).

Find the picture of the star. Get ready to answer the star question. Listen to the music and decide if the music moves in twos or threes. (MUSIC PLAYS: excerpt from "Overture" from *L'Arlesienne Suite No. 1*, by G. Bizet, *World of Music*, Silver Burdett and Ginn, 1988, Grade Five, Record 7, Side B, Band 1[2]). Circle your answer now. (PAUSE FOR 5 SECONDS).

Go to the next page. (PAUSE FOR 3 SECONDS).

Find the picture of the box of crayons. In the box next to the crayons are some long lines and some short lines. In the first box, the rhythm is long-long-short-short-long, or ta-ta-ti-ti-ta-. In the next box the rhythm is long-long-long-long or ta-ta-ta-ta-. In the next three questions you will hear a rhythm pattern. To answer the questions draw a circle around the box that has lines to match what you hear. Get ready to answer the crayon question. Listen to the pattern.



Now, circle your answer. (PAUSE FOR 5 SECONDS).

Get ready to answer the man-on-a-horse question. Listen to the pattern.



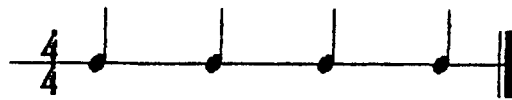
Circle your answer now. (PAUSE FOR 5 SECONDS). Get ready to answer the bookworm question. Listen to the pattern.



Circle your answer now. (PAUSE FOR 5 SECONDS).

Find the picture of the bookbag. In the box beside the bookbag are notes. Some notes are hooked together at the top. These notes are faster than the beat. The other notes are equal to the beat. In the next two questions draw a circle around the box that has notes that match what you hear. Draw a circle around the box with the question mark in it if you do not know the answer.

Get ready to answer the bookbag question. Listen to the pattern.



Answer the bookbag question now. (PAUSE FOR 5 SECONDS).

Find the picture of the frowny face. Get ready to answer the frowny face question. Listen to the pattern.



Answer the frowny face question now. (PAUSE FOR 5 SECONDS).

Find the picture of the barrel-of-monkeys. In the box beside the barrel-of-monkeys is a squiggly line with the bumps close together to show that music is fast. In the next box the squiggly line has bumps that are not close together to show that music is slow. In the next two questions, if you hear fast music, draw a circle around the box with bumps close together. If you hear slow music, draw a circle around the box with the bumps farther apart. If you do not know, draw a circle around the box with the question mark in it.

Get ready to answer the barrel-of-monkeys question. Listen to the music. Decide if it is fast or slow. (MUSIC PLAYS: excerpt from "Can-Can" from *Gaite Parisienne* by J. Offenbach, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side A, Band 9[4]). Circle your answer now. (PAUSE FOR 5 SECONDS).

Please turn the page. (PAUSE FOR 3 SECONDS).

Get ready to answer the school bus question. Listen to the music. Decide if it is fast or slow. (MUSIC PLAYS: excerpt from "Minuet" from *Berenice* by G. F. Handel, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side A, Band 9[5]). Now, circle your answer. (PAUSE FOR 5 SECONDS).

Find the picture of the see-saw. In the box beside the see-saw is a squiggly line with bumps getting closer together. This represents music that gets faster. In the next box is a squiggly line with bumps getting farther apart. This represents music that gets slower. In the next two questions, draw a circle around the box that shows if the music gets faster or slower. If you do not know, draw a circle around the box with the question mark in it.

Get ready to answer the see-saw question. Listen to the music and decide if it gets faster or slower. (MUSIC PLAYS: excerpt from "Dueling Banjos" by Weissburg, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 5, Side A, Band 1[2]). Circle your answer now. (PAUSE FOR 5 SECONDS).

Get ready to answer the desk question. Listen to this music. Decide if it gets faster or if it gets slower. (MUSIC PLAYS: excerpt from "Kangaroos" from

Carnival of the Animals by C. Saint-Saëns, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 5, Side A, Band 2[5]). Circle your answer now. (PAUSE FOR 5 SECONDS).

Find the picture of the swing set. In the box next to the swing set is a black circle for loud music. In the next box the circle is gray for soft music. Sometimes the music we hear is loud, like this (MUSIC PLAYS: excerpt from "Sabre Dance" from *Gayne Ballet Suite* by A. Kachaturian, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 5, Side A, Band 2[3]). Sometimes the music that we hear is soft, like this. (MUSIC PLAYS: excerpt from "Canon in D" by J. Pachelbel, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 5, Side A, Band 1). In the next three questions, if you hear music that is loud, draw a circle around the box with the black circle. If you hear soft music, draw a circle around the box with the gray circle. If you do not know, draw a circle around the box with the question mark in it.

Get ready for the swing set question. Listen to this music. Decide if it is loud or soft. (MUSIC PLAYS: excerpt from "Overture" from *The Nutcracker Suite* by P. Tchaikovsky, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 5, Side A, Band 4[2]). Now, circle your answer. (PAUSE FOR 5 SECONDS).

Get ready to answer the owl question. Listen to this music. Decide if it is loud or soft. (MUSIC PLAYS: excerpt from "Flight of the Bumblebee" from *Tsar Saltan Suite* by N. Rimsky-Korsakov, *World of Music*, Silver Burdett and Ginn,

1988, Grade Two, Record 5, Side A, Band 1[4]). Circle your answer now.

(PAUSE FOR 5 SECONDS).

Go to the next page. (PAUSE FOR 3 SECONDS).

Find the picture of the pencil sharpener.

Get ready to answer the pencil sharpener question. Listen to this music.

Decide if it is loud or soft. (MUSIC PLAYS: excerpt from "Ase's Death" from *Peer Gynt Suite* by E. Grieg, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 5, Side A, Band 1[5]). Now, circle your answer. (PAUSE FOR 5 SECONDS).

This is the end of the test. Please close your test booklet. Stay in your seat until your teacher has taken up all test booklets.

(TIME: 27 minutes, 37 seconds)

ANSWER KEY

1. B	6. A	11. A	16. B	21. B
2. A	7. A	12. A	17. B	22. A
3. A	8. B	13. B	18. A	23. B
4. A	9. B	14. A	19. B	24. A
5. B	10. A	15. A	20. A	25. B

Note: Items 1-25 in Subtest Two transcript and answer key are items 26-50 in Total Test analysis, discussion, and revision recommendations.

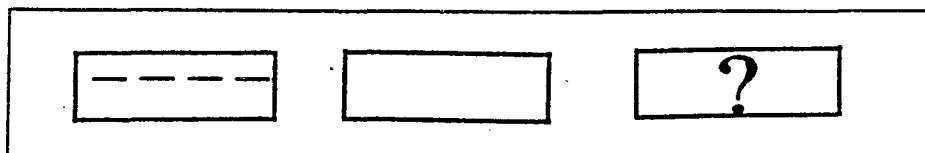
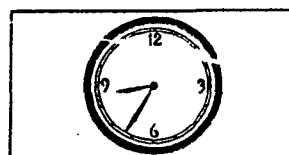
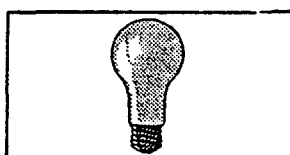
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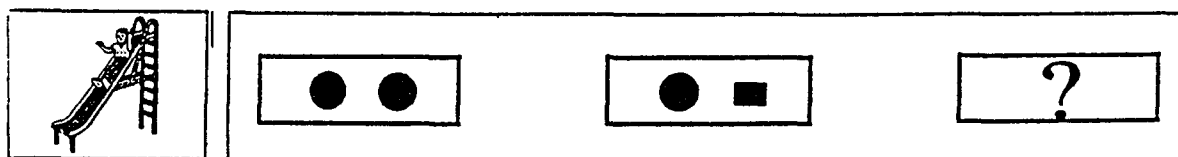
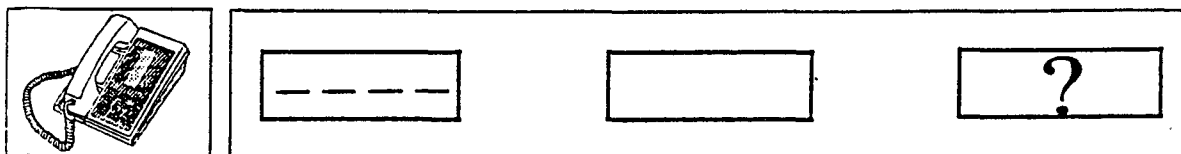
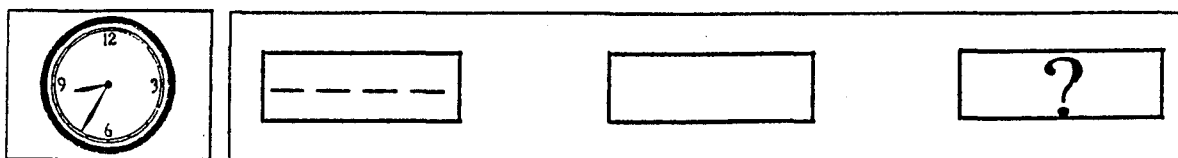
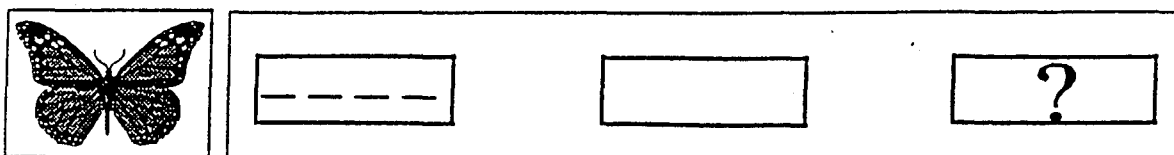
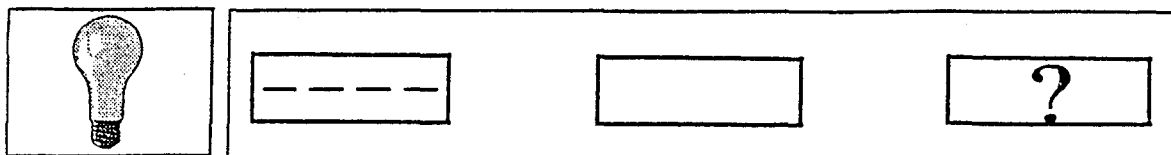
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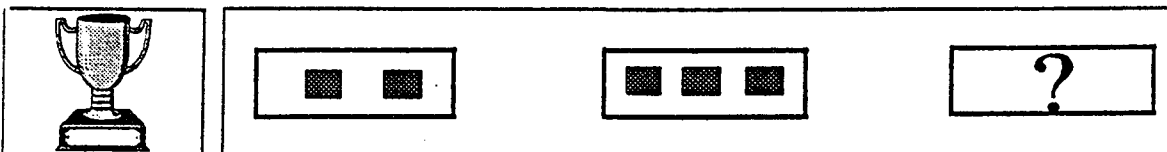
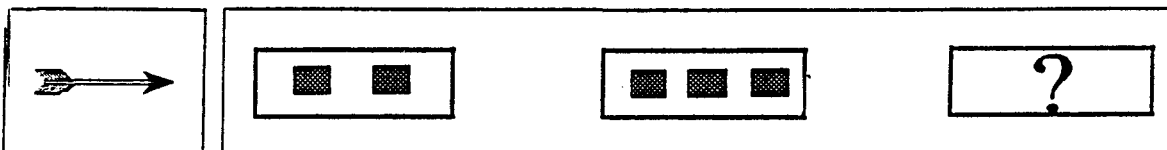
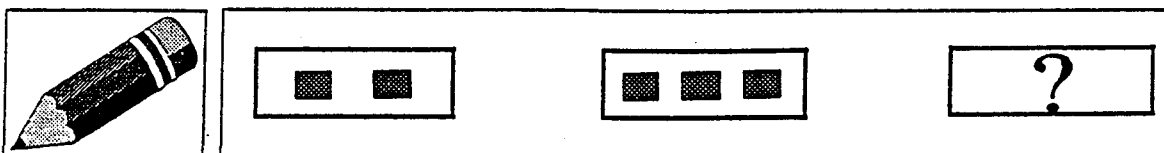
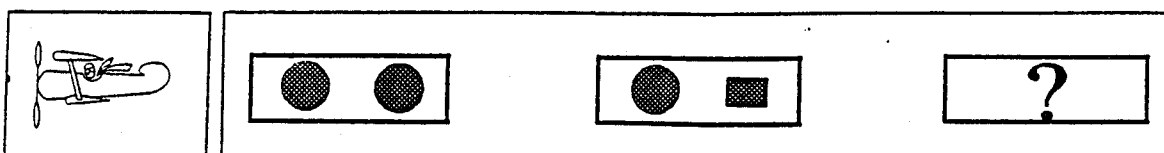
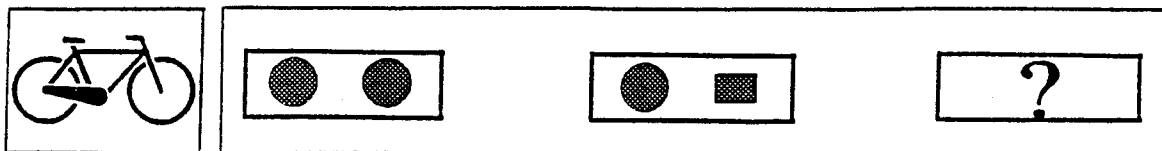
Rhythm and Expressive Qualities

