

JOURNALING: a BRIDGE BETWEEN SCHOOL AND HOME

Children share their learning experiences while using academic language in a meaningful way.

By Julie McGough

“We did the experiment again at home! The Pop Rocks disappeared in the bottle. I heard popping bubbles everywhere! We thought it would blow up!” Riley sparkled. The week before, we had used a balloon to pour Pop Rocks into a bottle of carbonated soda. We observed solid Pop Rocks fall into a liquid and create a gas. Then we wrote about the investigation in our family journal. Riley said, “My dad went to the store to get Pop Rocks and different kinds of soda to see if the kind of soda made a difference...it did!”

Establishing meaningful communication with families helps build the student-teacher-parent relationship. Journals can be a useful tool to bridge school and home. A journal can communicate learning goals, develop scientific vocabulary, and create dialogue through oral and written language. Journaling dialogue offers students additional experiences to improve conceptual understanding. In the example above, the family journal helped Riley have a conversation with her parents at home about solids, liquids, and gases; recreate the experiment; make comparisons; and bring information back to school to share with her classmates.

The family journal and a related habitat journal give students—naturally curious and enthusiastic to share ideas—an outlet to discuss and expand upon what they have learned using academic language. In the family journal, students record facts and questions about our current learning in the classroom. Children take the journal home to share and ask different people to respond to their questions. Many times, discussions lead to additional experiences involving problem solving and higher-order thinking. Children’s innate curiosity and inquisitive nature lead to questions that engage children in the world around them, creating a learning environment outside of the classroom. In the habitat journal, students record observations of habitats around the child’s home in the spring. Conversations and questioning about current units of study encourage learning connections in everyday life. In this article, the family journal is generated and written by first graders, although it is suitable to use in any elementary grade.

Authentic Writing Experiences

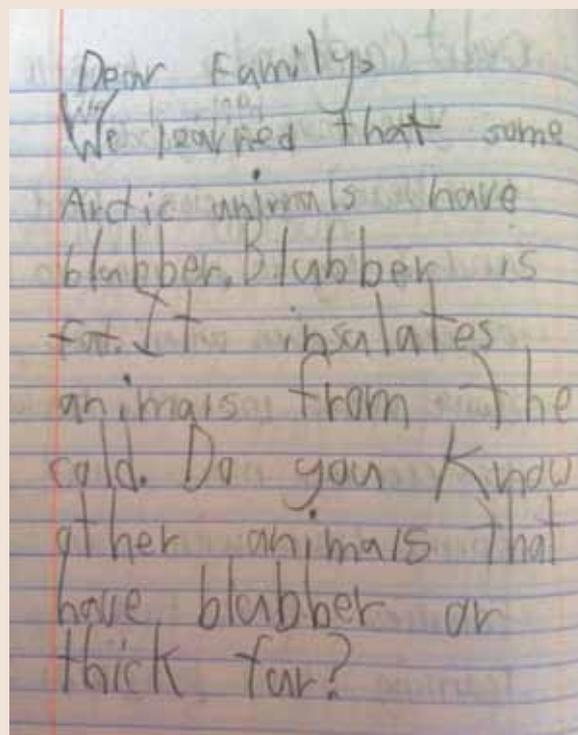
A *Framework for K–12 Science Education* describes the importance of learning experiences that engage children in questioning the world and how scientists have investigated and found answers to those questions (NRC 2012). Children engage in scientific practices through questioning, investigating, constructing explanations, and communicating information. Crosscutting concepts help provide students with an organizational framework for connecting knowledge from various disciplines. For example, children observed what happens when Pop Rocks are poured

into carbonated soda (see Internet Resources and NSTA Connection). The crosscutting concept, cause and effect, helps students begin to ask questions like, “What caused the balloon to get bigger?” Riley took the investigation further by exploring the cause-and-effect relationships of Pop Rocks in different kinds of soda. The concepts written about in the family journal encompass one or more of the seven crosscutting concepts and core ideas of the *Framework*, depending on the area of study at the time. These concepts offer students an opportunity to incorporate a common language across disciplines.

