



Exploring Nature Indoors with Observational Drawing and Scientific Thinking

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This morning, children trickle into Kendra’s preschool classroom. They eye the bright yellow daisies their teacher has set out. Kendra wonders how they will interact with this nature element she has added to their room. During their morning group time, she asks the children, “Do you notice anything new or different in our room today?” There is an immediate response: “The flowers!” Kendra reminds them about how they had practiced observational drawing in the past. She then invites the children to draw the flowers during small-group time, noting that this is an optional activity.

At small-group time, A’Keela and Amara are first to visit the flower table. Amara determines they need a closer look at the flowers and retrieves magnifying glasses from the science area. She then asks to hold a flower, so Kendra cuts off a few blossoms for learners to hold. Amara picks up a bloom, smells it, touches it, and looks at it from different angles with the

magnifying glass. A'Keela, on the other hand, sits down with paper and pencils right away and begins recording what she sees.

Other children begin visiting the flower table, taking time to look, draw, and engage with this little piece of nature. Like Amara, Jordon uses the magnifying glass to look closely at the flower. He talks about what he sees and wonders about the yellow dust on the flower before he begins drawing the stem and leaves.



When we as teachers are purposeful about bringing nature into our classrooms, we create opportunities for curiosity, questioning, observation, and collecting and analyzing information. This sets a strong foundation for scientific thinking and knowledge, among other skills and concepts. One valuable way we can support children's exploration of nature is by teaching them how to observe carefully and create *observational drawings*. Observational drawing is a practice that encourages children to look more closely at

objects, to ask questions, to communicate their understanding of an object, and to engage in dialogue about it. Teachers provide children with opportunities to draw any object (already in their environment or brought in) from a variety of angles and to share with their classmates and teachers.

In this article, we offer a glimpse into Kendra's classroom during her preschoolers' investigation of natural objects. The children range in age from 3 to 5 years old and have a broad range of interests, abilities, and preferences for learning. Kendra has regularly tapped into the project approach ([Learn more projectapproach.org](http://Learnmoreprojectapproach.org)) over her 27 years in early childhood education, and she has found that much learning can happen when using observational drawing with children. (Learn more about the project approach by reading *Reflecting on the Fish Tank: Using the Project Approach to Make Connections*, in the Spring 2021 issue of *Teaching Young Children*.)

While often used in the project approach, observational drawing can occur in a variety of contexts to help children notice and describe details in observable phenomena (such as a bird's nest or an insect found by the children), ask questions, and engage in scientific thinking. These skills are not only essential for science development later on, they are also important for fostering higher order thinking in many other domains.

This particular exploration began with Kendra bringing in a small bouquet of yellow daisies and providing clipboards with white paper and a variety of drawing and science tools. She invited children to join her for a small-group activity with one direction: "Draw what you see." Doing so engaged learners in scientific questioning and thoughtful, in-depth conversations about nature.

Introducing Observational Drawings in the Classroom



Guided by a learning goal or objective, observational drawing requires just three things: blank paper, writing tools, and an invitation for children to draw what they see. In the opening vignette, Kendra used flowers, but early childhood educators can provide any natural object for children to observe and draw. She introduced observational drawing using a clipboard to hold the paper, but others may consider a different setup, such as covering a table with butcher paper.

In addition, some planning and support may be needed ahead of time. We suggest these three preparation steps:

1. During group time, introduce and demonstrate how to handle a clipboard, if using. Showcase the usefulness of a clipboard and emphasize how to avoid getting pinched.
2. Make clipboards, paper, and writing tools available around the classroom for the children to explore and incorporate, by choice, into their play.
3. Offer intentional practice with clipboards and other drawing tools. For example, provide a natural object (like the daisies in the opening vignette) and invite children to hone their observation and drawing skills.

Planned and Spontaneous Learning While Observing and Drawing Nature Objects

Kendra notices Lars ripping off petals and leaves and smashing them into a pulp. “Lars, I’m curious. What are you doing?” she asks. “I’m smashing the flowers!” he responds. Kendra asks if he knows what he is smashing. He freezes and looks at her. Kendra wonders out loud, “Is there a tool we could use to cut pieces of the flower off so we can look inside it?” Lars concludes they can use scissors from the art area.



After gathering scissors, he begins snipping at the flowers, cutting off random pieces and creating a pile of petals and seeds. Kendra encourages him to use the magnifying glass to look closely at the flower parts and to draw what he sees as he

investigates. He chooses the drawing tools he wants to use and a space where he can put his flower pieces for close access.

