

Leaves, Seeds, and Fruits Background and K-6 Lesson Plans



Contents

Leaves, Seeds and Fruits is a wonderful science activity for any time of year. With lesson plans for grades K-6, the whole school can get involved. The Background information contains illustrations, vocabulary and instructions for a Word Wall with advanced vocabulary for the upper grades. We are grateful to master teacher Judy Chaddick for these lessons, as well as her beautiful illustrations.

This guide contains:

Leaves: Background for Teachers

Seeds, Flowers, Fruits, Buds: Background for Teachers

Scientific Observation and Journaling for Grades K-1: Simple Leaf

Scientific Observation and Journaling for Grades 2-3: Simple Leaf

Scientific Observation and Journaling for Grade 4: Lobed Leaf

Scientific Observation and Journaling for Grades 5-6: Compound Leaf

Follow-up Activity for Grades K-6: Observing and Classifying Leaves

Earth's Birthday Project

Leaves: Background for Teachers



1 Leaf Word Wall

Names of the Parts of Leaves

Blade — flat part of the leaf

Edge — outer rim or margin of the leaf

Leaf bud — next year's leaf, encased in scales and located just above each petiole

Leaflet — the blades attached to the petiole of a compound leaf

Petiole — the part of the leaf that attaches to the twig; the leafstalk

Scale — a small, specialized leaf that protects a leaf bud

Stoma — small hole on the underside of the leaf through which air and water pass in and out
(*stomata* is the plural)

Veins — tubes that carry water and food

Names for Edges

Entire — smooth

Serrated — notched with small indentations

Toothed — notched with deep indentations and points

Lobed — notched with deep, rounded indentations

Kinds of Leaves

Simple — a leaf with a single blade

Compound — three or more blades or leaflets attached to a petiole

Palmately compound — four or more leaflets attached at a center point

Pinnately compound — three or more leaflets attached on either side of a stalk or petiole

Arrangements

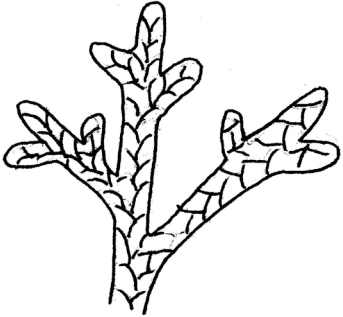
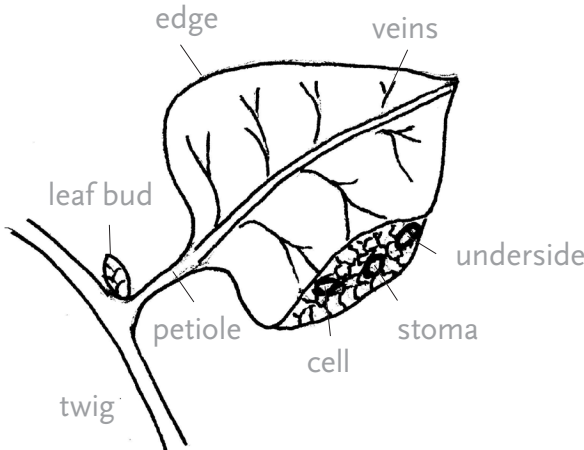
Alternate — single leaves attached alternately to a petiole, twig, or stem

Opposite — paired leaves, one on each side of the petiole, twig, or stem

Whorled — two leaves attached around a petiole, twig, or stem

Basal — leaves attached at the base of a plant

Parts of Leaves



scale-like

needle-like

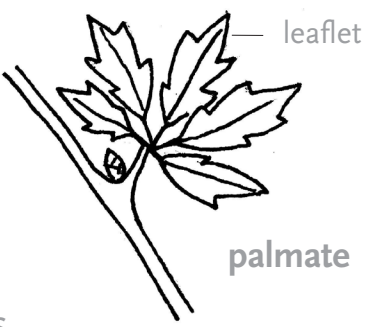
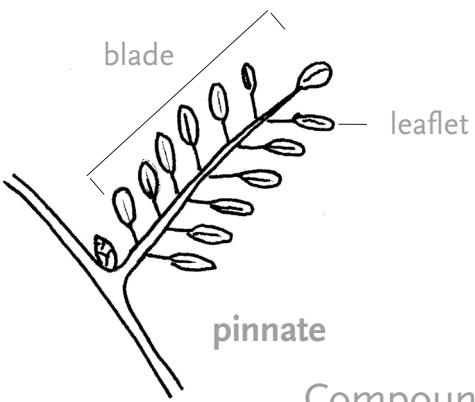
Broadleaf (deciduous)

