

## Oh, Baby, What a Science Lesson!

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**\*\*\* Note: Figures may be missing from this format of the document**

### **Article:**

How can you help first-grade students learn about human development and practice their observation, measurement, graphing, and prediction skills? Just follow Ashton Bates's lead and invite the mother (or father) of a newborn baby to bring the infant to visit your class once a month. Ms. Bates, a teacher at General Greene School of Science and Technology, became a grandmother just before school opened, when her daughter produced a beautiful discovery-oriented science project in the form of a grandson, Nicholas.

Ms. Bates's daughter brought Nicholas to school once a month during that school year. The children looked forward to these hour-long visits on "Nicholas Day" so they could test their predictions on a very agree-able subject. During the year, students predicted such things as changes in Nicholas's size, strength, and coordination.



*Let children observe how  
an infant changes over the course  
of a single school year.*

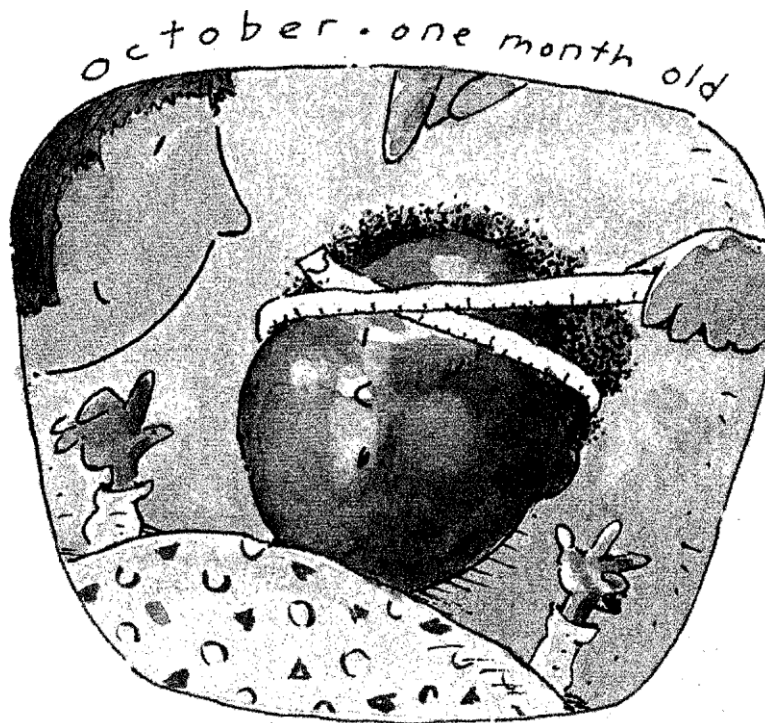
The year with Nicholas was exciting for the students, and even more so for Ms. Bates, as she saw the learning possibilities expand beyond studying human growth and development and extend into the realm of subject-area integration.

### **Do Babies Eat Steak?**

To prepare for the baby's arrival, Ms. Bates and the children discussed what a baby was and read books about newborn babies. Before the baby's initial visit, Ms. Bates asked her students to predict

- what the baby would look like,
- how much he would weigh,
- how big he would be,
- what he would be able to do,
- and what he would understand.

The children then drew pictures of how they imagined the baby would look. It was not uncommon for a child to predict that the baby might ride a bicycle or eat a steak. Ms. Bates recorded all of the predictions the students made.



When the children met Nicholas for the first time, they were perplexed by the 12-day-old baby. The fact that he was so tiny and for the first few visits only cooed, smiled, and cried made some students rethink their predictions about Nicholas's abilities. Many students were amazed that a baby could not even do "simple" things like walking and talking.

Before each monthly visit, Ms. Bates asked the children to predict what Nicholas would be able to do, how much he would weigh, and how the lengths of his arms, legs, and body would change. The class then compared their predictions to the actual observations and measurements.

Throughout the year, precautions were taken when planning Nicholas's visits. If the baby was running a fever, the visit was rescheduled; if a student had a cold, then he or she wasn't allowed to touch the baby.



### Head to Head

Measurement is a difficult mathematics skill for first-grade students. As the children predicted the size of Nicholas's head and then charted their predictions on the chalkboard, they saw a need to learn how to measure circumference. Then, they measured the circumference of their own heads and compared the two measurements.

The students also measured the length of the baby's fingers and toes and compared these measurements to the length of their own fingers and toes. Next, they measured the baby's total length and compared that to their own height. These collected measurements were recorded on chart paper to create a height versus age graph. Graphing the measurements helped the children visualize the comparison.

Nicholas also had his photograph taken with the children each month. These pictures were displayed alongside Nicholas's progress chart.

### Nicholas in Action

By observing Nicholas, students discovered many science concepts related to the human body. The children learned about sleep patterns and nutrition when making their initial observations. During the first few visits, Ms. Bates had to prompt the children to ask questions while Nicholas slept. As the months progressed, students asked the parents more informed questions such as, "Does Nicholas sleep through the night?"

Some students were surprised that at first Nicholas would only drink milk from a bottle and that he could not eat pizza. Through the course of his monthly visits, students saw Nicholas go from a liquid diet to semisolid food and finally to solid food. This progression led students to discuss teeth and their pattern of eruption. Before Nicholas's first visit, the children had thought babies were born with teeth. Because many first-grade students lose their first teeth during the year, Ms. Bates also talked with the children about *deciduous* (or baby) teeth.



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Students used their sequencing skills to draw pictures of developmental stages as Nicholas first cooed, then smiled, sat up, crawled, and began to pull himself into an upright position. Comparing the size of the clothes he

wore in September with the clothes he wore in May, some students were amazed. These observations produced questions of how we grow and why, over time, our clothes and shoes don't fit anymore. A ready-made lesson in observation and graphing was also provided when students depicted Nicholas's hair and eye color.

In addition to human development, various other science topics were brought up as a result of Nicholas's visits. For example, each month Nicholas's mother reported on his trips to the pediatrician and his inoculation record. These reports led to discussions of communicable diseases and those diseases we no longer fear because of inoculations.



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When the children observed Nicholas putting items in his mouth, they asked about the five senses; and his reaction to bright objects brought up the topic of light. Students also made noises and sang songs to watch Nicholas's reaction to sound. A discussion about vertebrates and invertebrates was begun when Nicholas learned to sit upright.

Every student also had a chance to hold the baby at least once during the year. This became a lesson in caring for people or animals that are dependent during early development.

In Nicholas, Ms. Bates had found a ready-made science kit that she truly loved, one that didn't require a purchase order or storage space—at least not for her. By the end of the year, it was easy to tell from student predictions, observations, and questions that they had a better understanding of human development.

### **A New Baby**

For the current school year, Joshua, a first-grade student's newborn brother, became the class's new subject of study. This time, Ms. Bates plans to complete the lesson by having the children write letters to Joshua and give them to his mother. Then, when Joshua begins first grade himself, he can open and read his "fan mail." The class will also record what they have done: in the form of a book, the *General Greene Baby Joshua Book*, which includes Josh's growth measurements, photographs, and other recorded observations.

Other teachers have also become enthused with and motivated by this project. The German teacher, for example, taught Ms. Bates's students body part names in German, and each child drew a life-size picture of himself or herself on butcher paper, labeling the body parts in both German and English. All teachers made an effort to dovetail some of their ideas with "Nicholas Day."

### **A Living Science Lesson**

First-grade students at General Greene experience a living science lesson that lasts a school year (or perhaps a lifetime). Perplexed about how to teach human growth and development to primary students? Have a baby help you out.