Then, Lars starts to recall helping his family collect and spread wildflower seeds near their home and what the seeds looked like. “I think flower seeds are in the middle of flowers,” he says. He looks more intently and begins to develop a hypothesis. First, he thinks the yellow dust from the flower is its seeds. He uses his fingertips to pull hard yellow bits from the center of the flower head. Then he changes his mind, leading to his second hypothesis: these were the seeds! Looking at the now-bald flower head through a magnifying glass, he notices many small holes. He proposes a third hypothesis: these holes are the seeds.

Lars and Kendra talk about his three ideas, referring back to his experience of planting wildflower seeds with his family. Lars decides that his second hypothesis is right.

As this vignette illustrates, integrating nature into the preschool classroom is one way to spark children’s natural curiosity and initiate deeper inquiry and conversations. Observational drawings can help children explore and learn about aspects of nature in a way that is meaningful to them. Indeed, drawing the flowers spurred other classroom conversations about seeds and how things grow.

One child, Jordon, was particularly interested in the “yellow powder” he saw when he used the magnifying glass, and he talked about it further with Kendra before they opened up the discussion with the rest of the class. “What is the yellow powder for?” was a question that arose from their wonderings. Kendra found a few books from the class library with information about pollination, including *National Geographic Readers: Bees*, by Laura Marsh, which had many detailed photos, including a photo of a bee covered in yellow powder, or *pollen*. Later, a family donated a jar of bee pollen, and the children used cotton balls to see if it would stick like it did in the photos of the bees.

Kendra displayed the children’s observational drawings and photos of them drawing for families and children to see. She and the children also discussed the observational drawings with families. The children excitedly explained what they drew, what they saw, and their new knowledge about seeds and “the yellow powder” called pollen they found on the daisies.

Tips for Exploring Nature with Observational Drawings

Observational drawing is one simple, engaging way to elicit children’s deeper thinking and scientific knowledge. Based on Kendra’s experiences, here are tips to help encourage it in your setting:



Reflect on children's interests. Before launching into observational drawings of nature, reflect on what children have been doing or talking about throughout the day. Have they found natural treasures recently? Is there a seasonal nature item (such as seashells or pinecones) that they have encountered at home, in their community, or in your setting?

- **Model how to draw observations.** Teach children about observational drawing during whole-group time. Model drawing what you see, talking through the process: “I notice this flower has many little dots in the center, so I am going to draw a lot of dots in a circle. Do you see the dots?” Demonstrate how to use the necessary documentation tools, like the clipboard and different writing tools.

- **Choose simple, natural materials.** Choosing an attractive natural item (such as a rock, leaves, a small branch, or an abandoned nest) will invite children to wonder. Remember that natural objects can even be found in the crack of a sidewalk. You can find small, free, and simple pieces all around. You can also invite families to contribute natural objects to the classroom.
- **Keep it open-ended and follow the children's lead.** Give children the freedom to draw what they see as they see it and let them know that this can take more than one drawing. This will lead to deeper and more intentional interactions with nature. Observations can lead to more complex questions. These, in turn, can be answered by adding magnifying glasses, a ruler, scissors, or other tools that help them dig deeper and answer their questions with your support.
- **You don't need to have all the answers.** It's okay to say, "I don't know." Observational drawings inspire many questions, so follow up with an invitation to brainstorm ideas and then investigate together. Provide books, field guides, brochures, vetted websites, and other print and digital resources about the natural artifact. Children can use them to gather new information and insights.
- **Document and share children's learning.** As children connect with nature, document the process and products of their learning by taking pictures, writing anecdotal notes, taking videos, and gathering drawing and writing samples. This will help them—and you—remember and reflect on the experience. Encourage discussion and deeper thought by hanging documentation of the observational drawing process. It can lead to a new project with more opportunities for recording the children's thoughts and ideas. Documentation can be shared with others, especially families, to highlight children's active learning.

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Standard 2: Curriculum

2G: Science

Standard 3: Teaching

3A: Designing Enriched Learning Environments

Audience: *Teacher*

Age: *Preschool*

Topics: *Child Development, Cognitive, Higher Level Thinking, Brain Science, Curriculum, Assessment, Classroom Management, Curriculum Development, Project Approach, Subject Areas, Creative Arts, Art, TYC*

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