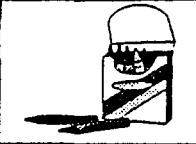



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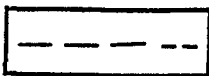

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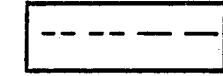
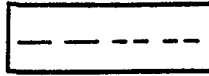




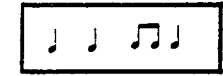

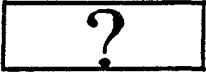










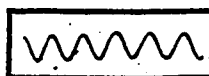
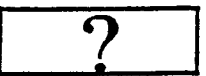
			
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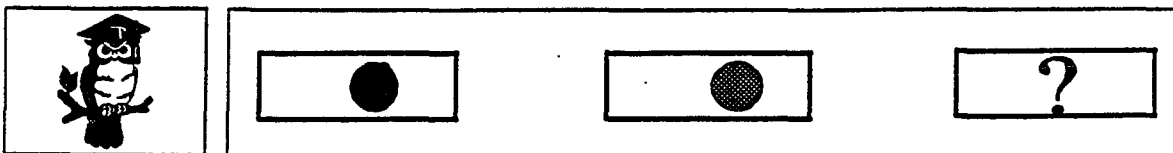
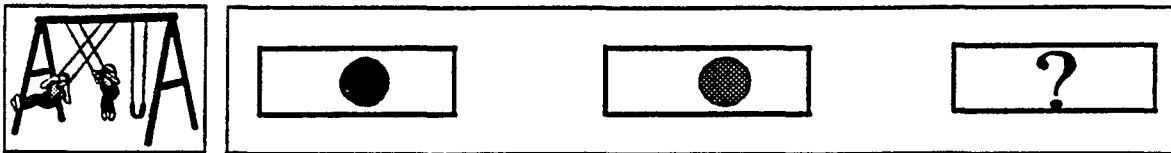
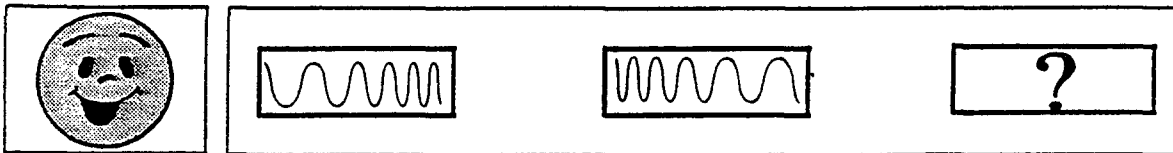
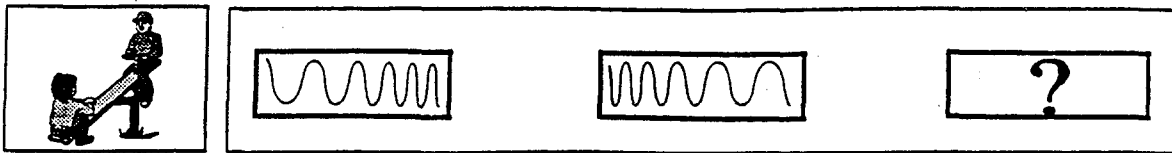
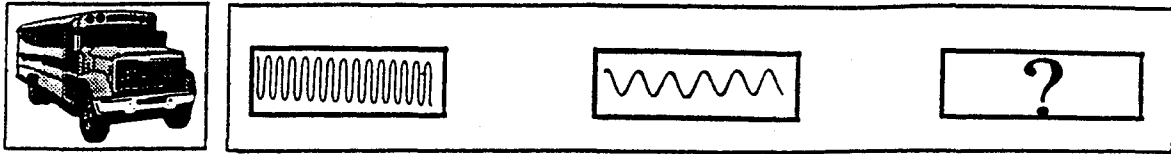
			
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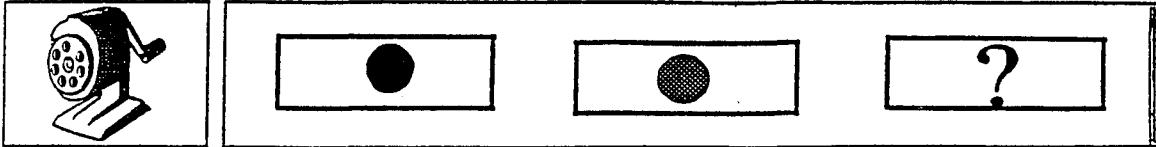
			
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APPENDIX F
TEST TRANSCRIPTS, TEST BOOKLETS, AND ANSWER KEYS
GRADE THREE

TEST TRANSCRIPT: GRADE THREE, SUBTEST ONE
MELODY, FORM, EXPRESSIVE QUALITIES, HARMONY

You are getting ready to take a music test. Please write your name on the answer sheet. Do not write in the test booklet. (PAUSE 20 SECONDS). Write today's date on your answer sheet. Your teacher has written the date for you to copy. (PAUSE FOR 10 SECONDS).

Look at your answer sheet. Turn it so that number one is at the top. Beside number one you see letters A-B-C-D-E. Each letter has brackets around it. To answer a question, fill in the brackets over the letter with a number two pencil, like this. (HOLD UP POSTER SHOWING HOW TO FILL IN ANSWER BLOCK). If you erase, be sure to erase completely. Do not make stray marks on your answer sheet. You should have two number two pencils at your desk.

Please open your test booklet.

Questions one through four will use the same answer block. Beside letter A is an arrow going up. Beside letter B is an arrow going down. Beside letter C is an arrow that goes across. Letter D has a question mark beside it.

In questions one through four you will listen to a melody and decide if it goes up, goes down, or stays the same. When you do not know an answer, select letter D.

Get ready to answer question number one.



Answer question one. (PAUSE FOR 5 SECONDS).

Get ready to answer question number two.



Answer question two now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number three.



Answer question three now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number four.



Answer question four now. (PAUSE FOR 5 SECONDS).

Move to the next answer box for questions five, six, seven, and eight.

Letter A has a box with two circles for melodies that are the same. Letter B has a box with a circle and a rectangle in it for melodies that are different. Letter C has a box with a question mark in it to use if you do not know the answer. In the next four questions you will listen to two melodies and decide if they are the same or different.

Get ready for question five.

Melody 1:



Melody 2:



Answer question five now. (PAUSE FOR 5 SECONDS).

Get ready for question six.

Melody 1:



Melody 2:



Answer question six now. (PAUSE FOR 5 SECONDS).

Get ready for question number seven.

Melody 1:



Melody 2:



Answer question seven now. (PAUSE FOR 5 SECONDS).

Get ready for question eight.

Melody 1:



Melody 2:



Answer question eight now. (PAUSE FOR 5 SECONDS).

Move to the answer box for questions nine, ten, and eleven. The way melodies are put together in music is called form. Sometimes form is described by using shapes to show which tunes or melodies are alike, and which ones are different. Look at letter A. In the box beside letter A there is a box with a rectangle, a circle, and a rectangle. Letter B is next to a box with three rectangles. Look at letter C. There you see a rectangle and two circles. Look at letter D. There you see two circles and a rectangle. You are going to listen to music and decide which shapes on your answer sheet describe the music that you hear.

Get ready to answer question number nine.

Section 1:



Section 2:



Section 3:



Answer question nine now. (PAUSE FOR 5 SECONDS).

Get ready for question ten.

Section 1:



Section 2:



Section 3:



Answer question ten now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number eleven.

Section 1:



Section 2:



Section 3:



Answer question number eleven now. (PAUSE FOR 5 SECONDS).

Look at the choices in the next answer block. A is China. B is Native American. C is church. D is Country. E is "DO NOT KNOW." The way all the parts or elements of music are put together create musical style which often lets us know where the music began. Get ready to answer question number twelve. Listen to some music and decide which answer tells where it began. (MUSIC PLAYS: "Out of the Depths," spiritual performed by Mahalia Jackson, Columbia Records, CL644). Answer question twelve now. (PAUSE FOR 5 SECONDS).

The answer choices for question thirteen are: A, Africa; B, Japan, C, Church, D, Rock. Letter E is a question mark, "DO NOT KNOW." Get ready to answer question thirteen. (MUSIC PLAYS: "Joy to the World," performed by Three Dog Night, from soundtrack of *The Big Chill*, Columbia Pictures Industries). Answer question thirteen now. (PAUSE FOR 5 SECONDS).

The answer choices for question fourteen are: A, Church; B, Children's Play Song; C, Africa, D, Cowboy, E, question mark, "DO NOT KNOW." Get ready to answer question fourteen. (MUSIC PLAYS: excerpt from "African

Drumming," on *Music: An Appreciation*, McGraw-Hill). Answer question fourteen now. (PAUSE FOR 5 SECONDS).

The answer choices for question fifteen are: A, Jazz; B, Japan; C, Work Song; D, Bluegrass; E, question mark, "DO NOT KNOW." Get ready to answer question fourteen. (MUSIC PLAYS: excerpt from Duke Ellington, "Concerto for Cootie" on *Music: An Appreciation*, McGraw-Hill). Answer number fifteen now. (PAUSE FOR 5 SECONDS).

Move to the next answer box. Sometimes we only hear one melody in music. Sometimes we hear two melodies together. Sometimes we hear a melody and harmony. Look at letter A, melody only. Letter B, two melodies. Letter C, melody and harmony, Letter D, a question mark if you do not know. In questions sixteen, seventeen, and eighteen, you will listen to music and decide if you hear one melody, two melodies, or a melody and harmony. Get ready for question sixteen.

Music:



Answer number sixteen now. (PAUSE FOR 5 SECONDS).

Get ready for question seventeen.

Music:

Answer question seventeen now. (PAUSE FOR 5 SECONDS).

Get ready for question eighteen. (MUSIC PLAYS: excerpt from "Rondo alla Turca" from Sonata XVI by W. A. Mozart, Schirmer Library, Vol. 1304, p.254, m. 1-25). Answer question eighteen now. (PAUSE FOR 5 SECONDS).

Move to the next answer box. Look at the box beside letter A. It holds an arrow that points up for mostly high sounds. Beside letter B, the box holds an arrow that points down for mostly low sounds. The box beside letter C has a question mark in it.

