

The timing and teaching of word families

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Johnston, F.R. (1999) The timing and teaching of word families. *The Reading Teacher*, 53. 64-75.

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Abstract:

Word family pattern recognition is a key to understanding the complexities of the English language. Teaching of the patterns is easier if you can recognize the readiness of your students.

Article:

After rereading the familiar predictable book *Cat on the Mat* by Brian Wildsmith (1982), Mrs. Beatty (not her real name) asked a group of her first graders to name the rhyming words they noticed in the story as she wrote them in a column on the board. The children named and then read the words *cat*, *mat*, and *sat* together. Then Mrs. Beatty asked her students (all names are pseudonyms) what they noticed about the words. Dylan answered that they rhymed. Mrs. Beatty agreed that they did have the same rhyming sound, then encouraged the children to look closely at the letters in the words. A hand shot up, and Amanda said, "They all have a t at the end!" "That's right," replied Mrs. Beatty, and she led the children in reading each word again, emphasizing the final letter and pointing to the t. Then Mrs. Beatty asked, "What else do you notice?" "They all start with different letters," offered Lakeesha. "Yes, they do," agreed Mrs. Beatty. "Tell us the beginning letters, Lakeesha." Mrs. Beatty then returned to the same question, "What else do you notice?" "They all have an a in the middle," said Noah. "Good for you!" responded Mrs. Beatty. She honored all observations, but kept probing until Wendy observed that they all had a and t in them.

For these first graders the -at chunk or rime at the end of these phonograms is not the obvious unit that it is to more experienced readers and spellers. Yet this ability to hear, see, and use the rime as a reliable cue for reading new words and spelling words that sound alike offers students a powerful insight into how English spelling works.

The study of phonograms or word families is not a new idea but it has had renewed interest lately and has been recast as the study of onsets and rimes. Rimes are the vowel and what follows in a syllable (the -at of *cat*) while the onset is the initial consonant or cluster before the vowel (the c of *cat* or the ch of *chat*). Teachers in the primary grades have seized on word families as a logical and friendly avenue to the study of letter-sound correspondences and vowel patterns. Once the -at rime is visually and auditorily familiar we can use it to read and spell numerous one-syllable words like *pat*, *chat*, and *flat* as well as syllabic chunks in longer words like *category*, *acrobat*, and *quadratic*.

Intuitively the study of word families has long made sense to teachers, but there is recent empirical and theoretical support for it as well. This article reviews for teachers a rationale for why to teach word families and some ideas about how to teach word families, and it also adds a third dimension that is not widely addressed—when to teach word families.

Why study word families?

The role of phonological awareness in children's reading development has been well researched, but we also know that it is not easily achieved. Research over the last 15 years has demonstrated that children are more successful at breaking apart the onset and rime in a word (t-op or stop) than in breaking the word into individual

phonemes (t-o-p) or breaking it in another place (such as to-p) (Treiman, 1985). Adams (1990) speculated that this natural proclivity to onset-rime division may be related to the fact that sensitivity to rhyme develops early and easily. She went on to say that these units may be influential in the acquisition of word recognition skills and spelling. While even rhyme is not easily perceived by some children, it is one of the earliest instances of phonological awareness to emerge, so it makes sense to use it to support the study of more abstract and difficult phonological insights.

Word families "rhyme," of course, because they share a common rime. Rimes are the basic units for reading and spelling words by analogy. For example, the familiar word park can be used by analogy to read lark, shark or spark. While there is some disagreement about how soon young readers can use analogy (Ehri & Robbins, 1992; Goswami & Bryant, 1992) there is converging agreement that all readers, at some point, develop this strategy to remember sight words, to decode unfamiliar words, and to spell words in an accurate and efficient manner. The Benchmark Word Identification program (Gaskins et al., 1988; Gaskins, Ehri, Cress, O'Hara, & Donnelly, 1997) is one example of an effective way to help children use known key words with high-frequency spelling patterns to decode new words by analogy. Allen (1998) also described an instructional framework based upon the use of analogy. Instruction that focuses upon common phonograms or rimes should help students develop this ability to use analogy to read new words.

