



Where do the leaves go? Help children to be keen observers

Look at the leaves on our pecan tree," says Ms. Lucas to her class of 4-year-olds. The children have come outside to enjoy the fresh, cool November air.

She pulls a twig from a lower branch and invites children to feel the leaves. "See how the leaves are turning dry and brown. Soon they'll drop off. Then what happens?"

"Then we can play," says Lamont. "At my Grampa Joe's house, we push the leaves all in a pile and jump in the middle."

"They blow away," says Jenny. "The wind goes whoosh, and they're gone."

"My big brother rakes 'em and puts 'em in the trash," says Cornell.

"What about the leaves that don't get picked up or blown away?" asks Ms. Lucas.

Emily has an answer: "They're just laying on the ground and then they go to sleep."

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Leaves are a common learning material in early childhood classrooms in the fall. The changes they undergo make them perfect for nature study, and they are easy and inexpensive to obtain. They are ideal for the science or discovery center but they serve equally well in art, language, and math activities.

What children learn about leaves is important to their acquisition of knowledge. But perhaps more important is the *why* and *how*. Preschool and primary school children need to get comfortable with observing and exploring, asking questions, and finding answers for themselves. That goes for any learning material, from leaves and acorns to apples and pumpkins to rocks and soil.

Learning by observing

Observation is a key skill of learning and living. It's essential for doctors, scientists, teachers, business managers, athletes and anyone else who has to figure out what's happening and make decisions. Children use this skill for everything from recognizing letters of the alphabet to conducting science experiments to practicing safety and self-care.

You can help children develop and refine their observation skills in many ways:

- Slow down. Avoid hurrying or thinking you must follow an

Observation questions

Newspaper reporters are trained to be keen observers. In gathering information, they answer the five W's plus How. Adapt the questions below to your interactions with children to stimulate their observation skills.

Who. Who cares for the trees in our playground? Who cooks the dinner for your Thanksgiving meal?

What: What are these things that have fallen from the pine tree? What are they used for? What does it smell like?

Where: Where do leaves go after they fall on the ground? Where do pumpkins come from?

When: When do leaves fall from trees? When are apples ready to be picked?

Why: Why do leaves turn color? Why do we say "thank you" to someone?

How: How do apples and pumpkins get to the supermarket? How do you feel when it gets rainy and cold?

arbitrary schedule. Watch children thoughtfully; listen to what they say in words and behavior.

- Offer activities that require use of the senses—smelling and hearing as well as seeing and touching.
- Ask questions that focus children's attention. Ask children about such characteristics as color, size, shape, and texture. Ask how objects are the same or different.
- Stress feelings over knowledge. Help children connect emotionally through their sense of wonder and joy.
- Ask open-ended questions that challenge children's thinking and imagination. "What if you were a squirrel? How would you feel living in a tree?"
- Record children's observations. Take their dictation, have them make graphs and charts, invite them to draw a picture or take a photograph, and help them record sounds, for example. Encourage older children to write their observations in a journal.
- Model curiosity and exploration. Wonder aloud so children can hear your observing and thinking processes.



Learning activities

Plan learning activities that require children to observe and explore. Adapt them for use in winter, spring, and summer as well as fall.

Now you see it, now you don't

(3 year and older)

Here's what you need:

- small items such as a pencil, toy car, paperclip, ball, rock, acorn, spoon, penny
- tray
- towel or newspaper

1. Put three or four items on a tray.
2. Show the tray to a small group of children: "Look carefully at what's on the tray. I'll cover these up and ask you to remember what you saw."

3. After children have observed the items for 25-30 seconds, cover the tray with a towel or newspaper.
4. Ask: "What did you see?" Encourage children to tell the color, size, and type of material as well as the name of the object.
5. Repeat, using different items or more items. Or shorten or lengthen the time for observing. Or change the placement of the items.
6. Encourage children to play this game with each other.

Variation: Have children look at a corner of the room or the view outside a window. Then have them turn around and describe what they saw.