Listen to some music and decide if it is mostly high or mostly low. Get ready for question number nineteen. (MUSIC PLAYS: "Malo Flute," *Music*, Holt, Rinehart, and Winston, 1988, Grade One, Record 1, Side A, Band 3). Answer question number nineteen now. (PAUSE FOR 5 SECONDS).

Move to the next answer box. Beside letter A is a line that leaps up.

Beside letter B is a line that leaps down. Beside letter C is a line that looks like steps going up; beside letter D is a line that looks like steps going down. In the next five questions, you will select A for music that leaps up, B for music that leaps down, C for music that steps up, D for music that steps down. E is a choice if you do not know. Get ready for question twenty.



Answer number twenty now. (PAUSE FOR 5 SECONDS).

Get ready for question twenty-one.



Answer number twenty-one now. (PAUSE FOR 5 SECONDS).

Get ready for question twenty-two.



Answer question twenty-two now. (PAUSE FOR 5 SECONDS).

Get ready for question twenty-three.



Answer question twenty-three now. (PAUSE FOR 5 SECONDS).

Get ready for question twenty-four.



Answer question twenty-four now. (PAUSE FOR 5 SECONDS).

Get ready for question number twenty-five.



Answer number twenty-five. (PAUSE FOR 5 SECONDS).

This is the end of the test. Please close your test booklet. Remain seated until the teacher has taken up your answer sheet and your test booklet.

(TIME: 17 minutes, 45 seconds)

ANSWER KEY

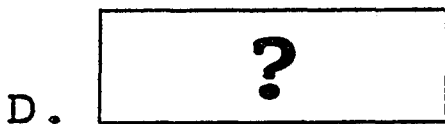
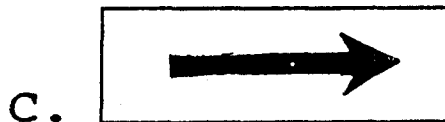
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|------|-------|-------|-------|-------|
| 1. B | 6. B | 11. D | 16. A | 21. C |
| 2. A | 7. B | 12. D | 17. B | 22. B |
| 3. B | 8. A | 13. D | 18. C | 23. A |
| 4. C | 9. B | 14. C | 19. A | 24. C |
| 5. A | 10. C | 15. A | 20. A | 25. A |

Test Booklet

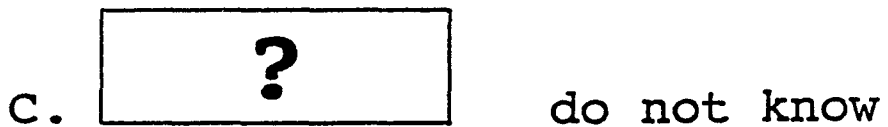
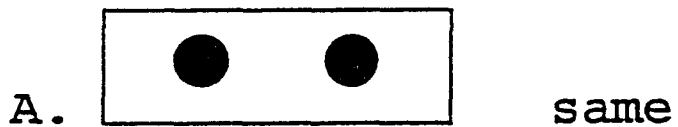
Grade Three

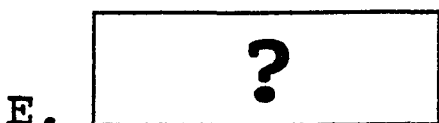
Melody, Form, and Harmony

Questions 1, 2, 3, and 4:



Questions 5, 6, 7, and 8:



Questions 9, 10, and 11:

do not know

Question 12:

- A. China
- B. Native American
- C. Church
- D. Country
- E. ? do not know

Question 13:

- A. Africa
- B. Japan
- C. Church
- D. Rock
- E. ? do not know

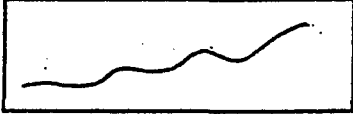
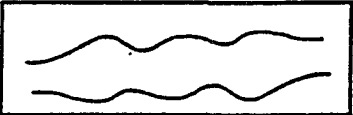
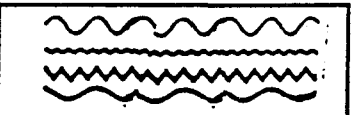
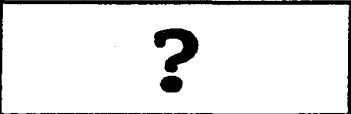
Question 14:

- A. Church
- B. Children's Play Song
- C. Africa
- D. Cowboy
- E. ? do not know




Question 15:

- A. Jazz
- B. Japan
- C. Work Song
- D. Bluegrass
- E. ? do not know





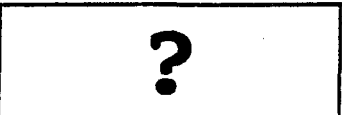
Questions 16, 17, and 18:

- A.  melody only
- B.  two melodies
- C.  melody and harmony
- D.  do not know

Question 19:

- A.  mostly high
- B.  mostly low
- C.  do not know

Questions 20 through 25:

- A.  leaps up
- B.  leaps down
- C.  steps up
- D.  steps down
- E.  do not know

End of Test

TEST TRANSCRIPT: GRADE THREE, SUBTEST TWO

RHYTHM, TIMBRE, EXPRESSIVE QUALITIES

You are getting ready to take a music test. Please write your name on the answer sheet. Do not write in the test booklet. (PAUSE FOR 20 SECONDS).

Write today's date on your answer sheet. Your teacher has written the date for you to copy. (PAUSE FOR 10 SECONDS).

Look at your answer sheet. Turn the answer sheet so that number one is at the top. Beside number one you see letters A-B-C-D-and E. Each letter has brackets around it. To answer questions, fill in the brackets over the letter with a number two pencil, like this. (HOLD UP POSTER SHOWING HOW TO FILL IN ANSWER BLOCK). If you erase, be sure to erase completely. Do not make stray marks on your answer sheet. You should have two number two pencils sharpened at your desk.

Please open your test booklet.

Questions one through three will use the same answer block. Beside letter A is a box with four marks in it. Beside letter B is a box with no marks in it. Beside letter C is a box with a question mark in it. Sometimes the music that we hear has a beat. Sometimes it doesn't. In the first three questions you will listen to music and decide if it has a beat, or if it does not have a beat. If you decide that the music has a beat, mark letter A on your answer sheet. If you decide that

the music has no beat, mark letter B on your answer sheet. If you do not know, mark letter C on your answer sheet.

Get ready to answer question number one. Listen to the music. Decide if it has a beat or if it has no beat. (MUSIC PLAYS: "Children's Symphony" by McDonald, *Music*, Holt, Rinehart, and Winston, 1988, Grade One, Record 1, Side 1, Band 2). Answer question one now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number two. Listen to the music and decide if it has a beat or if it has no beat. (MUSIC PLAYS: excerpt from "Andante" from *Symphony No. 94* by F. J. Haydn, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side A, Band 2). Answer question two now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number three. Listen to the music. Decide if it has a beat or not beat. (MUSIC PLAYS: excerpt from *Sinfonia* by Berio, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side A, Band 7[2]). Answer question three now. (PAUSE FOR 5 SECONDS).

Move to the next answer block, questions four through six. Beside letter A is a box with four marks in it for a steady beat. Beside letter B is a box with a squiggly line with bumps changing from far apart to close together for a changing beat. Beside letter C is a box with no marks in it for no beat. Beside letter D is a box with a question mark if you do not know the answer. In questions four, five, and six you will listen to music and decide if the music has a beat, has a changing beat, or has no beat. If the music has a beat, mark letter A. If the

music has a changing beat, mark letter BA. If the music has no beat, mark letter C. If you do not know, mark letter D.

Get ready to answer question number four. Listen to the music and decide if the music has a beat, has a changing beat, or has no beat. (MUSIC PLAYS: excerpt from "The Banshee" by Henry Cowell, *Music*, Holt, Rinehart, and Winston, 1988, Grade Three, Record 8, Side A, Band 5). Answer question number four now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number five. Listen to the music and decide if it has a beat, has a changing beat, or has no beat. (MUSIC PLAYS: excerpt from "Dueling Banjos" by Weissburg, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 5, Side A, Band 1[2]). Answer question number five now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number six. Listen to the music and decide if the music has a beat, has a changing beat, or has no beat. (MUSIC PLAYS: excerpt from "March Militaire," by Franz Schubert, *World of Music*, Silver Burdett, and Ginn, 1988, Grade Five, Record 7, Side A, Band 4[6]). Answer question six now. (PAUSE FOR 5 SECONDS).

Move to the next answer block which you will use for questions seven and eight. In the box beside letter A you see marks that are described as long, long, short-short, long, or ta-ta-ti-ti-ta-. In the box beside letter B you see marks that are described as short, short, short, short, short, short, long, or ti-ti-ti-ti-ti-ta-.

In the box beside letter C are four marks that are described as long, long, long, long, or ta-ta-ta-ta-. In the box beside letter D are marks that are described as short, short, long, short, short, long, or ti-ti-ta-ti-ti-ta-. In the box beside letter E is a question mark. Listen to the rhythm patterns. Decide which pattern you hear. If you do not know, mark answer E.

Get ready to answer question number seven. Listen to the pattern and decide which pattern that you hear.

Pattern:



Answer question seven now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number eight. Listen to the pattern and decide which pattern you hear.

Pattern:



Answer question eight now. (PAUSE FOR 5 SECONDS).

Move to the next answer block which you will use for questions nine and ten. In the box beside letter A you see notes. The first two notes are quarter notes, which are equal to the beat. The notes that are hooked together with a beam are eighth notes which are faster than the beat. The pattern in letter A is ta-ta-ti-ti-ta-. The pattern in the box beside letter B is ti-ti-ti-ti-ti-ta-. The pattern in the box beside letter C is ta-ta-ta-ta-. The pattern in the box beside letter D

is ti-ti-ta-ti-ti-ta—. The question mark in the box beside letter E shows that you do not know the answer.

Get ready to answer question number nine. Listen to the pattern and decide which pattern on your answer sheet matches what you hear.

Pattern:



Answer question number nine now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number ten. Listen to the pattern and decide which pattern on your answer sheet matches what you hear.

Pattern:



Answer question number ten now. (PAUSE FOR 5 SECONDS).

Move to the next answer block which you will use for questions eleven, twelve, and thirteen. In the box beside letter A you see a box that has two shapes that are the same—two circles. In the box beside letter B you see a box that has two shapes that are different, a circle and a rectangle. In the box beside letter C is a question mark. Sometimes in music the rhythm patterns are the same, and sometimes the rhythm patterns are different from each other. In questions eleven, twelve, and thirteen you listen to two rhythm patterns. Decide if they are the same or if they are different from each other.

Get ready to answer question number eleven. Listen to the music and decide if the two patterns that you hear are the same or if they are different.

Pattern 1:



Pattern 2:



Answer question number eleven now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number twelve. Listen to the music. Decide if the two patterns that you hear are the same or if they are different.

Pattern 1:



Pattern 2:



Answer question number twelve now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number thirteen. Listen to the music. Decide if two patterns that you hear are the same or if they are different.

Pattern 1:



Pattern 2:



Answer question number thirteen now. (PAUSE FOR 5 SECONDS).

Move to the next answer block which you will use for questions fourteen, fifteen, and sixteen. In the box beside letter A are two rectangles for music that moves in twos, like this. (MUSIC PLAYS: excerpt from "The Stars and Stripes

Forever" by J. P. Sousa, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 6, Side B, Band 9). In the box beside letter B are three rectangles for music that moves in threes, like this. (MUSIC PLAYS: excerpt from "Carillon" from *L'Arlesienne Suite* by G. Bizet, *World of Music*, Silver Burdett and Ginn, 1988, Grade Five, Record 7, Side B, Band 1). Beside letter C is a box with two rectangles, a dotted line, and three rectangles—five rectangles in all for music that moves in a combination of twos and threes, like this. (MUSIC PLAYS: excerpt from "Take Five" by Dave Brubeck, Columbia Records, CL9284). Beside letter D is a box with a question mark in it if you do not know the answer. In questions number fourteen, fifteen, and sixteen, you will listen to music and decide if the music moves in twos, moves in threes, or a combination of twos and threes.