One appeal of phonograms is that they offer an alternative to traditional synthetic phonics programs in which beginners are expected to sound out or decode new words they encounter in a letter-by-letter fashion. Wylie and Durrell (1970) reported nearly 30 years ago that children learn words easily by the use of "rhyming phonograms" as opposed to the study of complicated decoding rules with many exceptions. One simply learns -ail or -fight as rimes that work the same way in many words. Asking young readers to isolate the vowel or to use the vowel to sound their way through a word letter by letter, applying beginning phonics rules, is asking them to do something that is very abstract and difficult, and often impossible (such a strategy would not work with ball or toy, for example). Eventually they do need to be able to isolate vowel sounds, especially to spell words that are not made from familiar rimes, but the study of word families offers a friendly route to phonics understandings. Children can work with sounds in the context of easily perceived and immediately useful units.

Another reason word families make learning easier is that the pronunciation of vowels is more stable within a family than across families (Adams, 1990; Wylie & Durrell, 1970). The study of vowel sounds is complicated by the fact that the exact sound varies depending upon environments. This may be true of the geographical or regional environment as well as the environment created by the letters that come before or after the vowel. For example, in some parts of the southern United States the word dog does not have the same vowel sound as the short o in top. Instead the word dog is pronounced as though it were spelled DAWG. Pen and pin are pronounced as homophones, and in some southern dialects the word bill is a two-syllable word pronounced something like be-ull. While the pronunciation of vowel sounds may not be stable across word families it tends to be stable within. Dog, fog and frog are pronounced as rhyming words, using the same vowel sound in each one. The issue of whether that sound is a short vowel or not is not important in the study of word families. One just learns to associate the sound (however one says it) with the rime -og. Children in different parts of the United States must feel very confused and frustrated if they attempt to use published phonics programs that do not reflect their regional pronunciations.

Figure 1
Thirty-seven common rimes from which 500 primary words can be derived (from Wylie & Durrell, 1970)

-ack	-ail	-ain	-ake	-ale	-ame	-an
-ank	-ap	-ash	-at	-ate	-aw	-ay
-eat	-ell	-est	-ice	-ick	-ide	-ight
-ill	-in	-ine	-ing	-ink	-ip	-ir
-ock	-oke	-op	-ore	-or	-uck	-ug
-ump	-unk					

While vowels vary across dialects, the environment created by the consonants surrounding the vowel can also

cause both well-known and subtle differences in the pronunciation of the vowel itself. Compare the vowel sounds in words like cat and cap (the short a sound) to those in call and chalk or car and chart (known as and r-controlled vowels). Even words commonly identified as long or short vowels may have slightly different pronunciations when followed by certain consonants. Compare the long sound of a in take with tail (which is sometimes pronounced as tay-u1) or the short a sound in stack with that in stamp, in which the vowel is followed by a nasal. Adults, whose ability to read and spell such words is automatic, may not be as sensitive to these subtle sound variations as children, but experience watching children try to sort words by vowel sounds reveals that they are often stumped by such words. Again, in the context of word families these variations in vowel pronunciation tend to remain constant in the rime unit and need not be labeled in any particular way.

The study of high-frequency rimes also makes instructional sense because they generate so many words. Wylie and Durell (1970) created a widely republished list of 37 rimes that are the basis for nearly 500 primary words (see Figure 1). Frye (1998) tells us that 38 phonograms can generate 654 one-syllable words. While these are impressive numbers, familiar rimes are also the basis for syllabic chunks that occur in thousands of multisyllabic words as well. Consider a word like hippopotamus which is made up of four familiar rimes (-ip, -o, -at, and -us) seen in single-syllable words like zip, go, hot and bus.

We can see that there are a number of reasons to study word families. What is most important for the young student is coming to understand that the rime or vowel chunk is a reliable and generative unit for reading and spelling words. Although it cannot account for all the word knowledge children will need, the time spent on the study of word families appears to be time well spent. However, there is an important issue that has not been addressed very often, and that is when children should study word families.