Children need opportunities to talk about learning experiences using academic language. Academic language is not practiced on the playground, and it may not happen at home without guidance; therefore it must be taught and practiced orally and in written form. Academic language consists of key science terminology (*solid, liquid, gas, insulate*) and science process skills (*observe, compare, contrast*). During a study of animals that live in cold climates, we made a blubber glove with plastic baggies and vegetable shortening (see Internet Resources and NSTA Connection). We used the glove to insulate our hand in a bucket of ice water. Children share the vivid and engaging learning experiences at school with people at home by writing entries in their family journals. The children use relevant vocabulary and engage in questioning. Jeff

Figure 1.

Jeff's family journal entry.



wrote, “We learned that some Arctic animals have blubber. Blubber is fat. It insulates animals from the cold. Do you know other animals that have blubber or thick fur?” (Figure 1, p. 63).

The Common Core State Standards for English Language Arts focus on increasing sophistication in all aspects of language use (National Governors Association Center for Best Practices, Council of Chief State School Officers 2010). First-grade students are expected to write informative/explanatory texts. With guidance from adults, they are also expected to recall information from experiences or gather information from provided sources to answer a question. Journaling helps students to bridge oral and written language and is especially valuable for English language learners who need authentic experiences to explore and use language.

From School to Home

To begin the journaling process, first the children and I engage in discussion about our learning experiences. After the Pop Rocks experiment, we had a conversation to orally communicate what we observed. Then, together we decide what we would like to share with our families at home. In a guided writing format, the class collaborates to write a note stating the current focus (solids, liquids, and gases), one or two facts about that topic (the balloon filled with air), and a question (“What would happen with a different kind of soda?”) to engage the reader of the journal to respond (CCSS ELA Literacy-Writing). The question waits to be answered in writing by a parent, older sibling, aunt, uncle, grandparent, or friend of the family. Different people can take turns responding to the child’s question by writing in the journal each week. The journal becomes an authentic communication tool!

Some families may not be able or willing to respond to the family journal. Several options are available for assisting students that may not be able to participate fully at home. Primary teachers may establish journaling buddies with upper grade classes, mentor teachers, high school mentors through an English class, parent volunteers, teacher candidates through a local university, or other community relationships. The teacher would deliver the journal to the buddy or mentor to read and respond to the child in writing and give the journal back to the child the following week.



A student works on her family journal with her mother.