Get ready to answer question number fourteen. Listen to the music and decide if it moves in twos, moves in threes, or a combination of twos and threes. (MUSIC PLAYS: excerpt from "Minuet" from *Royal Fireworks Music* by G. F. Handel, *World of Music*, Silver Burdett and Ginn, 1988, Grade Five, Record 7, Side A, Band 4[5])). Answer question number fourteen now. (PAUSE FOR 5 SECONDS).

Get ready to answer question fifteen. Listen to the music. Decide if it moves in twos, moves in threes, or a combination of twos and threes. (MUSIC PLAYS: excerpt from "Dance of the Reed Pipes," from *The Nutcracker Suite* by P. Tchaikovsky, *World of Music*, Silver Burdett and Ginn, 1988, Grade Five, Record 7, Side B, Band 1). Answer question fifteen now. (PAUSE FOR 5 SECONDS).

Get ready to answer question sixteen. Listen to the music. Decide if it moves in twos, moves in threes, or a combination of twos and threes. (MUSIC PLAYS: excerpt from "Unsquare Dance" by D. Brubeck, *Music*, Holt, Rinehart, and Winston, 1988, Grade Four, Record 4, Side A, Band 5). Answer question sixteen now. (PAUSE FOR 5 SECONDS).

Move to the next answer block which you will use for questions seventeen, eighteen, and nineteen. In the box beside letter A is a sign that means to get louder—the lines get farther apart. In the box beside letter B is a sign that means to get softer—the lines get closer together. In the box beside letter C are two signs for get louder then softer. In the box beside letter D is a question mark that means that you do not know the answer. In questions number seventeen, eighteen, and nineteen, you will listen to music and decide if it gets louder, softer, or both.

Get ready to answer question seventeen. Listen to the music. Decide if it gets louder, softer, or both. (MUSIC PLAYS: excerpt from "Turkish March" by L. Beethoven, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side B, Band 2[5]). Answer question seventeen now. (PAUSE FOR 5 SECONDS).

Get ready to answer question eighteen. Listen to the music. Decide if it gets louder or if it gets softer or both. (MUSIC PLAYS: excerpt from "Love for Three Oranges" by S. Prokofiev, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side B, Band 9). Answer question number eighteen now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number nineteen. Listen to the music.

Decide if it gets louder or softer or both. (MUSIC PLAYS: excerpt from "March Militaire" by F. Schubert, *World of Music*, Silver Burdett and Ginn, Grade One, Record 4, Side B, Band 10.). Answer question number nineteen now. (PAUSE FOR 5 SECONDS).

Move to the next answer block which you will use for questions twenty, twenty-one, and twenty-two. In the box beside letter A is a squiggly line with bumps that start far apart and then get closer together to represent music that gets faster. In the box beside letter B is a squiggly line with bumps that are close together and then get farther apart to represent music that gets slower. In the box beside letter C is a question mark that means that you do not know the answer. In questions twenty, twenty-one, and twenty-two, you will listen to music and decide if the music gets faster or gets slower.

Get ready to answer question number twenty. Listen to the music. Decide if it gets faster or slower. (MUSIC PLAYS: excerpt from "Dueling Banjos" by Weissburg, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 5, Side A, Band 1[2]). Answer question twenty now. (PAUSE FOR 5 SECONDS).

Get ready to answer question twenty-one. Listen to the music. Decide if it gets faster or slower. (MUSIC PLAYS: excerpt from *Concerto in E flat major* by J. N. Hummel, Music Heritage Society, 1983). Answer question twenty-one now. (PAUSE FOR 5 SECONDS).

Get ready to answer number twenty-two. Listen to the music. Decide if it gets faster or slower. (MUSIC PLAYS: excerpt from "Turkish March" by L. Beethoven, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side B, Band 2[5]). Answer question twenty-two now. (PAUSE FOR 5 SECONDS).

Move to the next block of answers which you will use for questions number twenty-three, twenty-four, and twenty-five. In the box beside letter A you see a picture of a trumpet. In the box beside letter B you see a picture of a piano. In the box beside letter C you see a picture of a clarinet. In the box beside letter D you see a violin. In the box beside letter E there is a question mark. In questions twenty-three, twenty-four, and twenty-five you will listen to music and decide which instrument you hear playing.

Get ready to answer question number twenty-three. Listen to the music. Decide which instrument you hear. (MUSIC PLAYS: excerpt from *Concerto in E flat major* by J. N. Hummel, Music Heritage Society, 1983). Answer question number twenty-three now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number twenty-four. Listen to the music and decide which instrument you hear. (MUSIC PLAYS: excerpt from "The Happy Farmer" from *Album for the Young* by R. Schumann, *World of Music*, Silver Burdett and Ginn, 1988, Grade Three, Record 6, Side A, Band 7[6]). Answer question number twenty-four now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number twenty-five. Listen to the music and decide which instrument you hear. (MUSIC PLAYS: excerpt from *Concerto for Violin and Orchestra in E minor, Op. 64*, by F. Mendelssohn, from *Music: An Appreciation*, McGraw-Hill, 1989). Answer question twenty-five now. (PAUSE FOR 5 SECONDS).

This is the end of the test. Please close your test booklets. Put your answer sheet on top of your test booklet and remain seated until your teacher has taken up all test booklets and answer sheets.

(TIME: 25 minutes, 29 seconds).




ANSWER KEY

1. A	6. A	11. B	16. C	21. B
2. A	7. B	12. A	17. A	22. A
3. B	8. C	13. B	18. C	23. A
4. C	9. B	14. B	19. C	24. B
5. B	10. D	15. A	20. A	25. D


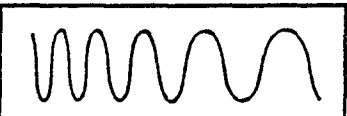

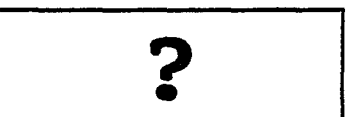
Note: Items 1-25 in Subtest Two transcript and answer key are items 26-50 in the Total Test analysis, discussion, and revision recommendations.

Test Booklet
Grade Three
Rhythm, Timbre,
and
Expressive Qualities

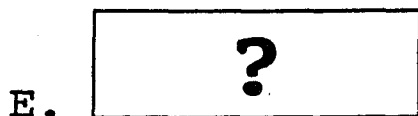
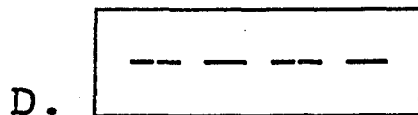
Questions 1, 2, and 3:

- A.  beat
- B.  no beat
- C.  do not know

Questions 4, 5 and 6:

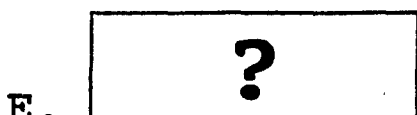
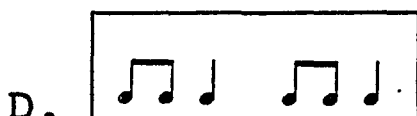
- A.  steady beat
- B.  changing beat
- C.  no beat
- D.  do not know

Questions 7 and 8:






do not know

Questions 9 and 10:




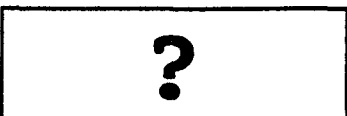


do not know


Questions 11, 12, and 13:


- A.  same
- B.  different
- C.  do not know

Questions 14, 15 and 16:

- A.  twos
- B.  threes
- C.  twos and threes
- D.  do not know

Questions 17 and 19:

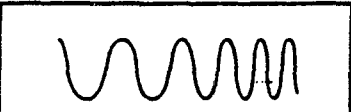
A.  gets louder

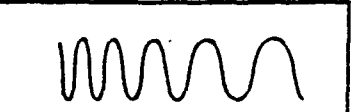
B.  gets softer

C.  gets louder/softer

D.  do not know

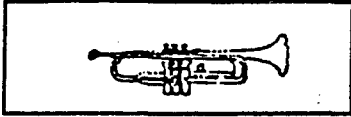


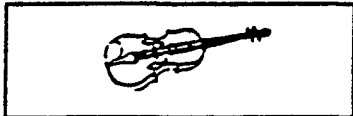
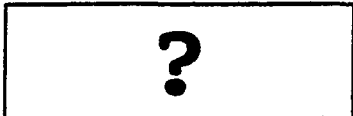
Questions 20, 21, and 22:

A.  gets faster

B.  gets slower

C.  do not know

Questions 23, 24, and 25:

- A.  trumpet
- B.  piano
- C.  clarinet
- D.  violin
- E.  do not know

End of Test

APPENDIX G

TEST TRANSCRIPTS, TEST BOOKLETS, AND ANSWER KEYS
GRADE FOUR

TEST TRANSCRIPT: GRADE FOUR, SUBTEST ONE

MELODY, FORM, HARMONY

You are getting ready to take a music test. Please write your name on the answer sheet. Do not write in the test booklet. (PAUSE FOR 20 SECONDS).

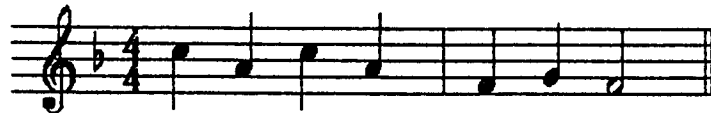
Write today's date on your answer sheet. Your teacher has written the date for you to copy. (PAUSE FOR 10 SECONDS).

Look at your answer sheet. Turn the answer sheet so that number one is at the top. Beside number one you see letters A-B-C-D-and-E. Each letter has brackets on each side of it. To answer the questions, fill in the brackets over the letter with a number two pencil, like this. (HOLD UP POSTER SHOWING HOW TO FILL IN ANSWER BLOCK). If you erase, be sure to erase completely. Do not make stray marks on your answer sheet. You should have two sharpened number two pencils at your desk.

Please open your test booklet.

Questions one through three will use the same answer block. Beside letter A is the word "same" for two melody patterns that are the same, like this:

Melody 1:



Melody 2:



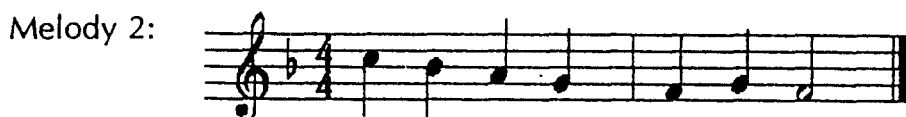
Beside letter B is the word "different" for two melody patterns that are different,

like this:



Beside letter C are the words "almost the same" for two melody patterns that are

almost the same, like this:



Beside letter D is a question mark to show that you do not know the answer. In

questions one through four, listen to two melody patterns and decide if they are

the same, different, or almost the same. Get ready for question one.



Answer question number one now. (PAUSE FOR 5 SECONDS).

Get ready for question number two.



Answer question number two now. (PAUSE FOR 5 SECONDS).

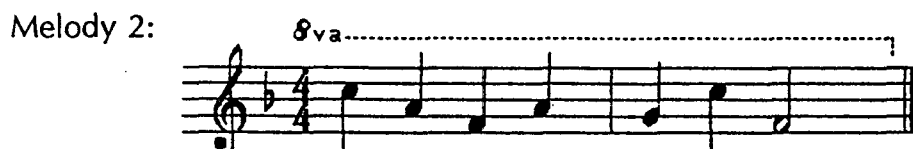
Get ready for question number three.



Answer question number three now. (PAUSE FOR 5 SECONDS).

Sometime the sounds that we hear are mostly high sounds. Sometimes the sounds are mostly low sounds. Listen to two melodies, one high, one low.

Answer if they are the same, different, or almost the same.



Answer question four now. (PAUSE FOR 5 SECONDS).