Figure 2
Using children's spelling to plan word study instruction

Stage and sample spellings	What the child knows and confuses	What the child is ready to study
Emergent pan = STU, wet = SMB pan = P, wet = T, bug = B	Words are made of letters, but letter to sound consonant correspondences are lacking or incomplete.	Study alphabet if needed and beginning consonant sounds. Plan language play with rhymes.
Early Letter Name pan = PN, wet = YT, bug = BG, chin = JN flip = FP	Initial and final consonants are represented consistently, but medial short vowels are missing.	Start with one word family at a time and then compare word families with the same vowel.
Letter Name pan = PAN, bug = BOG, chin = JEN, trip = CHRP flip = FLEP	Short vowels are used but are generally inaccurate; some blends and digraphs are in place.	Compare word families with mixed vowels and include words with blends and digraphs.
Within Word Pattern PAN, BUG, CHIN, FLIP boat = BOTE, BOATE steam = STEME, STEEM float = FLOTE, FLOWT	Short vowels, blends, and digraphs are correct for the most part. Using but confusing long vowel patterns.	Compare and contrast short and long vowel patterns. Occasionally explore word families.

When should we study word families?

The developmental view of word knowledge as described by Henderson (1985) offers an answer to the question of when to introduce word families to young readers. Children show us in their invented spelling exactly what they understand about our spelling system and what still confuses them (Invernizzi, Abouzeid, & Gill, 1994). The chart in Figure 2 lays out a suggested sequence of word family study based upon children's invented spelling. It describes windows of opportunity in children's developing understanding of the English spelling system during which the study of word families is most appropriate. Well-timed instruction with word families can help children solidify tentative understandings, sort out current confusions, and move along to new

understandings in the most efficient manner.

Children in the Emergent stages of spelling are still struggling to match the more salient consonant sounds with beginning and ending letters and usually omit vowels altogether in their writing (except for occasional long vowels). Invernizzi (1992) found that awareness of vowel patterns within the time appears to come only after the initial consonant elements are in place. Children in the Emergent stage are not ready to attend to and master the spelling of word families. They can sort pictures by initial sounds to master the straightforward letter-sound matches of consonants (Bear, Invernizzi, Templeton, & Johnston, 1996). The study of word families is sometimes confused with the study of rhymes, and a caveat is needed here. While the study of rhyming words is certainly appropriate for emergent readers in kindergarten, we would not expect most kindergarten children to be able to read the printed forms of the words or to spell them completely as we do in the study of word families. Their exposure to rhyme should be through oral language play and literature (Griffith & Olson, 1992; Yopp, 1992).

By the time initial consonant sounds are under good control most children are representing final consonants as well. The group of students Mrs. Beatty gathered to explore the -at family were using beginning and ending consonants consistently in their daily journal writing but seldom included a vowel. Children at this "consonant frame" or Early Letter Name stage of spelling (Bear et al., 1996) can be introduced to the study of word families that contain the same vowel (e.g., -at, -an, -ap, -ag families) because their success does not depend upon attending to the vowel sound itself but to the onset and ending consonants. The vowel is part of the rime chunk, and it is the chunk that children are learning to manipulate and spell rather than the individual vowel itself.

When vowels begin to appear in children's invented spelling they have developed phonological sensitivity to the vowel and are starting to address the very complicated task of matching vowel sounds to letters. Children who are consistently using short vowels, but confusing them, are in the Letter Name stage. They are ripe for word family study that compares rimes with different short vowels (e.g., -ag, -og, -ug, -ig). It is at this point that their attention can and must be directed to the vowel itself rather than the onset or ending consonant. The comparison of different families is critical if children are going to do more than temporarily memorize how to read and spell one family. Activities that ask them to actively make decisions about which rime, and then which vowel defines that rime, help them form the necessary associations needed to remember and use those rimes.