PHOTOGRAPH COURTESY OF THE AUTHOR

From Home to School

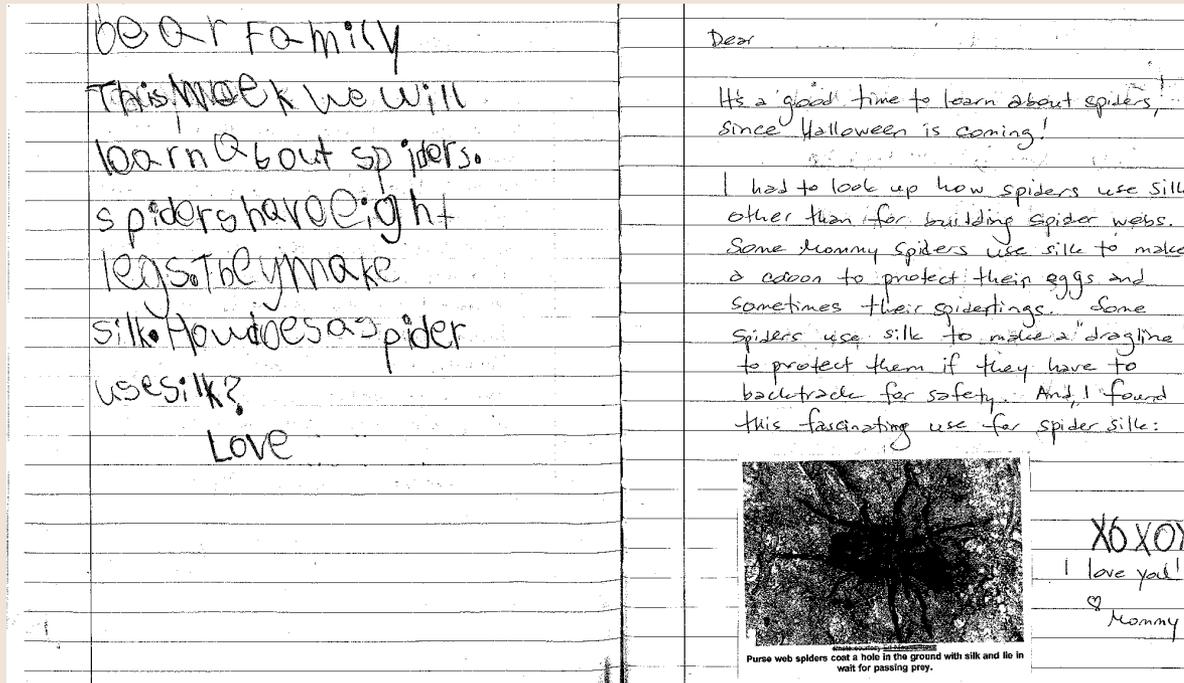
Each week, students anxiously wait for a turn to share the responses written in their family journal with classmates! As a class, we review last week’s journal question before I choose a child to read or help me read (depending on the reading level of the child) the responses in his or her journal to the class. Some children respond with a grin as they hear something they too have discovered. Many ask questions such as, “How did you figure that out?”

Each child and their family contribute new ideas based on personal experiences. This practice helps children realize that someone values what they write and add new ideas to share or further thinking (CCSS ELA Literacy-Speaking and Listening). Jack, a reluctant writer, looked forward to writing in the family journal each week because he valued the interaction between his peers, teacher, and family. He was able to engage in a process that was difficult for him (writing) because the experience was an authentic use of writing. When students feel affirmation, a sense of contribution, and shared responsibility for the welfare of the group, the climate for learning is good (Tomlinson and McTighe 2006).

The science content sometimes encourages the responder to further explore the concept or look up information at home (see Figure 2). Some families use library resources and technology to research a concept. Jack’s mother wrote, “I had to look up how spiders use silk other than for building webs.” Some families complete investigations. The investigations may copy what was done in class or may change a variable.

Figure 2.

Jack's family journal entry and response.



An in-class investigation about thermometers motivated a student to construct his own at home.

Periodically, children are so enthusiastic about a concept that they develop a new investigation to try at home with the help of a parent or another adult, thus creating opportunities for conversation, inquiry, and discovery. When talking about thermometers to measure temperature, Ryan built two thermometers, one with a glass bottle and one with a plastic bottle to compare results. This is an example of Scientific and Engineering Practice #3: Planning and carrying out investigations from *A Framework for K-12 Science Education* (NRC 2012). One child's excitement about investigating at home stimulated other children to do the same. Ryan brought his thermometers to school, and we set them on a table outside the classroom to observe. This experience gave Ryan a sense of contribution. Other children in class wanted to participate, so I gave

them information on how to make a bottle thermometer at home (see Internet Resources).

The journaling process keeps growing as children are eager to share discoveries and ideas. Students talk and write about concepts studied at school with the teacher and classmates, practicing academic vocabulary and developing new ideas along the way. Sometimes children will come to class after a rich discussion at home and ask if we can do a new experiment. When learning about weather, Sofia asked if we could make a sundial and observe it in our school garden. We made a sundial with a pencil and cardboard and observed it over time to continue our learning. Engaging experiences provide a springboard for chil-



The class made a sundial in response to student interest and observed it over time.



A student observes habitats at school.

dren to ask questions, guide discussions, and plan further investigations (Scientific and Engineering Practice #3: Planning and carrying out investigations). The children are involved in communicating their educational experiences, helping them to take ownership of their learning. The family journal gives the children a tool to continue the learning conversation at home.