Move to the next answer block which you will use for questions five and six. Beside letter A is notation that steps up. Beside letter B is notation that steps

down. Beside letter C is notation that skips up. Beside letter D is notation that skips down. The question mark beside letter E shows that you do not know the answer. In questions five and six you will listen to a five-note melody and decide which notation matches what you hear. Get ready for question five.



Answer question five now. (PAUSE FOR 5 SECONDS).

Get ready to answer question six.



Answer question six now. (PAUSE FOR 5 SECONDS).

Move to the next answer block. Letters A, B, C, and D have four measures of notation. In questions seven through ten you will listen to a melody and decide which pattern matches what you hear. The question mark beside letter E shows that you do not know the answer.

Get ready to answer question seven.



Answer question seven now. (PAUSE FOR 5 SECONDS)

Get ready to answer question eight.



Answer question eight. (PAUSE FOR 5 SECONDS).

Get ready to answer question nine.



Answer question nine now. (PAUSE FOR 5 SECONDS).

Get ready to answer question ten.



Answer question ten now. (PAUSE FOR 5 SECONDS).

Move to the next answer block which you will use to answer questions eleven through eighteen. A musical piece may be made up of sections that are alike or different. Beside letter A are four shapes—two circles, a circle, a rectangle, and another circle representing musical form A-A-B-A. Beside letter B are three shapes—a circle, a rectangle, and another circle representing musical form A-B-A. Beside letter C are four shapes—two circles, two rectangles representing musical form A-A-B-B. Beside letter D are three shapes, in this order—a circle, a rectangle, a circle, a triangle, and a circle for musical form A-B-A-C-A. In the next eight questions, you will listen to a piece of music and decide how the sections are put together.

Get ready to answer question eleven.





Answer question eleven now. (PAUSE FOR 5 SECONDS).

Get ready for question twelve.



Answer question twelve now. (PAUSE FOR 5 SECONDS).

Get ready for question thirteen.



Answer question thirteen now. (PAUSE FOR 5 SECONDS).

Get ready for question fourteen.



Answer question fourteen now. (PAUSE FOR 5 SECONDS).

Get ready for question fifteen.



Answer question fifteen now. (PAUSE FOR 5 SECONDS).

Get ready for question sixteen.



Answer question sixteen now. (PAUSE FOR 5 SECONDS).

Get ready for question seventeen.

The image shows six staves of musical notation in 4/4 time, G major. The notes are: Staff 1: G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4. Staff 2: G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4. Staff 3: G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4. Staff 4: G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4. Staff 5: G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4. Staff 6: G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4.

Answer question seventeen now. (PAUSE FOR 5 SECONDS).

Get ready for question eighteen.

The image shows two staves of musical notation in 4/4 time, G major. The notes are: Staff 1: G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4. Staff 2: G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4.



Answer question eighteen now. (PAUSE FOR 5 SECONDS).

Move to the next answer block for questions nineteen through twenty-five. Beside letter A are the words "melody only," beside letter B, "melody and counter-melody," beside letter C, "melody and accompaniment," beside letter D "round," beside letter E, question mark. In the next seven questions, listen to music and decide which answer describes what you hear. Get ready for question nineteen. (MUSIC PLAYS: excerpt from "Minuet No. 8" from *First Lessons in Bach* by J. S. Bach, Schirmer Library, Vol. 1436, p. 11, m. 1-8).

Answer question nineteen now. (PAUSE FOR 5 SECONDS).

Get ready for question twenty. (MUSIC PLAYS: excerpt from "Minuet No. 7" from *First Lessons in Bach* by J. S. Bach, Schirmer Library, Vol. 1436, p. 10, m. 1-8, treble clef). Answer question twenty now. (PAUSE FOR 5 SECONDS).

Get ready for question twenty-one. (MUSIC PLAYS: excerpt from Sonata No. 5 by W. A. Mozart, Schirmer Library, Vol. 1304, p. 62, m. 1-8). Answer question twenty-one now. (PAUSE FOR 5 SECONDS).

Answer question twenty-one now. (PAUSE FOR 5 SECONDS).

Get ready to answer question twenty-two. (MUSIC PLAYS: excerpt from "Alleluia" by P. Hayes, two-part round, Silver Burdett, *Making Music Your Own*, 1965, Grade Eight, p. 63). Answer question twenty-two now. (PAUSE FOR 5 SECONDS).

Get ready to answer question twenty-three. (MUSIC PLAYS: "When Johnny Comes Marching Home," *Music*, Holt, Rinehart, and Winston, 1988, Grade Six, p. 44, melody and chords). Answer question twenty-three now. (PAUSE FOR 5 SECONDS).

Get ready to answer question twenty-four. (MUSIC PLAYS: excerpt from "Minuet No. 6" from *First Lessons in Bach* by J. S. Bach, Schirmer Library, Vol. 1436, p. 9, m. 1-8. Answer question twenty-four now. (PAUSE FOR 5 SECONDS). Answer question twenty-four now. (PAUSE FOR 5 SECONDS).

Get ready to answer question twenty-five. (MUSIC PLAYS: "Tramping," *Music*, Holt, Rinehart, and Winston, 1988, Grade Two, p. 72, melody and chords). Answer question twenty-five now.

This is the end of the test. Please close your test booklet. Put your answer sheet on top of your test booklet. Remain in your seat until all test booklets and answer sheets have been collected.

(TIME: 23 minutes, 24 seconds)

ANSWER KEY

1. B	6. B	11. A	16. C	21. C
2. C	7. C	12. C	17. A	22. D
3. C	8. B	13. B	18. C	23. C
4. A	9. A	14. D	19. B	24. A
5. C	10. D	15. B	20. A	25. C

Test Booklet

Grade Four

Melody, Form, and Harmony

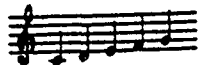
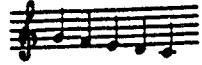
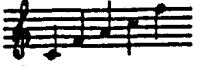
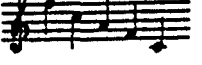
Questions 1, 2, and 3:

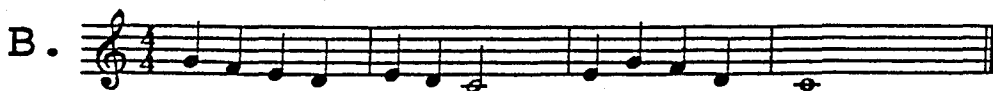
- A. same
- B. different
- C. almost the same
- D. ? do not know

Question 4:

- A. same
- B. different
- C. ? do not know

Questions 5 and 6:





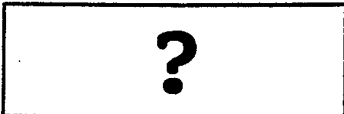
- A. steps up 
- B. steps down 
- C. skips up 
- D. skips down 
- E. ? do not know

Questions 7, 8, 9, and 10:

E. ? do not know

Continue to Next Page

Questions 11 through 18:

- | | | |
|----|---|-------------|
| A. |  | A A B A |
| B. |  | A B A |
| C. |  | A A B B |
| D. |  | A B A C A |
| E. |  | do not know |

Questions 19 through 25:

- A. melody only
- B. melody and countermelody
- C. melody and accompaniment
- D. round
- E. ? do not know

End of Test

TEST TRANSCRIPT: GRADE FOUR, SUBTEST TWO
RHYTHM, TIMBRE, EXPRESSIVE QUALITIES

You are getting ready to take a music test. Please write your name on the answer sheet. Do not write in the test booklet. (PAUSE FOR 20 SECONDS). Write today's date on your answer sheet. Your teacher has written the date for you to copy. (PAUSE FOR 10 SECONDS).

Look at your answer sheet. Turn the answer sheet so that number one is at the top. Beside number one you see letters A-B-C-D-and-E. Each letter has brackets on each side of it. To answer the questions, fill in the brackets over the letter with a number two pencil, like this. (HOLD UP POSTER SHOWING HOW TO FILL IN ANSWER BLOCK). If you erase, be sure to erase completely. Do not make stray marks on your answer sheet. You should have two number two sharpened pencils at your desk.

Please open your test booklet.

Questions one and two will use the same answer block. Beside letter A is a box with four marks in it for music that has a steady beat like this. (MUSIC PLAYS: excerpt from "Stars and Stripes Forever" by J. P. Sousa, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 6, Side B, Band 9). Beside letter B is a box with no marks in it for music that has no beat, like this. (MUSIC

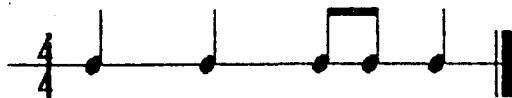
PLAYS: excerpt from "Brontosaurus" by C. Bahn and K. Hahn, *Music*, Holt, Rinehart, and Winston, 1988, Grade Two, Record 7, Side B, Band 7). Beside letter C is a box with a squiggly line in it with the bumps starting far apart and getting closer together for music that gets faster, like this. (MUSIC PLAYS: excerpt from "Turkish March" by L. Beethoven, *World of Music*, Silver Burdett and Ginn, 1988, Grade Four, Record 2, Side A, Band 3). Beside letter D is a box with a squiggly line in it with the bumps starting close together and getting farther apart for music that gets slower, like this. (MUSIC PLAYS: excerpt from "Kangaroos" from *Carnival of the Animals* by Camille Saint-Saëns, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 5, Side A, Band 2). Letter E has a question mark in it to show that you do not know the answer.

Get ready for question number one. Listen to the music. Decide if it has a steady beat, no beat, or a changing beat. (MUSIC PLAYS: excerpt from "Dueling Banjos" by R. Weissburg, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 5, Side A, Band 1[2]). Answer question number one now. (PAUSE FOR 5 SECONDS).

Get ready for question number two. Listen to the music and decide if it has a steady beat, a changing beat, or no beat. (MUSIC PLAYS: excerpt from "Minuet" from *Royal Fireworks Music* by G. F. Handel, *World of Music*, Silver Burdett and Ginn, 1988, Grade Five, Record 7, Side A, Band 4[5]). Answer question number two now. (PAUSE FOR 5 SECONDS).

Move to the next answer block. You will use this answer block for questions numbers three and four. In the box beside letter A you see a box that has two shapes that are the same—two circles for rhythm patterns that are the same, like this.

Pattern 1:



Pattern 2:



In the box beside letter B you see a box that has two shapes that are different, a circle and a rectangle for patterns that are different, like this.

Pattern 1:



Pattern 2:



In the box beside letter C is a question mark to show that you do not know. In questions three and four, you will listen to two rhythm patterns and decide if they are the same or different. If they are the same, mark letter A; if they are different, mark letter B. If you do not know, mark letter C on your answer sheet.

Get ready to answer question number three. Listen to two patterns.

Decide if they are the same or different.

Pattern 1:



Pattern 2:



Answer question number three now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number four. Listen to two patterns. Decide if they are the same or different.

Pattern 1:



Pattern 2:



Answer question number four now. (PAUSE FOR 5 SECONDS).

Move to the next answer block for questions five, six, seven, and eight. In the boxes beside the letters are music notes. The quarter notes are equal to the beat. The eighth notes are faster than the beat. The triplet figure (three eighth notes together with the number three above them) means that there are three sounds to the beat. In questions five, six, seven, and eight you will hear a rhythm pattern played. Decide which box holds notation that matches what you hear. If you do not know, select letter E, the question mark.

Get ready for question number five. Listen. Decide which rhythm pattern you hear.



Answer question number five now. (PAUSE FOR 5 SECONDS).

Get ready for question number six. Listen. Decide which pattern you hear.



Answer question number six now. (PAUSE FOR 5 SECONDS).

Get ready for question number seven. Listen. Decide which pattern you hear.



Answer question number seven now. (PAUSE FOR 5 SECONDS).

Get ready for question number eight. Listen. Decide which rhythm pattern you hear.