Children who have short vowels under good control and are starting to include silent letters in words with long vowels are in the Within Word Pattern stage. They do not need a lot of work on word families, certainly not short-vowel families. Word study at this point should focus more upon patterns that cut across phonograms. For example, the CVC (consonant-vowel-consonant) pattern, which is the basic short vowel pattern in English, will include -at, -ap, -ag, -ad, -ed, -eg, -it, -ig, -ot, -op, -up, -ug. Different short vowels should be compared, and then short-vowel patterns such as CVC should be compared to long vowel patterns such as the CVCe pattern of male or the CVVC pattern of mail in word sorting activities (Bear et al., 1996; Morris, 1982).

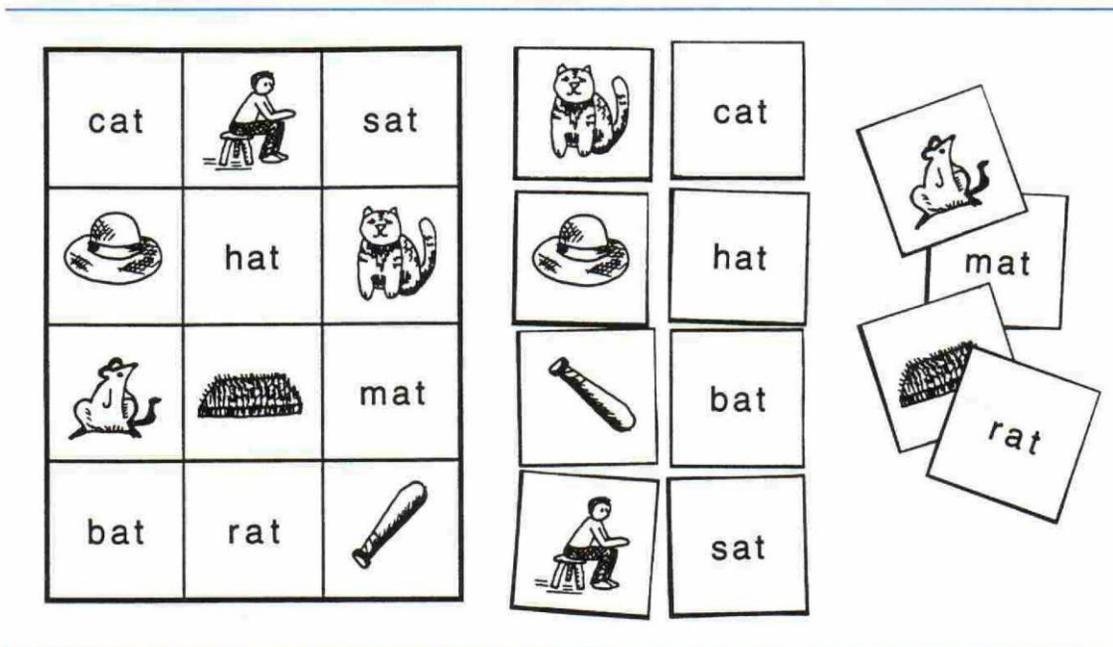
How should we study word families in a developmental fashion?

One word family at a time. Amanda had recently written the following in her journal: I WT to the FR LS NT ("I went to the fair last night"). The study of word families for Early Letter Name spellers like Amanda (using consonants consistently but generally omitting vowels in invented spellings) begins with one rime such as the -at rime chosen by Mrs. Beatty. The -at family was a logical choice because the children had read a story containing three words that shared the -at rime. In contrast, if the children had been reading *Dan the Flying Man* (Cowley, 1990), then the -an family would have made a good starting point. There is no particular order to the word families that one chooses; however, short a families make a good starting point because they are so common in the reading materials of young children, and studies of children's invented spellings show that this is the short vowel least likely to be confused (Henderson, 1985). In addition, short-vowel rimes are also better than long-vowel rimes for children in the Letter Name stage because these children are still spelling by sound and are not yet aware of the silent letters needed to represent most long vowels.