Conifer (evergreen)

Leaf Composition



Simple Leaves

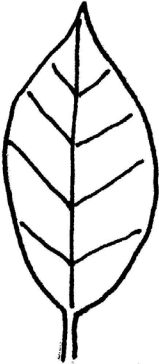


pinnate

palmate

Compound Leaves

Leaf Edges



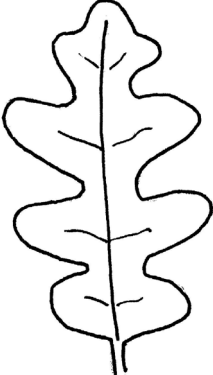
Entire



Serrated

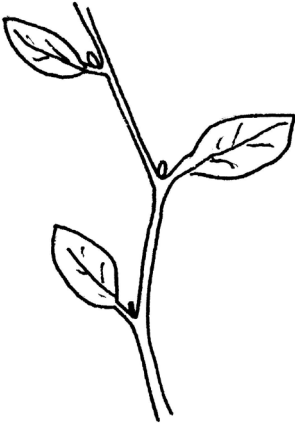


Toothed

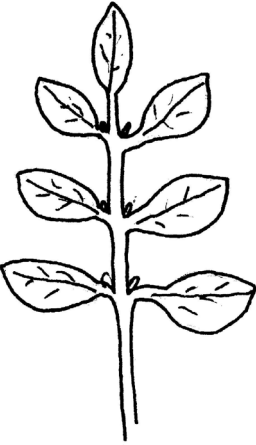


Lobed

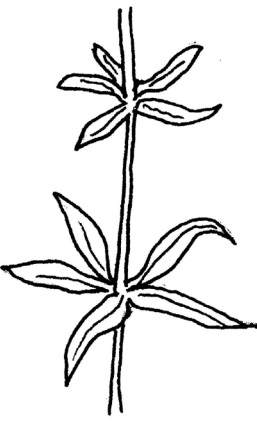
Leaf Arrangement



Alternate



Opposite



Whorled



Basal

Categories of Trees and Other Plants

Deciduous — a plant that loses all of its leaves in the fall or at the end of its growing season

Evergreen — a plant that doesn't lose all of its leaves (or needles or scales) at the same time

More Plant Words

Cell — the smallest unit that makes up the leaf and all other plant parts

Chlorophyll [KLORE-oh-fill] — the green substance that colors leaves and stems

Phloem [FLOW-em] — tubes that carry food (sugar) from leaves to roots

Photosynthesis — the chemical process by which green plants use chlorophyll and sunlight to convert carbon dioxide and water into food (simple sugars)

Transpiration — a process in which water passes through the stomata in the leaf and evaporates into the air

Xylem [ZI-lem] — also called sapwood, the tubes that bring water and minerals up from the roots to the leaves

2 Leaf Functions (What Leaves Do for the Plant)

- Leaves make food for the plant in a chemical process called photosynthesis:
 - 1 The roots send water and minerals to the leaves through special tubes in the trunk or stalk (sapwood or xylem).
 - 2 Leaves absorb air through little holes on their undersides (stomata).
 - 3 The energy of the sun works with green chlorophyll, water, and the carbon dioxide in air to make food (sugars) for the plant.
 - 4 The food travels to all parts of the plant through leaf veins and phloem.
 - 5 At night the leaves release oxygen into the air through the stomata.
- Leaves also release water through their stomata in a process called transpiration.

3 Importance of Leaves (What Leaves Do for the Earth)

- Leaves provide food for humans and other animals. Some leaves that are good to eat include peppermint, parsley, lettuce, spinach, cabbage, kale, and chard.
- All animals depend on plants for the oxygen they breathe.
- The leaves of trees and shrubs provide shade to keep houses cool.
- Leaves remove carbon dioxide (a greenhouse gas) from air, which helps keep the Earth cool (reduces global warming).

Fun experiments and complete background on photosynthesis and transpiration:

<http://earthsbirthday.org/more-bugs/sunflowers-sprouts-gardens>



Earth's Birthday Project

Seeds, Flowers, Fruits, Buds: Background for Teachers

1 Word Wall

Seeds Grades K–6

Cotyledon (caw-duh-LEE-dun) – a part of the seed that stores nutrients (food) and will become a seed leaf when the seed germinates

Dormant – resting during the winter, as buds and seeds do

Embryo – a new, undeveloped plant contained in a seed

Germinate – begin to grow after a period of dormancy (To germinate, a seed needs water and oxygen; it also needs to be at the right temperature and exposed to the right amount of light.)