Answer question number eight now. (PAUSE FOR 5 SECONDS).

Move to the next answer block for questions nine, ten, and eleven. In the box beside letter A are two rectangles, representing music that moves in twos, like this. (MUSIC PLAYS: excerpt from "Sabre Dance" by A. Kachaturian, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 5, Side A, Band 2[3]. In the box beside letter B are three rectangles, representing music that moves in threes, like this. (MUSIC PLAYS: excerpt from "Minuet" from *Royal Fireworks Music* by G. F. Handel, *World of Music*, Silver Burdett and Ginn, 1988, Grade Five, Record 7, Side A, Band 2). In the box beside letter C are two rectangles, a dotted line, and three more rectangles representing music which combines twos and threes, like this. (MUSIC PLAYS: excerpt from "Unsquare Dance" by D.

Brubeck, *Music*, Holt, Rinehart, and Winston, 1988, Grade Four, Record 4, Side A, Band 5). In the box beside letter D is a box with a question mark to show that you do not know the answer. In questions nine, ten, and eleven, you will listen to music and decide if it moves in twos, three, or a combination of two and three.

Get ready to answer question number nine. Listen to the music and decide if it moves in twos, threes, or a combination of twos and threes. (MUSIC PLAYS: excerpt from "Love for Three Oranges" by S. Prokofiev, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side B, Band 9). Answer question number nine now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number ten. Listen to the music and decide if it moves in twos, threes, or a combination of twos and threes. (MUSIC PLAYS: excerpt from "Waltz in A flat Major" by J. Brahms, *World of Music*, Silver Burdett and Ginn, 1988, Grade Five, Record 7, Side A, Band 4[2]). Answer question number ten now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number eleven. Listen to the music and decide if it moves in twos, threes, or a combination of twos and threes. (MUSIC PLAYS: excerpt from "Minuet" from *Royal Fireworks Music* by G. F. Handel, *World of Music*, Silver Burdett and Ginn, 1988, Grade Five, Record 7, Side A, Band 4[5]).

Move to the next answer block for questions number twelve, thirteen, and fourteen. In the box beside letter A is an *f*, the symbol for music that is loud, like this. (MUSIC PLAYS: excerpt from "Sabre Dance" by A. Kachaturian, *World of*

Music, Silver Burdett and Ginn, 1988, Grade Two, Record 5, Side A, Band 1). In the box beside letter B is a *p* the symbol for music that is soft, like this. (MUSIC PLAYS: excerpt from "The Fairy Garden" by Maurice Ravel, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 5, Side A, Band 1). In the box beside letter C is a symbol that means the music is getting louder, like this. (MUSIC PLAYS: excerpt from "March to the Scaffold" from *Symphonie Fantastique* by Hector Berlioz, *Music: An Appreciation*, McGraw-Hill, 1989). In the box beside letter D is a symbol that means the music is getting softer, like this. (MUSIC PLAYS: excerpt from "The Moldau" from *Ma Vlast* by B. Smetana, from *Music: An Appreciation*, McGraw-Hill, 1989). In the box beside letter E is a question mark, indicating that you do not know the answer. In questions twelve, thirteen, and fourteen you will listen to music and decide if it is loud, soft, getting louder or getting softer.

Get ready to answer question number twelve. (MUSIC PLAYS: excerpt from "Putnam's Camp, Redding, Connecticut" from *Three Places in New England*, by C. Ives, *Music: An Appreciation*, McGraw-Hill, 1989). Answer number twelve now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number thirteen. Listen to the music. Decide if it is loud, soft, getting louder, or getting softer. (MUSIC PLAYS: excerpt from "Theme and Variations on Simple Gifts" from *Appalachian Spring* by A. Copland, *Music: An Appreciation*, McGraw-Hill, 1989). Answer question number thirteen now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number fourteen. Listen to the music and decide if it is loud, soft, getting louder, or getting softer. (MUSIC PLAYS: excerpt from "The Moldau" from *Ma Vlast* by B. Smetana, *Music: An Appreciation*, McGraw-Hill, 1989). Answer question number fourteen now. (PAUSE FOR 5 SECONDS).

Get ready to answer question fifteen. Listen to the music and decide if it is fast, slow, getting faster, or getting slower. (MUSIC PLAYS: excerpt from "Turkish March" by L. Beethoven, *World of Music*, Silver Burdett and Ginn, 1988, Grade Four, Record 4, Side B, Band 2). Answer number sixteen now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number seventeen. Listen to the music and decide if it is fast, slow, getting faster, or getting slower. (MUSIC PLAYS: excerpt from "Can-Can" from *Gaite Parisienne* by J. Offenbach, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side A, Band 9[4]). Answer number seventeen now. (PAUSE FOR 5 SECONDS).

Move to the next answer block for questions eighteen, nineteen, and twenty. Letter A is Japanese music. Letter B is Gospel music. Letter C is Jazz. Letter D is African. In questions eighteen, nineteen, and twenty you will listen to music and decide what style of music you hear or from which country the music comes. If you do not know the answer, mark letter E.

Get ready to answer question number eighteen. Listen to the music and decide what style or country is represented. (MUSIC PLAYS: excerpt from

"Gangele Song" from Angola, Folkways Records, *Music: An Appreciation*, McGraw-Hill, 1989). Answer question number eighteen now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number nineteen. Listen to the music and decide what style or country is represented in the music you hear. (MUSIC PLAYS: excerpt from "Godan Ginuta" by Mitsuzaki Kengyo, Everest Record Group, *Music: An Appreciation*, McGraw-Hill, 1989). Answer question number nineteen now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number twenty. Listen to the music and decide what style or what country is represented. (MUSIC PLAYS: excerpt from "Concerto for Cootie" by Duke Ellington on *Music: An Appreciation*, McGraw-Hill, 1989). Answer question twenty now. (PAUSE FOR 5 SECONDS).

Move to the next answer block for questions number twenty-one, twenty-two, and twenty-three. Instruments are named in the answer choices: Letter A is a trumpet. Letter B is a violin. Letter C is a clarinet. Letter D is a piano. Letter E is a question mark for you to mark if you do not know the answer. In questions twenty-one, twenty-two, and twenty-three, you will listen to music and decide which instrument you hear. If you do not know, mark letter E on your answer sheet.

Get ready for question number twenty-one. Listen to the music and decide which instrument you hear. (MUSIC PLAYS: excerpt from "The Happy Farmer" from *Album for the Young* by Robert Schumann, *World of Music*, Silver Burdett

and Ginn, 1988, Grade Three, Record 6, Side A, Band 7[6]). Answer question number twenty-one now. (PAUSE FOR 5 SECONDS).

Get ready for question number twenty-two. Listen to the music and decide which instrument you hear. (MUSIC PLAYS: excerpt from *Concerto for Violin and Orchestra in E minor, Op. 64* by F. Mendelssohn, *Music: An Appreciation*, McGraw-Hill, 1989). Answer question number twenty-two now. (PAUSE FOR 5 SECONDS).

Get ready for question number twenty-three. Listen to the music and decide which instrument you hear. (MUSIC PLAYS: excerpt from *Concerto for Trumpet in E flat Major* by J. N. Hummel, Music Heritage Society, 1983). Answer question number twenty-three now. (PAUSE FOR 5 SECONDS).

Move to the next answer block. Instruments are named in the answer choices. Letter A is a guitar. Letter B is a piano. Letter C is a flute. Letter D is a trombone. Letter E is a question mark for you to mark if you do not know the answer. In questions twenty-four and twenty-five, you will listen to music and decide which instrument you hear.

Get ready for question number twenty-four. Listen to the music and decide which instrument you hear. (MUSIC PLAYS: excerpt from "Suite Number Two" from *Daphne and Chloë* by M. Ravel, Bowmar Records, 1965). Answer question number twenty-four now. (PAUSE FOR 5 SECONDS).

Get ready for question number twenty-five. Listen to the music and decide which instrument you hear. (MUSIC PLAYS: excerpt from "The Happy Farmer"

from *Album for the Young* by Robert Schumann, *World of Music*, Silver Burdett and Ginn, Grade One, Record 1, Side A, Band 4[2]). Answer question number twenty-five now. (PAUSE FOR 5 SECONDS).

This is the end of the test. Please close your test booklets. Put your answer sheet on top of your test booklet and remain seated until your teacher has taken up all test booklets and answer sheets.

(TIME: 23 minutes, 40 seconds).

ANSWER KEY

1. C	6. B	11. B	16. C	21. D
2. A	7. A	12. C	17. A	22. B
3. B	8. D	13. D	18. B	23. A
4. B	9. A	14. D	19. D	24. C
5. C	10. B	15. B	20. A	25. B

Note: Items 1-25 in Subtest Two transcript and answer key are items 26-50 in the Total Test analysis, discussion, and revision recommendations.

Test Booklet






Grade Four

Rhythm, Timbre,




and

Expressive Qualities

Questions 1 and 2:

- | | | |
|----|---|-------------|
| A. |  | steady beat |
| B. |  | no beat |
| C. |  | gets faster |
| D. |  | gets slower |
| E. |  | do not know |

Questions 3 and 4:

- | | | |
|----|---|-------------|
| A. |  | same |
| B. |  | different |
| C. |  | do not know |


Questions 5, 6, 7, and 8:

A. 

B. 

C. 

D. 

E. 

do not know

Questions 9, 10, and 11:

A. 


twos

B. 

threes

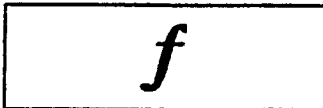
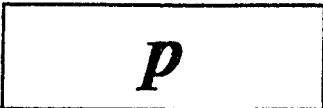
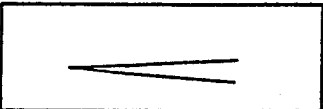
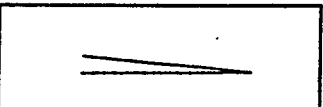
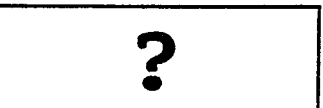
C. 

twos and threes


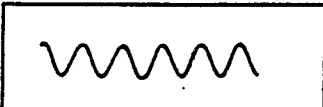
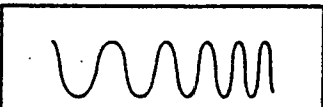
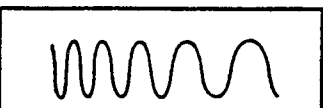
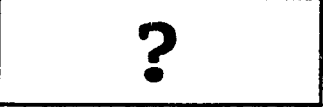
D. 

do not know

Questions 12, 13, and 14:

- A.  loud
- B.  soft
- C.  gets louder
- D.  gets softer
- E.  do not know

Questions 15, 16, and 17:

- A.  fast
- B.  slow
- C.  gets faster
- D.  gets slower
- E.  do not know

Questions 18, 19, and 20:

- A. Japanese
- B. Gospel
- C. Jazz
- D. African
- E. ? do not know

Questions 21, 22, and 23:

- A. trumpet
- B. violin
- C. clarinet
- D. piano
- E. ? do not know

Questions 24 and 25:

- A. guitar
- B. piano
- C. flute
- D. trombone
- E. ? do not know

End of Test

APPENDIX H
TEST TRANSCRIPTS, TEST BOOKLETS, AND ANSWER KEYS
GRADE FIVE

TEST TRANSCRIPT: GRADE FIVE, SUBTEST ONE

MELODY, FORM, HARMONY

You are getting ready to take a music test. Please write your name on the answer sheet. Do not write in the test booklet. (PAUSE FOR 20 SECONDS).

Write today's date on your answer sheet. Your teacher has written the date for you to copy. (PAUSE FOR 10 SECONDS).

Look at your answer sheet. Turn the answer sheet so that number one is at the top. Beside number one you see letters–A-B-C-D-and-E. Each letter has brackets on each side of it. To answer a question, fill in the brackets over a letter with a number two pencil, like this. (HOLD UP EXAMPLE). If you erase, be sure to erase completely. Do not make stray marks on your answer sheet. You should have two sharpened pencils at your desk.