Mrs. Beatty's children had read *Cat on the Mat* many times since the beginning of first grade, and most already knew the words *cat* and *sat*. After leading the children in a discussion of the letters that were common to all the rhyming words in the list generated after reading *Cat on the Mat*, Mrs. Beatty summed up their observations by saying, "We say that these words belong to the same family because they all end in the same two letters, A-T." She then read aloud several pages of a classroom favorite by Dr. Seuss, *Hop on Pop*, that contained a simple rhyme made up of the word *sat* as well as *Pat*, *hat*, *bat* and *that*. Mrs. Beatty did this to help the children see that there were more words in the family and to make connections between the study of word families and reading. These words were added to the list, and Mrs. Beatty asked the children again what they noticed about the new words. Next, Mrs. Beatty asked the children to read the words in the list starting with the most familiar word, *cat*. As each word was read the cumulative rhyming nature of the list provided support for reading the new or less familiar words by analogy. This provided a lesson in blending as the children substituted different beginning onsets for the same rime. To finish up, Mrs. Beatty led the children in a spelling chant by naming each letter in each word: C-A-T, S-A-T, M-A-T. As each word was spelled Mrs. Beatty underlined the rime unit, and once more at the end of the lesson asked the children to tell her how the words were all alike. This time the children readily answered that they all had an -at in them.

The next day Mrs. Beatty had the words from the day before written on individual index cards, which she placed in a pocket chart. The children read the words again, beginning with the most familiar. Mrs. Beatty took scissors and cut the -at off of each word leaving the onsets (all single consonants except for the th in *that*, which was left as a two-letter digraph unit). The cards with -at were put in a column while the onsets were placed in a scrambled order at the bottom of the pocket chart. Mrs. Beatty called on someone to come up and make the word *cat*. "What letter would you need to add to -at to make *cat*?" she asked. She proceeded to call on different children to put the onsets and rimes back together. Toward the end of the session Mrs. Beatty posed the question, "What if I wanted to spell the word *fat*? What letters would I need?" She repeated the question with *rat* to help children see how they could spell additional words that sounded the same as the words they had been studying. These words were added to the others in the chart.

Figure 3
Pictures and words for individual sorting



After this group modeling it was time for the children to work with the words independently for additional exploration and practice. Mrs. Beatty prepared the handout shown in Figure 3 containing both the words from the -at family and pictures to match with those words. The children cut apart the words and pictures and then matched the words to the pictures as shown in Figure 3. This task required only that the child attend to the first letter and sound, so it served as a review of initial consonants. After the children matched the words to the

pictures Mrs. Beatty challenged them to take the pictures away and read the words. They finished up by once again matching the pictures back to the words before storing the words and pictures in an envelope for another day.

Further work with these words focused upon helping the children master the spelling of the words. Mrs. Beatty held up each of the pictures in turn and asked someone to write the word on the chalkboard in a column. Listing the words in a column serves to reinforce the visual pattern of the family's rime. At other times Mrs. Beatty used magnetic letters or letter cards in a pocket chart. After the class listed five to seven words in this activity, another child was asked to underline or point out the part of the words that were the same. For individual practice Mrs. Beatty asked the children to spell the words in a list on their own paper as the pictures were named. Eventually the children learned to do this with a partner or on their own, turning over a picture from their collection and then spelling the word.

Mrs. Beatty identified additional stories her children could read during guided reading and independent reading which contain words from the -at family such as *That Fly* or *Buzz Said the Bee*. The thoughtful use of materials with a high percentage of words with the same patterns as those taught in phonics lessons makes sense (Hiebert, 1998; Stahl, Duffy-Hester, & Stahl, 1998) as it increases the chance that children will make connections between the teacher-directed study of word families and their own encounters with words in meaningful contexts. After reading such books for meaning and pleasure Mrs. Beatty challenged her students to revisit the text to look for words in the same family.

After exploring the -at family in depth over several days Mrs. Beatty chose to do the -an family and introduced it with the familiar words from the traditional story about the Gingerbread Man. The refrain, "Run, run as fast as you can. You can't catch me I'm the Gingerbread Man" was put on a chart for the children to read and to search for the rhyming words. She might have used "Make a Pancake" by Christina Rossetti (1986), *Dan the Flying Man*, or any number of other simple books or rhymes that contain two or more words with the -an family. In this manner the children's reading and phonics are integrated, and children have opportunities to both spell and read the words in multiple contexts.