Hilum (HIGH-lum) – the scar that marks the place where a seed was attached to a seed pod

Seed – the part of a plant that contains the embryo and nutrients that will help it grow

Seed leaf – a leaf-like part of the seed sprout that grows on the stem just below the first true leaves

Seed coat – the outer covering of the seed, also called the *testa*

Sprout – a young plant that has just emerged from its seed

Grades 4–6

Epicotyl (EH-puh-cawd-ul) – the part of the embryo that will develop into the plant's stem and its first true leaves

Radicle – the part of the seed that will become the plant's first root (The radicle is connected to the base of the tiny, rudimentary stem of the epicotyl.)

Flowers Grades K–6

Ovary – the ovule-bearing part of a plant that ripens into a fruit

Ovule (AHV-yool) – the egg that develops into a seed

Petals – soft, often colorful parts of a flower that sometimes look like leaves

Pistil or *Carpel* – the female part of a flower

Pollen – tiny, powdery particles (grains) formed by the stamen (male part of the flower)

Sepals – green, petal-like parts below the petals that formed the flower's bud cover

Stamen – the male part of a flower

Fruits Grades K–6

Berry – the simplest kind of fleshy fruit, in which seeds are imbedded directly in the pericarp (chile, tomato, bell pepper, grape) (Cucumbers, watermelons, and citrus fruits are modified berries; raspberries and blackberries are aggregate fruits made up of many tiny berries.)

Fruit – the ripened ovary or ovaries of a flower

Simple fruits are formed from a single flower ovary; they may be fleshy (apple, peach, pear, bell pepper, blueberry) or dry (nut, bean); and they may contain one or more (often many) seeds.

Aggregate fruits are formed from a compound flower containing many ovaries (raspberry, blackberry).

Nut – a dry, one-seeded fruit with a woody pericarp (acorn, beechnut)

Pericarp (PAIR-ih-carp) – another name for fruit; the ripened wall of a flower’s ovary, which may be fleshy (orange, apple, banana, melon), dry (bean, pea), or hard (nut, sunflower seed)

Pod – a dry pericarp that contains several seeds often lined up in a row (bean or pea pod, peanut shell, locust or catalpa pod, milkweed pod)

Grades 4–6

Achene (uh-KEEN) – a small, dry fruit with one seed and a thin pericarp (sunflower seed, dandelion seed)

Drupe (DROOP) – a fleshy fruit with a thin exocarp and a hard endocarp that contains a single seed (cherry, peach, plum, olive, almond, pistachio, coconut, pecan, walnut)

Hypanthium (high-PAN-thee-um) – the fleshy layer surrounding the pericarp of a pome (The hypanthium develops from the bases of the flower’s petals and sepals.)

Pericarp layers

Exocarp (EX-o-carp) – the outermost layer of the pericarp, a peach’s peel, an orange’s zest (also called the citrus flavedo), a banana’s peel, or a watermelon’s rind

Mesocarp (MEH-zuh-carp) – the middle layer of the pericarp, a peach’s flesh, the white material under the orange’s zest

Endocarp (EN-duh-carp) – the inner layer of the pericarp, which directly surrounds the seeds; the orange’s sections, or the hard, wrinkled “shell” around a stone fruit’s seed (peach, plum, pecan, walnut); in some fruits, the mesocarp and endocarp are barely distinguishable (watermelon)

Pome (POHM) – a fleshy fruit with a tough core that usually has five seeds, in which the pericarp is encased by an additional layer, called the hypanthium (apple, pear, quince)

Buds Grades 4–6

Annual growth scar or *terminal bud scale scar* – the place on the twig where a terminal bud was located (The space between these scars is one year’s growth.)

Bud – undeveloped leaf or flower

Flower scar – the place where a flower was attached to the twig

Lateral bud – a bud located on the side of the stem or twig at the base of a leaf

Leaf scar – the place where a leaf was attached to the twig

Lenticel (LEN-tih-cel) – a small hole or *pore* on a stem or twig through which air is absorbed

Pith – the inner part of the stem or twig; may be in the shape of a star, triangle, or circle and may be chambered

Scales – modified leaves that cover and protect buds of woody plants in cold climates

Terminal bud – the bud located at the tip of the stem or twig

Bud Covers Grades 4–6

Hairy – the scaly or naked bud is protected by hairs

Naked – the bud is not covered by scales

Scaly – scales cover and protect the embryonic parts of the bud

Kinds of Plants with Seeds Grades 4–6

Gymnosperms – plants that don't produce flowers and fruits; plants without ovaries, whose seeds are “naked”; *conifers*

Cone – the part of a conifer that contains reproductive structures

Female cone – (seed cone) the woody cone that contains ovules that become seeds when pollinated (The juniper's female cone is called a *juniper berry*.)