Leaf lotto

(3 years and older)

Here's what you need:

- 2 each of five different kinds of leaves, such as oak, elm, pecan or walnut, juniper, maple, pine
- clear adhesive paper
- 5 pieces of white posterboard, each 8 ½ by 11 inches
- scissors
- pocket folder
- marker

1. Place one of each different leaf on a piece of posterboard front side up. Cover each with clear adhesive. Place the posterboard leaves in one side of a pocket folder.
2. Cover each remaining leaf on both sides with clear adhesive. Trim around the edges. Place these leaves in the other side of the folder.
3. Label the folder "Leaf Lotto." Optional: Decorate the front of the folder with pictures of leaves.
4. Introduce the leaves to children by having them notice color, shape, and size. Point out the veins, edges, and arrangement (pecan and walnut).
5. Place the folder in the manipulative center. Encourage children to match the leaf pairs. Ask: "How did you decide that these two leaves matched?" "How are these leaves the same?" "How are they different?"

Match the smell

(3 years and older)

Here's what you need:

- 3 foods with strong smells, such as garlic, onion, peanuts, coffee beans, lemon, banana
- 3 small bowls
- mortar and pestle or other tools for crushing
- cotton balls
- 3 small paper cups
- tissue paper
- tape

1. Invite a small group of children to explore three foods with strong smells. Have them touch, squash, and smell each one.
2. Rub a little of one crushed food on a cotton ball. Place it in a paper cup and tape tissue paper over the top. Do the same with the other two.
3. Mix up the paper cups and ask children individually to identify each one by smell. They can compare the smell of the food in the cup with the smell of the squashed food, if they want.
Variation: Use herbs such as mint, bay leaf, dill, sage, tarragon, and basil. Talk about how herbs are used to add flavor to dishes. With older children, use products such as bubble gum, peppermint candy, popcorn, fried bacon, ginger cookie, and cinnamon applesauce. Talk about how each food is made and the flavorings used to give the food its particular taste and smell.

Tree nature walk

(3 years and older)

- plastic bags, one for each child
- camera
- notepad and pencil
- magnifying glass
- tree identification book
- glue or play clay

1. Explain to children that you're going on a nature walk on your playground or in a nearby park. Give each child a plastic bag for collecting items of interest. Explain that you will look at trees and items from them, such as leaves, bark, nuts, pine cones, and twigs.
2. On the walk, encourage children to observe two or more different trees, such as oak, juniper, pine, and pecan, for example. Study the bark and feel its texture. Crush a leaf to see if it has a distinct scent. Photograph each tree or take notes about its height, trunk width, and leaf color.
3. Have children use their findings, photos, and notes to identify the tree in a book or on the Internet. Save the photos to compare later to items collected from a walk in winter or spring.
4. Invite children to use the items to make a collage (using glue) or a table sculpture (using play clay as a base.). Optional: Add pipe cleaners, buttons, yarn or ribbon, steel wool, toothpicks, bits of wire or foil, beads, and other materials for variety in color, shape, and texture.

Leavings

(4 years and older)

Here's what you need:

- gallon plastic milk jug, or similar size container
- one sheet of newspaper
- used coffee grounds, brought by parents or staff from their morning's breakfast
- apple or orange peels from breakfast or snack
- dried leaves
- water
- long spoon or stick
- aluminum foil
- beans or other quick growing seeds

1. Cut off the top 3 inches of a gallon milk jug. (Save the top to use as a funnel in water play activities.)
2. Give each child a small piece of newspaper. Invite them to tear their piece into shreds, about the size of a finger.

3. Have children place the shredded newspaper into the jug.
4. Add the coffee grounds, fruit peels, dried leaves, and water, just enough to fill the jug. Stir the mixture.
5. Cover the jug with aluminum foil and punch two or three holes in it. Let it sit in a warm place. Explain that you're going to leave the mixture alone for a few days. Ask children to predict what will happen to it.
6. Once each day, have the children look inside it. Ask: Does it look the same? Does it smell the same? Feel the outside of the jug. Is it warmer or colder than the day before?
7. After a week or so, have children stir the mixture and describe it. Talk about what has happened in the jug. Compare the mixture in the jug to what's happening to leaves that fall on the ground outdoors. Explain that you have made *compost*, a kind of soil. Ask if the children know anyone who makes it at home.