Habitat Journal

The habitat journal is especially relevant in the spring when many changes occur in nature; the weather and many plants and animals change on a daily basis. Children automatically inquire about nature and animals as they begin to notice these changes (Scientific and Engineering Practices #1: Asking questions). Whether a bird builds a nest near the front door, a ladybug lands on someone's arm, an ant hill gets washed away by rain and rebuilt in a day, or a spider builds a web that a student walks through, interest is sparked and questions form. A spring habitat journal allows teachers to fur-

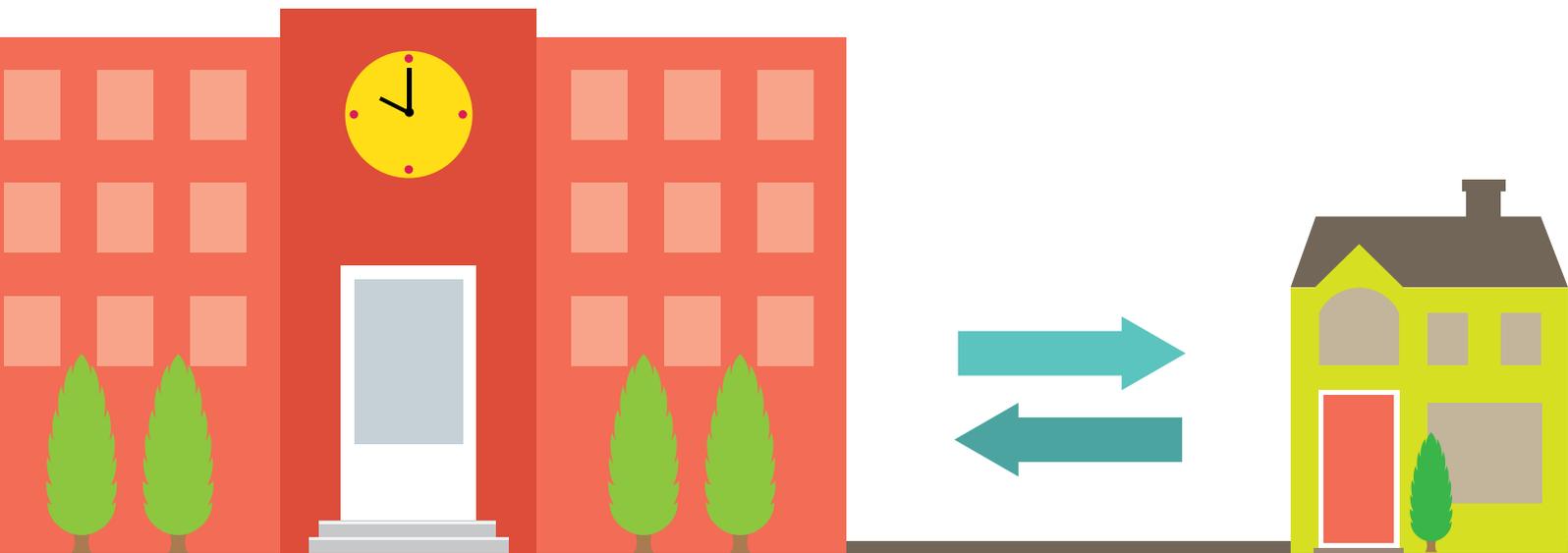
ther take advantage of their students' curiosity and encourage exploration of the outdoor classroom. The materials are free of charge, living things are abundant, and observation is engaging for people of all ages.

The habitat journal engages children in observation, drawing, thinking, and writing with a new purpose. After exploring habitats around the school campus, the children explore their home for habitats of other living animals. Students are taught to treat all living organisms used in the classroom or found in the field in a safe, humane, and ethical manner. Reiterate that students should not handle animals and insects independently unless they are with an adult who is certain that it is not dangerous to handle. Students should wash their



hands after exploring habitats. Children find snails, ants, spiders, worms, and pill bugs. Some may find a bird's nest, tadpoles, or even chickens. Animal habitats vary due to the areas that surround different types of homes.