Many different activities both old and new can be done with word families. Strips of paper with initial letters can be threaded through a cutout beside the rime. Word family wheels can be prepared, which involve a cutout through which the onset changes as the wheel is turned. These are easy to make (even by the children with some help on cutting), and they have long been available commercially as well. Their value lies in the fact that they reinforce the skill of blending only two units, a rime that stays the same and the onset that changes, to create new words.

The study of one family at a time is valuable for several reasons. It serves to stabilize children's sense of rhyme and gives them added visual support as they see that rhyming words not only sound alike but can also look alike. It also reinforces initial sounds, which is the only cue needed to distinguish between the words as children try to read, spell, or match words to pictures. However, in order to focus children's attention on the rime itself they must be challenged to listen for, and attend to, the sound at the end of the word through activities which compare and contrast different rimes. The in-depth study of one word family at a time as described for the -at and -an families would take up most of a school year, so after introducing a few individually and at length, word families that share the same vowel can be introduced in sets of two, three, or even four.

Two or more families with the same short vowel. Until they demonstrate in their invented spellings that they are aware of vowel sounds and are trying to represent them, it will be difficult for children to compare different vowels across word families. For this reason, the next step in word family instruction is to plan activities which help children contrast families that share the same vowel but vary in the ending consonant unit (such as -at, -an, -ag). Once two families have been studied it is time to start comparing them.

Mrs. Beatty led her children in a word sorting activity (Henderson, 1985; Morris, 1982) by using a pocket chart

to categorize words from the -at family and the -an family. After putting cat and man at the top of the chart to serve as headers, she said, "Today we are going to compare some of the words you have been studying the last few days. Here is a word from each family." Then she held up the word sat and said, "I am going to put this word under cat." After placing sat below cat she read them and pointed to each one, "tisten, cat, sat, these words go together." She repeated this with the word can from the -an family, reading the header and then the new word. Amanda volunteered to try the next one. She pulled fan from the collection held by Mrs. Beatty, studied the word, and then placed it under man. "Now read down from the top to check yourself," directed Mrs. Beatty. Amanda read, "man, can, fan." As each child came forward and added another word, the cumulative list was read from the top to the bottom for practice in blending the variant beginning sounds with the constant rime. The final sort looked like this:

cat	man
sat	can
rat	fan
hat	ran
that	Dan
mat	pan

Mrs. Beatty then asked the children how the words in each column were alike. Responses varied (they rhyme, they have the same letters at the end) but included the idea that they were all in the same family. For independent practice the children were given a sheet of word cards like that in Figure 4. The children cut apart and sorted the words on their own or with a partner. The word cards in the pocket chart were also available for children to use throughout the day.

Mrs. Beatty continued to introduce this group to a variety of word families over the next month. She chose to study some short u families such as -ub and -ug after reading like Rub-a-Dub Suds (Peters, 1988), which includes the words tub, rub, and plug. After studying several short vowels in this manner she contrasted word families that have different vowels (as described in the next part) when she saw that her students were working easily with two or three families that share a vowel that vowels were beginning to appear in their invented spelling. Meanwhile, she had another group of students who were ready to contrast word families with different vowels.

Comparing word families with different short vowels. Bruce had recently written WIN I GRO UP I WAT to be a VAT and TAK CAR of PEPLS PATS. When young writers such as Bruce begin including vowels in their invented spellings on a regular basis they are solid Letter Name spellers who have developed the phonological sensitivity to attend to vowel phonemes. Research on the development of children's word knowledge has demonstrated that when children do start representing short vowels they make inaccurate letter-sound matches that have a logic of their own (Henderson, 1985; Read, 1981). We see this in Bruce's spelling of vet and pet as VAT and PAT. The name of the letter A and the short sound of E are very close in terms of the way they sound and feel in the mouth, and many children will make this same logical substitution.