Please open your test booklet.

The first answer block in your booklet will be used to answer questions one through three. Letter A is melody only. Letter B is melody and countermelody–two melodies. Letter C is melody and accompaniment–a melody with chords. Letter D is round–a melody that begins and is copied in other parts. Letter E, a question mark shows that you do not know the answer.

Get ready to answer question one. Listen. (MUSIC PLAYS: excerpt from "Minuet No. 2" from *First Lessons in Bach, Book 1* by J. S. Bach, Schirmer

Get ready to answer question one. Listen. (MUSIC PLAYS: excerpt from "Minuet No. 2" from *First Lessons in Bach, Book 1* by J. S. Bach, m. 9-16; treble and bass clef). Answer question number one. (PAUSE FOR 5 SECONDS).

Get ready to answer question two. Listen. (MUSIC PLAYS: "Allelulia" by Philip Hayes, two part round). Answer question number three.

Move to the next answer block for questions number four, five, and six. Beside letter A are the words "half-step up;" letter B—"whole step up;" letter C—"half step down;" letter D—"whole step down." The music that we hear is often built on a scale made up of whole steps and half steps. The first four tones of a major scale sound like this.

Keyboard:



Vocal:



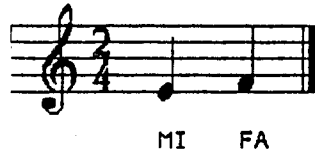
The whole step is from Do to Re, like this. Going up,



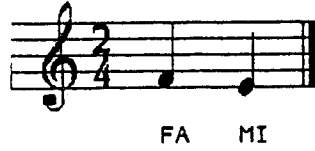
going down,



The half step is from MI to FA. Going up,



going down,



Get ready to answer question four. Listen.



Answer question four now. (PAUSE FOR 5 SECONDS).

Get ready to answer question five. Listen.



Answer question five now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number six. Listen.



Answer question six now. (PAUSE FOR 5 SECONDS).

Move to the next answer block. Letters A, B, C, and D have four measures of notation. In questions seven through nine you will listen to a melody and decide which pattern matches what you hear. The Question mark beside letter E shows that you do not know the answer.

Get ready to answer question number seven. Listen.



Answer question seven now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number eight. Listen.



Answer question eight now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number nine. Listen.



Answer question number nine now. (PAUSE FOR 5 SECONDS).

Move to the next answer block. In the boxes beside the letters are shapes to represent sections of music. Sometimes the sections are the same—circle, circle. Sometimes the sections are different—circle, rectangle. In the box beside letter A is a circle-rectangle-circle for form ABA. In the box beside letter B, circle-circle-rectangle-circle for form AABA. Beside letter C, circle-circle-rectangle, rectangle for form AABB. In the box beside letter D are four circles, each one a bit different from the other for Theme and Variations. Letter E is a question mark to show that you do not know the answer.

Get ready to answer question number ten. Listen.



Answer question ten now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number eleven. Listen.



Answer question eleven now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number twelve. Listen. (MUSIC PLAYS:

"Minuet No. 1" from *First Lessons in Bach*, Schirmer Library, Vol. 1406, p. 2,

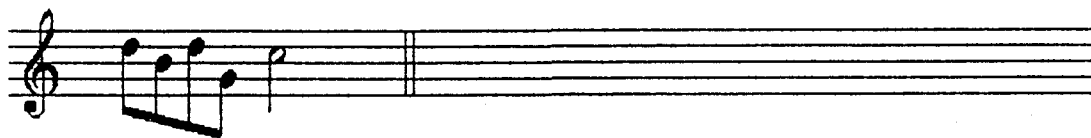
m. 1-8, m. 9-16, m. 1-8). Answer question twelve now. (PAUSE FOR 5

SECONDS).

Get ready to answer question number thirteen. Listen.



Variation I:



Variation II:



Variation III:



(Continue)

Variation IV:

The image shows two systems of musical notation for Variation IV. Each system consists of a treble clef staff and a bass clef staff. The first system shows a melody in the treble staff and a bass line in the bass staff. The second system continues the piece with similar notation.

Answer question thirteen now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number fourteen. Listen. (MUSIC PLAYS: "Minuet No. 3" from *First Lessons in Bach*, Schirmer Library, Vol. 1406, p. 6, m. 9-16, m. 9-16, m. 17-24, m. 17-24). Answer question fourteen now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number fifteen. Listen. (MUSIC PLAYS: "Minuet No. 6" from *First Lessons in Bach*, Schirmer Library, Vol. 1406, p. 9, m. 1-8, m. 9-16, m. 1-8. Answer question fifteen now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number sixteen. Listen. (MUSIC PLAYS: "Bye, Bye, Blackbird" in *Music*, Holt, Rinehart, and Winston, 1988, Grade 4, p. 24, m. 1-4, m. 1-4, m. 9-12, m. 1-4). Answer question sixteen now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number seventeen. Listen. (MUSIC PLAYS: "Coventry Carol" in *World of Music*, Silver Burdett and Ginn, 1988, Grade 5, p. 212, m. 1-8, m. 1-4). Answer question seventeen now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number eighteen. Listen. (MUSIC PLAYS: "Lift Every Voice and Sing" in *Exploring Music*, Holt, Rinehart, Winston, 1975, Grade 5, p. 164, m. 1-4, m. 1-4, m. 12-16, m. 1-4). Answer question eighteen now. (PAUSE FOR 5 SECONDS).

Move to the next answer block which you will use for questions nineteen, twenty, and twenty-one. Beside letter A is the statement "has a tonal center or home tone." Beside letter B is the statement "does not have a tonal center. Letter E is a question mark to show that you do not know the answer. Listen to the melodies and decide if there is or is not a tonal center.

Get ready for question number nineteen. Listen.



Answer question number nineteen now. (PAUSE FOR 5 SECONDS).

Get ready for question number twenty. Listen.



Answer question number twenty now. (PAUSE FOR 5 SECONDS).

Move to the next answer block for questions twenty-two, twenty-three, twenty-four, and twenty-five. The music that we hear that has a tonal center may be major in quality or minor in quality. Listen to a major scale.



Listen to a minor scale.



Listen to a major chord.



Listen to a minor chord.



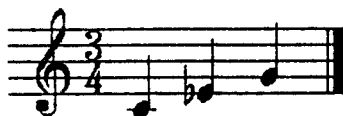
In the next four questions you will listen to a chord played two ways—three notes at a time and one note at a time. Decide if the chord is major or minor. If you do not know, answer letter C, the question mark.

Get ready for question number twenty-two. Listen.



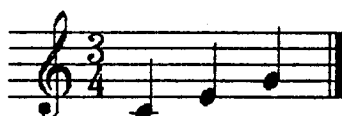
Answer question twenty-two now. (PAUSE FOR 5 SECONDS).

Get ready for question number twenty-three. Listen.



Answer question twenty-three now. (PAUSE FOR 5 SECONDS).

Get ready for question number twenty-four. Listen.



Answer question twenty-four now. (PAUSE FOR 5 SECONDS).

Get ready for question number twenty-five. Listen.



Answer question twenty-five now. (PAUSE FOR 5 SECONDS).

This is the end of the test. Please close your test booklet. Put your answer sheet on top of your test booklet. Remain in your seat until all test booklets and answer sheets have been collected.

(TIME: 23 minutes, 43 seconds)

ANSWER KEY

- | | | | | | | | | | |
|----|---|-----|---|-----|---|-----|---|-----|---|
| 1. | B | 6. | B | 11. | B | 16. | B | 21. | A |
| 2. | A | 7. | C | 12. | B | 17. | A | 22. | B |
| 3. | D | 8. | A | 13. | D | 18. | B | 23. | A |
| 4. | C | 9. | D | 14. | C | 19. | B | 24. | A |
| 5. | A | 10. | C | 15. | A | 20. | A | 25. | A |

Test Booklet

Grade Five

Melody, Form, and Harmony

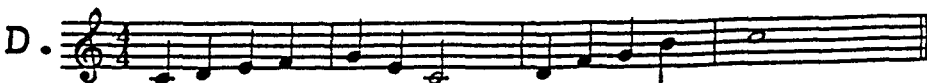
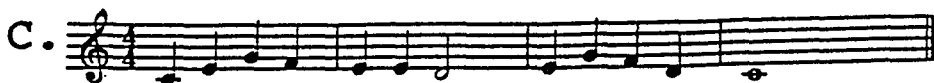
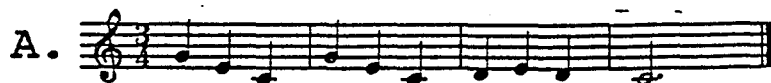
Questions 1, 2, and 3:

- A. melody only
- B. melody and countermelody
- C. melody and accompaniment
- D. round
- E. ? do not know

Questions 4, 5, and 6:




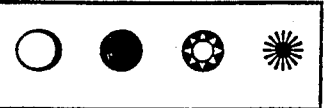

- A. half step up
- B. whole step up
- C. half step down
- D. whole step down
- E. ? do not know

Questions 7, 8, and 9:



- E. ? do not know

Questions 10 through 18:

- A.  A B A
- B.  A A B A
- C.  A A B B
- D.  Theme & Variation
- E.  do not know

Questions 19, 20, and 21:

- A. Has a tonal center
- B. Does not have a tonal center
- C. ? do not know

Questions 22, 23, 24, and 25:

- A. major
- B. minor
- C. ? do not know

End of Test

TEST TRANSCRIPT: GRADE FIVE, SUBTEST TWO
RHYTHM, TIMBRE, EXPRESSIVE QUALITIES

You are getting ready to take a music test. Please write your name on the answer sheet. Do not write in the test booklet. (PAUSE FOR 20 SECONDS).

Write today's date on your answer sheet. Your teacher has written the date for you to copy. (PAUSE FOR 10 SECONDS).

Look at your answer sheet. Turn the answer sheet so that number one is at the top. Beside number one you see letters—A-B-C-D-and-E. Each letter has brackets on each side of it. To answer a question, fill in the brackets over a letter with a number two pencil, like this. (HOLD UP EXAMPLE). If you erase, be sure to erase completely. Do not make stray marks on your answer sheet. You should have two sharpened pencils at your desk.

Please open your test booklet.

The first answer block in your booklet will be used to answer questions one through four. Beside each letter in the answer box there is a different kind of music note. You will be asked to identify the kind of note. Letter E is a question mark to show that you do not know the answer. Question one: On your answer sheet mark the letter of the whole note. (PAUSE FOR 5 SECONDS).

Question two: mark the letter of the eighth note. (PAUSE FOR 5 SECONDS).

Question three: mark the letter of the quarter note. (PAUSE FOR 5 SECONDS).

Question four: mark the letter of the half note. (PAUSE FOR 5 SECONDS).

Move to the next answer block for questions five, six, seven, and eight.

Letter A is the answer for music that moves in twos. Letter B is the answer for music that moves in threes. Letter C is the answer for music that moves in a combination of twos and threes. Letter D, a question mark, is the letter to mark if you do not know the answer.

In questions five, six, seven, and eight, you will listen to music and decide if it moves in twos, threes, or a combination of twos and threes. Get ready to answer question number five. Listen to the music. Decide if it moves in twos, threes, or a combination of twos and threes. (MUSIC PLAYS: excerpt from "Unsquare Dance" by Dave Brubeck, *Music*, Holt, Rinehart, and Winston, 1988, Grade Four, Record 4, Side A, Band 5). Please answer question number five. (PAUSE FOR 5 SECONDS).