8. Place a bean or other seed about a half inch under the soil. Add just enough water to moisten the mixture. Discard the foil, and place the jug on a sunny window sill. Ask children to predict what will happen to the seed.
9. Encourage children to observe the seed as it grows. They might measure and record the plant's height and photograph or sketch the seedling every day.
10. If children continue to show interest, discuss the function of soil, the stages of plant growth, and recycling.



Scavenger hunt

(3 years and older)

Here's what you need:

- fabrics and other items with different textures, such as smooth silk, rough burlap, fuzzy tennis ball, sticky adhesive tape, soft cotton, hard spoon
- paint chips or color samples from a local hardware store or print shop
- portable tape recorder

1. Plan a series of scavenger hunts, each focused on using a different sense for observation, in the playground or a park.

What about your own observation skills?

Before planning learning activities for children, consider your own observation skills. Try these activities:

- Close your eyes and visualize your classroom or a corner of the playground. Write or sketch your visualization. Then compare to see if you missed any details or visualized something in the wrong place.
- Practice using your five senses the next time you do a routine activity such as drinking a glass of water or doing laundry. What do you smell? What are the textures? What do you feel in your hand as the bones and muscles move?
- When you're in a meeting or grocery check-out line, notice the people around you. What are they wearing? How are they feeling? Why are they there?

After doing these activities, think about what you have learned about yourself. What can you apply to your work with children?

- **Touch.** Introduce children to different textures of items. Assign each child a different texture to find on the scavenger hunt. One child may look for smooth, while others look for rough, fuzzy, sticky, soft, and hard, for example.

- **Sight.** Pass out paint chips or samples, and challenge children to find natural items the same color. Or challenge children to find items by size, such as a leaf as long as your foot, a stem as thin as your little finger, or a pine cone as big as your fist.

- **Sound.** Challenge children to listen for different sounds and record them on a tape recorder. Sounds might include different birds and animals, traffic, gurgling water, church bells, and music from neighborhood radios.

- **Smell.** Encourage children to find items with different scents, such as leaves, flowers, and earth.

Variation: Hide a number of items in the play area in advance. Show children photos of the items, and send them off to look for them. Items might include a gold button, red crayon, green ribbon, broken rubber band, plastic bottle cap, and tennis ball.

Micro inspection

(4 years and older)

Here's what you need:

- yarn or string
- magnifying glass
- camera

1. Using yarn or string, mark 1-square-foot plots on the playground or in a park.

2. Divide children into pairs and give each a magnifying glass. Instruct them to observe everything living and nonliving in the square: green grass, dry grass, seeds, dirt, rocks, bottle caps, and pill bugs, for example. Have children take close-up pictures of their squares.

3. Encourage pairs of children to compare their findings and record them in a class graph or chart. What was the most common item? What about the least common? How did each item get to that spot?

Listen to paper

(4 years and older)

Here's what you need:

- an assortment of different types of paper, such as newspaper, typing paper, cardboard, tissue paper
- scissors
- screen or other vision barrier

1. Demonstrate three things you can do to a piece of newspaper: cut it, tear it, and crumple it. As you demonstrate, encourage children to pay attention to each sound.
2. Stand behind a screen and do one of the three things. Ask children to listen and identify what you are doing by the sound.
3. Repeat the sounds at random, having children identify what you're doing.
4. Show children the other types of paper. Tear or cut each one, while children listen.

5. Invite a child to choose a type of paper, tear or cut it behind the screen, and see if the other children can identify the type of paper by sound only. Talk about the difference in sounds.
6. Encourage children to gather up the torn, cut, and crumpled bits of paper and make a collage.

Variation: Tape record different familiar sounds, such as a whistle, a door closing, water running from a faucet, a dog barking, a telephone ringing, and hands clapping. Play the tape and ask children to identify.