To help children learn which letters are used to represent which short vowels, Mrs. Beatty planned word family sorts that contrasted different vowels. For example, when comparing -at, -ut, and -it she made the short vowel the distinguishing feature and the object of the children's attention. Mrs. Beatty gathered a group of Letter Name spellers like Bruce and used word sorts in which she contrasted the well-known family -at with two other families, -it and -ut, which were not as familiar.

Mrs. Beatty gathered the small group around a pocket chart. As headers she chose words that she felt confident everyone already knew: cat, but, and sit. She placed the rest of the words in a scrambled fashion in the pockets below. Then she explained, "Today we are going to look for words that sound alike and look alike. Some of these words you have seen before but some of them you have not. You are going to see how being able to read and spell one word can help you read and spell many others." Then she held up the word hut and placed it under the word but. Pointing to each word she read, "But, hut. Does anyone know what a hut is?" Zach waved his hand in the air, and Mrs. Beatty called on him. "I know what a hut is. My brother and I built a tree hut in our backyard." Mrs. Beatty thanked Zach and then proceeded to model how she would sort mat and hit under their

respective headers. Next, she called for volunteers to come forward and choose a word to sort. Each student was asked to read the header and then the cumulative list of words to reinforce the sounds associated with the visual patterns. The resulting sort looked like this:

cat	but	sit
mat	hut	hit
that	nut	bit
hat	shut	kit
pat	cut	fit

After all the words had been sorted Mrs. Beatty asked the group to tell her why they had sorted the words as they had and how the words in each group were alike. To be sure that the students knew the meanings of the words, she pointed to kit and shut and asked for volunteers to tell what each word meant or to use it in a sentence. Then Mrs. Beatty asked the children if they knew any other words that could go in the families. Zach suggested brat for the -at family and Mrs. Beatty asked him to spell it for her as she wrote it on a card to add to the pocket chart. Other additions included sat, rat, spit, and rut. Before sending the students back to their seats Mrs. Beatty gave each child his or her own collection of words to cut apart for sorting and asked them to repeat the sort that they had done as a group.

Mrs. Beatty knew that children would catch on to the idea that the words are sorted on the basis of the middle vowel and that they might quickly sort merely by looking at the letters. Because she wanted children to form associations between visual patterns they read and the sounds they use to spell, she planned activities that involve both visual sorting and sound sorting. The next day Mrs. Beatty modeled a sound sort for this group. Using the pocket chart and the same headers as the day before, she pulled a word from a stack and read it aloud without showing it to the group. Children took turns identifying where each word would go on the basis of sound alone—under cat, but, or sit. After placing each word in the designated column Mrs. Beatty asked the student to check it visually and to change it if needed.

Figure 4
Word sheets for individual sorting

cat	man	sat
pan	that	can
ran	mat	Dan
hat	fan	fat
rat	tan	van
than	bat	pat

The children have learned to do this same sound sort with partners using their own sets of words. One child reads the words aloud without letting his or her partner see the word. The partner indicates by pointing or naming the header where that word should go. The reader lays the card under the header and his or her partner can see immediately if he or she was right or wrong and correct it. During this "blind sort" (Bear et al., 1996) children's attention is focused on the more abstract sounds rather than the visually salient letters. Sometimes the children also do "writing sorts." One child reads the words while a partner writes them in columns according to the ending rime. Again, the writer is given immediate feedback after writing when he or she is shown the word.

Over the course of several days the children in this group worked alone and with partners to sort their words, write their words in categories, and to look for more words to add to their collections. When Mrs. Beatty could see that the children were reading and spelling these words quickly and accurately she knew it was time to move on to other families.

When choosing word families to study, continue to look for words children know from their reading materials. Five Little Ducks, an old rhyme presented in a book by Pamela Paparone (1995), could serve as the basis for a study of the -uck and -ack families. Simple books written with rhyme such as *Oh, A-Hunting We Will Go* by John Langstaff (1974) have at least one rhyming pair that can be the starting point for a family. Poetry, jump-rope jingles, and other ditties also include many words built from common phonograms.