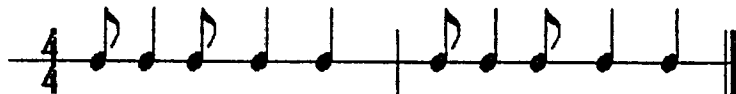
Get ready to answer question number six. Listen to the music. Decide how it moves. (MUSIC PLAYS: excerpt from *Brandenburg Concerto Number 5* by J. S. Bach, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side B, Band 9). Please answer question number six. (PAUSE FOR 5 SECONDS).

Get ready to answer question number seven. Listen to the music. Decide how it moves. (MUSIC PLAYS: excerpt from "Minuet" from *Royal Fireworks Music* by G. F. Handel, *World of Music*, Silver Burdett and Ginn, 1988, Grade Five, Record 7, Side A, Band 4[5]). Please answer question number seven. (PAUSE FOR 5 SECONDS).

Get ready to answer question number eight. Listen to the music. Decide how it moves. (MUSIC PLAYS: excerpt from "Waltz in A flat Major" by J. Brahms, *World of Music*, Silver Burdett and Ginn, 1988, Grade Five, Record 7, Side A, Band 4[2]). Please answer question number eight. (PAUSE FOR 5 SECONDS).

Move to the next answer block for questions nine through thirteen. Beside the letters are music notes. The quarter notes are equal to the beat. the eighth notes are faster than the beat. The triplet figure in letter A means that there are three eighth notes to a beat. The half note is slower than the beat. In the next five questions you will listen to a rhythm pattern and decide which box holds notation that matches what you hear. If you do not know, select letter E, the question mark.

Get ready for question number nine. Listen.



Please answer number nine. (PAUSE FOR 5 SECONDS).

Move to the answer block for question fifteen. The answer choices are A, flute; B, xylophone, C, French Horn; D, cello. E is the choice if you do not know the answer. Listen. (MUSIC PLAYS: excerpt from "The Swan" from *Carnival of the Animals* by C. Saint-Saëns, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 4, Side B, Band 8). Select from the answers for number fifteen now. (PAUSE FOR 5 SECONDS).

Move to the answer block for question sixteen. The answer choices are A, viola; B, oboe; C, trombone; D, tympani; E if you do not know. Listen. (MUSIC PLAYS: excerpt from introduction of "Send in the Clowns" by Stephen Sondheim from Barbra Streisand's *The Broadway Album*, Columbia Records). Select from the answers for number sixteen now. (PAUSE FOR 5 SECONDS).

Move to the next answer block which you will use for questions seventeen and eighteen—questions about the dynamics in music. Letter A, double f, fortissimo, (very loud); letter B, double p, pianissimo (very soft); letter C, crescendo (getting louder); letter D, decrescendo (getting softer). Letter E is a question mark if you do not know the answer.

Get ready to answer question seventeen. Listen. (MUSIC PLAYS: excerpt from "Sabre Dance" by A. Katchaturian, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 5, Side A, Band 2[3]). Select the answer for number seventeen now. (PAUSE FOR 5 SECONDS).

Get ready to answer question eighteen. Listen. (MUSIC PLAYS: excerpt from "March to the Scaffold" from *Symphonie Fantastique* by H. Berlioz, in

Music: An Appreciation, McGraw-Hill). Select the answer for number eighteen now. (PAUSE FOR 5 SECONDS).

Move to the next answer block for questions nineteen and twenty. The choices are "Presto" (fast); "Adagio" (slow); "Accelerando" (getting faster); "Ritardando" (getting slower). The question mark at letter E is a choice if you do not know the answer.

Get ready to answer question nineteen. Listen. (MUSIC PLAYS: excerpt from "Dueling Banjos" by R. Weissburg, *World of Music*, Silver Burdett and Ginn, 1988, Grade Two, Record 5, Side A, Band 1). Select the answer for number nineteen now. (PAUSE FOR 5 SECONDS).

Get ready to answer question twenty. Listen. (MUSIC PLAYS: excerpt from "Can-Can" from *Caie Parisienne* by J. Offenbach, *World of Music*, Silver Burdett and Ginn, 1988, Grade One, Record 4, Side A, Band 9[4]). Select the answer for number twenty now. (PAUSE FOR 5 SECONDS).

Move to the next answer block for questions twenty-one and twenty-two. The way all of the elements of music are combined create musical style which often lets us know the country from which the music comes. Your answer choices for questions twenty-one and twenty-two are: A, African; B, Japanese; C, Bluegrass; D, Jazz; E, question mark for do not know. In the next five questions you will select the musical style or the country from which the music comes.

Get ready for question number twenty-one. Listen. (MUSIC PLAYS: excerpt from "Gangele Song" from Angola, Folkways Records). Select the answer for number twenty-one now. (PAUSE FOR 5 SECONDS).

Get ready for question number twenty-two. Listen. (MUSIC PLAYS: "Godan Ginuta" from *Music: An Appreciation*, McGraw-Hill). Select the answer for number twenty-two now. (PAUSE FOR 5 SECONDS).

Move to the next answer block for questions twenty-three and twenty-four. The choices are: A, Native American; B, Country; C, Gospel; D, Rock and Roll. Letter E is a question mark to show that you do not know.

Get ready to answer question number twenty-three. Listen. (MUSIC PLAYS: excerpt from "Joy to the World," Three-Dog Night, Columbia Records). Select your answer for question twenty-three now. (PAUSE FOR 5 SECONDS).

Get ready to answer question number twenty-four. Listen. (MUSIC PLAYS: excerpt from "Out of the Depths," performed by Mahalia Jackson, Columbia Records). Select your answer for question twenty-four now. (PAUSE FOR 5 SECONDS).

Move to the last answer block for question number twenty-five. The choices are: A, Rock; B, Jazz; C, Country; D, Ragtime. Letter E is a question mark if you do not know the answer.

Get ready for question number twenty-five. Listen. (MUSIC PLAYS: excerpt from "The Maple Leaf Rag" by Scott Joplin from *Music: An Appreciation*, McGraw-Hill). Select your answer for question twenty-five now.

This is the end of the test. Please close your test booklets. Put your answer sheet on top of your test booklet and remain seated until your teacher has taken up all test booklets and answer sheets.

(TIME: 22 minutes, 38 seconds.)

ANSWER KEY

1.	D	6.	A	11.	A	16.	B	21.	A
2.	C	7.	B	12.	D	17.	A	22.	B
3.	A	8.	B	13.	B	18.	C	23.	D
4.	B	9.	C	14.	C	19.	C	24.	C
5.	C	10.	B	15.	D	20.	A	25.	D

Note: Items 1-25 in Subtest Two transcript and answer key are items 26-50 in the Total Test analysis, discussion, and revision recommendations.

Test Booklet

Grade Five

Rhythm, Timbre,

and

Expressive Qualities

Questions 1, 2, 3, and 4:

- A. ♩
- B. ♪
- C. ♫
- D. ○
- E. ? do not know

Questions 5, 6, 7, and 8:

- A. twos
- B. threes
- C. twos and threes
- D. ? do not know

Questions 9, 10, 11, 12, and 13:

- A. ♩ ♩ ♩♩♩ | ♩ ♩ ♩ ♩ ||
- B. ♩ ♩ ♩ ♩♩ ♩♩ ♩ ||
- C. ♩♩ ♩♩ ♩ | ♩♩ ♩♩ ||
- D. ♩ ♩ | ♩♩ ♩♩ ♩ ||
- E. ? do not know

Question 14:

- A. trumpet
- B. clarinet
- C. violin
- D. piano
- E. ? do not know

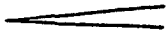
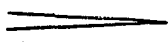
Question 15:

- A. flute
- B. xylophone
- C. French horn
- D. cello
- E. ? do not know

Question 16:

- A. viola
- B. oboe
- C. trombone
- D. tympani
- E. ? do not know

Questions 17 and 18:

- A. *ff* very loud
B. *pp* very soft
C.  getting louder
D.  getting softer
E. ? do not know

Questions 19 and 20:

- A. *presto* very fast
B. *adagio* very slow
C. *accelerando* getting faster
D. *ritartando* getting slower
E. ? do not know

Questions 21 and 22:

- A. African
B. Japanese
C. Bluegrass
D. Jazz
E. ? do not know

Questions 23 and 24:

- A. Native American
- B. Country
- C. Gospel
- D. Rock
- E. ? do not know

Question 25:

- A. Rock
- B. Jazz
- C. Country
- D. Ragtime
- E. ? do not know

End of Test

APPENDIX I

NORTH CAROLINA ELEMENTARY MEASURES OF MUSIC ACHIEVEMENT
RAW SCORES

APPENDIX I

RAW SCORES FOR TOTAL TEST BY STUDENT IDENTIFICATION NUMBER

Grade One SID SCORE	Grade Two SID SCORE	Grade Three SID SCORE	Grade Four SID SCORE	Grade Five SID SCORE
101 42	201 44	301 39	401 28	501 26
102 42	202 37	302 32	402 29	502 18
103 41	203 46	303 36	403 27	503 22
104 31	204 46	304 30	404 30	504 29
105 39	205 46	306 25	405 21	505 29
106 25	207 48	307 24	406 34	506 17
107 40	208 49	308 26	407 28	507 23
108 44	209 37	309 35	408 38	508 22
109 39	210 42	310 36	409 26	509 22
110 38	211 48	311 23	410 34	510 28
111 34	212 44	312 34	411 6	511 32
112 36	213 42	313 32	412 28	512 27
113 41	214 37	314 24	413 28	513 27
114 41	215 36	315 38	415 30	514 21
115 33	216 47	316 35	416 32	515 27
116 35	217 42	317 27	417 28	516 25
117 39	218 40	318 30	418 26	517 22
119 37	219 44	319 35	419 28	518 26
120 26	220 44	320 32	420 30	519 24
121 41	221 47	321 28	421 25	520 21
122 38	222 38	322 28	422 27	524 23
123 33	223 44	323 26	423 8	
	224 47	324 39	424 25	
	225 42	325 29	425 23	
	226 40		426 33	

RAW SCORES FOR SUBTEST ONE AND SUBTEST TWO BY
STUDENT IDENTIFICATION NUMBERS

Grade One			Grade Two			Grade Three			Grade Four			Grade Five		
S1	SID	S2	S1	SID	S2	S1	SID	S2	S1	SID	S2	S1	SID	S2
21	101	21	23	201	21	18	301	21	8	401	20	8	501	18
22	102	20	15	202	22	14	302	18	13	402	16	5	502	13
22	103	19	24	203	22	18	303	18	7	403	20	10	503	12
15	104	16	23	204	23	11	304	19	9	404	21	12	504	17
17	105	22	25	205	21	9	306	17	3	405	18	12	505	17
8	106	17	24	207	24	8	307	16	13	406	21	9	506	8
19	107	21	25	208	24	11	308	15	11	407	17	5	507	18
23	108	21	15	209	22	17	309	18	16	408	22	8	508	14
21	109	18	19	210	23	19	310	17	7	409	19	5	509	17
20	110	18	24	211	24	12	311	11	14	410	20	9	510	19
18	111	16	25	212	19	17	312	17	1	411	5	12	511	20
19	112	17	23	213	19	14	313	18	9	412	19	11	512	16
21	113	20	17	214	20	12	314	12	8	413	20	12	513	15
23	114	18	17	215	19	18	315	20	7	415	23	10	514	11
14	115	19	24	216	23	17	316	18	13	416	19	13	515	14
19	116	16	20	217	22	12	317	15	9	417	19	12	516	13
22	117	17	21	218	19	11	318	19	10	418	16	8	517	14
18	119	19	23	219	21	14	319	21	7	419	21	12	518	14
14	120	12	20	220	24	15	320	17	9	420	21	13	519	11
21	121	20	24	221	23	12	321	16	8	421	17	9	520	12
19	122	19	22	222	16	13	322	15	10	422	17	10	524	13
16	123	17	23	223	21	11	323	15	4	423	4			
			24	224	23	17	324	22	11	424	14			
			21	225	21	10	325	19	4	425	19			
			21	226	19				11	426	22			