Safety tips for nature walks

- Check for rules governing the park or natural area. If collecting is prohibited, rely on photos, sketches, and audio tapes to record observations.
- Scout the area in advance to identify the most appropriate route and identify any hazards, such as insects and poison ivy. Look for restroom facilities and plan accordingly.
- Discuss safe items to collect. Don't allow children to pick up litter.
- Inform parents about the walk in advance and advise them to dress their children in appropriate clothing. Long pants, athletic shoes, and socks are recommended.
- Carry a backpack with supplies. Always include a first-aid kit and emergency information on each child. You might also want to take drinking water, a cell phone, and a light snack.

Adapted from *My Big World of Wonder* by Sherri Griffin.

Observing feelings

(Age 4 and older)

Here's what you need:

- magazines
- scissors
- posterboard
- paste

1. Encourage children to find pictures of people's faces in magazines. Look for faces that show angry, sad, scared, and happy. Discuss facial features and behaviors that go with each emotion.
2. Invite children to cut out and paste all the sad faces on a piece of posterboard. Do the same with pictures of the other three emotions. Label each posterboard.
3. Talk about situations that might cause children to feel angry, sad, or scared. Explain that those feelings are natural and what they can do if they need help. Make it clear that it is not OK for someone who feels angry to take those feelings out on another person. We can express anger appropriately by talking with someone we trust or by writing about it.

Variation: Have children arrange cut-out features from different faces on paper plates to depict different feelings. Or ask children to create a sculpture or painting that represents a feeling such as sad or happy.



Map from memory

(6 years and older)

Here's what you need:

- paper
- pencils

1. Demonstrate to children how to make a simple map by drawing an outline of the classroom on a sheet of paper. Draw shapes to represent tables, chairs, doors, and other features.
2. Invite children to draw a map of another familiar place such as the playground.
3. Have children check their maps against the actual location. Discuss what they might have been missed or drawn out of place. Ask why it's important to observe accurately.

Cabbage chemistry

(6 years and older)

Here's what you need:

- red cabbage
- pot of water
- hot plate
- baking soda
- vinegar
- 3 transparent glasses
- assortment of other substances such as lemon juice, flour, rain water, milk, aspirin, soda water, different soaps and shampoos

Caution: Do not use dangerous substances such as bleach or ammonia.

1. Boil a few cabbage leaves for about a half hour until the water is red. Let the water cool. Remove the leaves. What is left is a dye called *litmus*.
2. Pour a small amount of litmus into two glasses. In one, pour in a few drops of vinegar. What happens? Explain that the yellow color indicates that the vinegar is an *acid*.

3. In the other glass, put in a little baking soda. What happens? Explain that the blue color indicates that baking soda is a *base*.
4. Talk about why it might be important to know whether a substance is an acid or base. Consider digestion of different foods and growing plants in different soils, for example. Have children look up the words *chemistry* and *chemical*.
5. Empty the two glasses and encourage children to test other substances to see if they're an acid or a base.

What's your favorite?

(6 years and older)

Here's what you need:

- computer or paper and pencil
- printer or copier

1. Invite children to do a survey or conduct a poll to find out what other children are thinking about a topic. Explain that finding out people's opinions is important so they can live together peaceably in a community.
2. Ask children to brainstorm questions to ask: Which season of the year do you like best? What's your favorite tree? What's your favorite activity outdoors in the fall? What's your favorite kind of food to eat when it's cold and rainy?
3. As a group, decide on two or three questions to ask another class. For ease in recording and tallying, write down three or four possible choices to each question. Four choices for favorite food, for example, might be oatmeal, soup, ice cream, or pickles.
4. Print out the questions and make enough copies for each child.

5. After children take the poll, tally the answers in a chart or graph. Share the results with the class whose opinions were sought.
6. Look in the newspaper for articles that mention polls of voters taken before the Nov. 7 election. Look especially for issues concerning schools or parks that children can identify with. Discuss how these polls can inform elected officials or affect citizens' decisions to cast their votes.

Variation: Invite children to conduct a survey about a concern in your school or community that they might be able to do something about, such as planting a tree or painting a bench to improve the playground. Obtain necessary approvals in advance. Help children keep their expectations realistic. Consider how you might cover any costs.

Resources

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