What about blends and digraphs? Developmental spelling research has established that children attempt to use blends and digraphs, or consonant clusters, about the same time they begin to attempt the representation of short-vowel sounds (Invernizzi, 1992). If instruction is sensitive to these developmental indicators, children will benefit from the study of blends and digraphs during the study of mixed-vowel word families. There is a complementary relationship between isolating and recognizing initial consonant clusters as onsets and the vowel and what follows as the rime.

Common or familiar words with blends and digraphs should be included even in the first word families studied (e.g., that in the -at family or stop in the -op family). As children show evidence that they are using blends and digraphs in their writing and reading, less familiar words can be included in the word families. The inclusion of consonant blends and digraphs will greatly increase the number of words children can generate for a family. Consider the -ack family: back, Jack, lack, Mack, pack, rack, sack, and tack can be expanded to include black, crack, quack, track, shack, stack, snack, and whack when two letter onsets are included. Ending blends and digraphs in families such as -ist, -ast, -ust, and -est or -ish, -ush, and -ash can also be contrasted in word sorting activities.

Further study of word families. When silent vowels begin to appear in children's invented spelling (as in RANE for rain or LIEHT for light) they are Within Word Pattern spellers. They are ready to study the many patterns which spell the other vowel sounds of English and the focus of word study should shift to looking at patterns across rimes. For example, ran, hat, mad, pant, and trap (the CVC pattern for short a) should be compared with sit, ship, pig, dish, and kiss (the CVC pattern for short i) and then short a words can be compared to cake, game, cage, tape, and gate (the CVCe pattern for long a). At this point some vowel patterns may still be explored as word families. The -ay pattern of long a, for example, is a highly regular spelling at the end of many one-syllable words. Some long-vowel rimes are included in Wylie and Durrel's (1970) list and can be used to generate an impressive number of words young readers and writers read and spell by analogy. -Ail, for example, can be used to generate at least 14 words (bail, fail, hail, jail, mail, nail, pail, rail, sail, tail, wail, quail, snail, trail), and -ain is the rime in at least 10 (gain, main, pain, rain, brain, chain, drain, grain, plain, stain).

It is not necessary, however, to study every common phonogram with every child (Morris, 1992). Once children have become adept at "chunking" or identifying rimes and using them to read and spell novel words, they will probably begin using rimes at a tacit or intuitive level. When children are spelling short vowels correctly for the most part or zipping through word family activities with little effort it is time to move on to the study of patterns, which are a more inclusive category than individual phonograms and therefore cover many more words for efficient study. Word study should continue throughout the grades as students examine words for common sounds and spelling patterns. The study of word families is not the whole answer, but when done at the right time, and not for too long, word families offer a sound instructional strategy to help children become stronger readers and spellers.

Timing is critical to word family instruction

This article offers a developmental perspective to guide teachers in the planning and pacing of word family

instruction. There is no hard and fast sequence to this instruction. Teachers should use children's invented spellings to determine what they already know and what they are ready to learn (Invernizzi, Abouzeid, & Gill, 1994). Then, taking into account what words children can recognize, teachers can create an approach to phonics that is both analytical and synthetic in nature and also tailored to the experiences of their students. Children work with familiar words to identify the rime (analysis) and then use that chunk to read and spell additional words as they blend different onsets with the rime (synthesis). In the study of word families, reading and spelling words are integrally related as processes that reinforce each other and have a common source of knowledge.

The instructional activities offered in this article describe a "hands-on" approach to phonics in which children actively explore words through discussion, sorting, searching, writing, and reading to make discoveries about how words work. Similar kinds of activities have been described by other educators (Cunningham & Cunningham, 1992; Fresch & Wheaton, 1997; Gunning, 1995) but the issue of when to do these things has not been carefully addressed. Timing may be the most critical component and this relies entirely upon the well-informed judgment of the classroom teacher.

Fortunately, children's invented spellings give us the insight we need to make these decisions. Every day young children show us what they know and what still eludes them when they are invited to write and spell as best they can. Instruction which is sensitive to children's development and targets their "zone of proximal development" (Vygotsky, 1962) will be efficient and successful. Instruction which is beyond what children can understand or covers what children already know is a great waste of time. In any discussion of phonics instruction timing is an issue that needs to be considered.

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