The habitat journal focuses the learning on a specific topic (animal habitats), encouraging students and family members to write entries daily for one to two weeks based on observations made at home. The homework assignment sheet (see NSTA Connection) gives specific instructions and examples of writing entries to record thoughts and questions. A sample entry might include, "I saw an ant hill today. There were many ants crawling by. It is starting to rain. The ant hill is shrinking! Will the ants build it up again tomorrow?" Many children take additional steps when completing their habitat journals by researching information to help them understand what they see (Scientific and Engineering Practice #8: Obtaining, evaluating, and communicating information). Mia wrote, "A snail is a hermaphrodite. That means it is a boy and a girl." The enthusiasm Mia communicated led



others to further their work as well. A child's excitement for learning is contagious!

Assessing Learning Through Journals

Students' journaling work reinforces many writing skills. If a child shows difficulty with writing, more intensive guidance through small group instruction or one-on-one assistance may be needed. If a child's journal reveals lack of participation at home, the teacher may find a mentor student or other adult to participate with the child. This authentic task offers an opportunity to assess the application of writing skills, spelling, grammar, and handwriting.

Habitat journals may be assessed using a rubric (see NSTA Connection for a sample rubric). The assignment sheet provides a project guide with samples and parameters. The rubric may include number of days of observations, details of pictures or photos, facts discovered, questions pondered, inferences made, and accurate labeling of information with the date and location of observation. The habitat journal is an assigned task that will be turned in and presented to the class. A project guide and rubric are helpful to the students to provide structure and parameters for elements to be included in the finished product.

A Bridge for Communication

Communication is a key component to increase the quality of learning experiences for children. Many times a child does not see any correlation between what they learn in the classroom and real life. Both the family and habitat journals provide opportunities to bridge that gap and communicate learning while helping children make connections to the world around them.

Journaling actively involves the child in dialogue about content. It cultivates the process of thinking and learning, allowing academic experiences to be shared by parents and children together. Engaging the child in written and oral communication about learning experiences helps them to take ownership of their learning. In addition, this dialogue helps the teacher learn about the students and their families and watch the interaction with the content, promoting a positive educational experience that involves families in a meaningful communication bridge. ■

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References

National Research Council (NRC). 2012. *A framework for K-12 science education: Practices, crosscutting concepts, and core ideas*. Washington, DC: National Academies Press.

National Governors Association Center for Best Practices, Council of Chief State School Officers. 2010. *Common core state standards (English language arts)*. Washington DC: National Governors Association Center for Best Practices, Council of Chief State School Officers.

Tomlinson, C., and J. McTighe. 2006. *Integrating differentiated instruction and understanding by design*. Alexandria, VA: Association for Supervision and Curriculum Development.

Resource

Ardley, N. 2006. *101 great science experiments: A step-by-step guide*. New York: Dorling Kindersley.

Internet Resources

Blubber Glove Experiment

www.stevespanglerscience.com/content/science-video/blubber-glove

www.stevespanglerscience.com/experiment/blubber-gloves

Pop Rocks Experiment

www.stevespanglerscience.com/content/experiment/poprocks

Water Thermometer Experiment

www.weatherwizkids.com/experiments-thermometer.htm

www.stevespanglerscience.com/content/experiment/water-thermometer-sick-science

Connecting to the Standards

This article relates to the following National Science Education Standards (NRC 1996)

Content Standards

Grades K-4

Standard A: Science as Inquiry

- Abilities necessary to do scientific inquiry

Standard C: Life Science

- The characteristics of organisms
- Organisms and environments

Standard G: History and Nature of Science

- Science as a human endeavor

National Research Council (NRC). 1996. *National science education standards*. Washington, DC: National Academies Press.

NSTA Connection

Visit www.nsta.org/SC1304 for a habitat journal sample rubric and assignment sheet, and directions for the family journal. View the videos from Internet Resources at <http://bit.ly/Vio3di>.