Male cone – (pollen cone) small, papery cone that contains pollen; usually clustered below the female cones or on a separate plant

Scales – the individual plates of a cone

Angiosperms – plants whose seeds are enclosed in fruits that develop from the ovaries in flowers

Monocot – a subclass of angiosperm with one cotyledon in each seed and leaves with parallel veins (corn, lily, grass)

Dicot – subclass of angiosperm with two cotyledons in each seed and leaves with a midrib and branching veins (bean, sunflower, cottonwood tree)

2 Fruit, Flower, Seed Functions

Grades K–6

- Flowers produce pollen and ovules, which join to become seeds.
- Seeds produce new plants.

- Fruits protect seeds and attract animals that help seeds scatter and germinate.
- Fruits, flowers, and seeds provide food for many animals, including humans.

Grades 4–6

- A seed is formed in a flower when pollen *fertilizes* an ovule.
 - Pollen is produced by the stamen.
 - Pollen is transferred from the stamen to the pistil (or carpel) of the same or another flower by bat, bird, insect, wind, gravity or other means.
 - It lands on the pistil, enters the ovary, and joins with an ovule.
- Seeds (fertilized ovules) *ripen*, or mature, as the ovary swells and forms a fruit.
- Seeds rest for a time after they ripen, before they can germinate. This is called the dormant time.
- Seeds drop and may be *dispersed* (scattered) to new locations, where they germinate.

3 Ways that Seeds Disperse

Grades K–6

Seeds are dispersed to new places by several different methods.

- *Animals* disperse:
 - Hitchhikers – *burs* and other seeds whose coats have hooks or spikes, which stick to the fur, feathers or feet of animals (cockleburs, burdocks, goatheads);
 - Fruits – eaten by animals, which deposit the fruit seeds with their dung (apple, mulberry, cherry, juniper berry);
 - Nuts and S eeds – buried underground by squirrels, mice, birds, and other animals, which often do not return to eat them (acorn, walnut, piñon seed).
- *Wind* carries winged seeds (elm, maple, pine), parachute seeds (dandelion, salsify), and cottony seeds (cottonwood, poplar).
- *Water* floats seeds away from their mother plants and deposit them on beaches and beside rivers and streams (cottonwood, coconut).

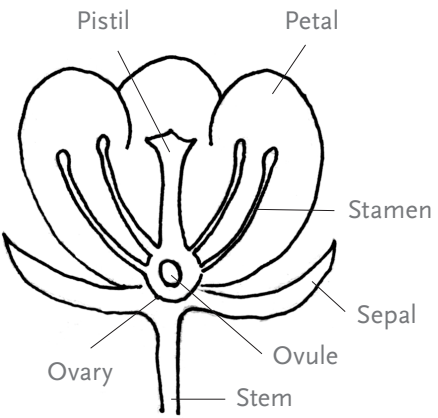
Grades 4–6

Anemochory (un-NEEM-uh-CORE-ee) – seed dispersal by wind

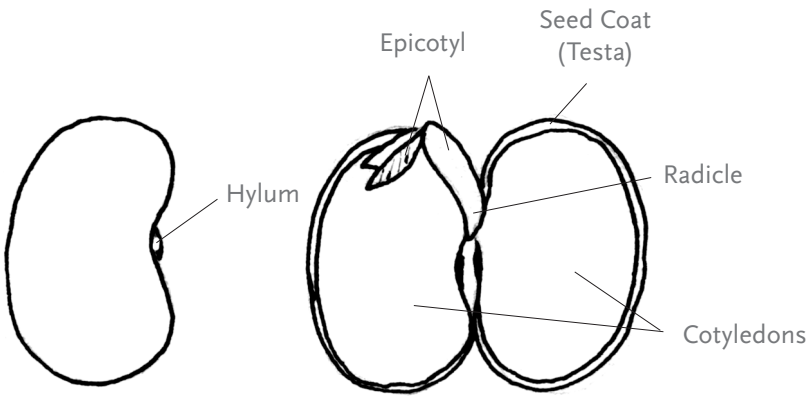
Hydrochory (HIGH-droh-CORE-ee) – seed dispersal by water

Zoochory (ZO-uh-CORE-ee) – seed dispersal by animals

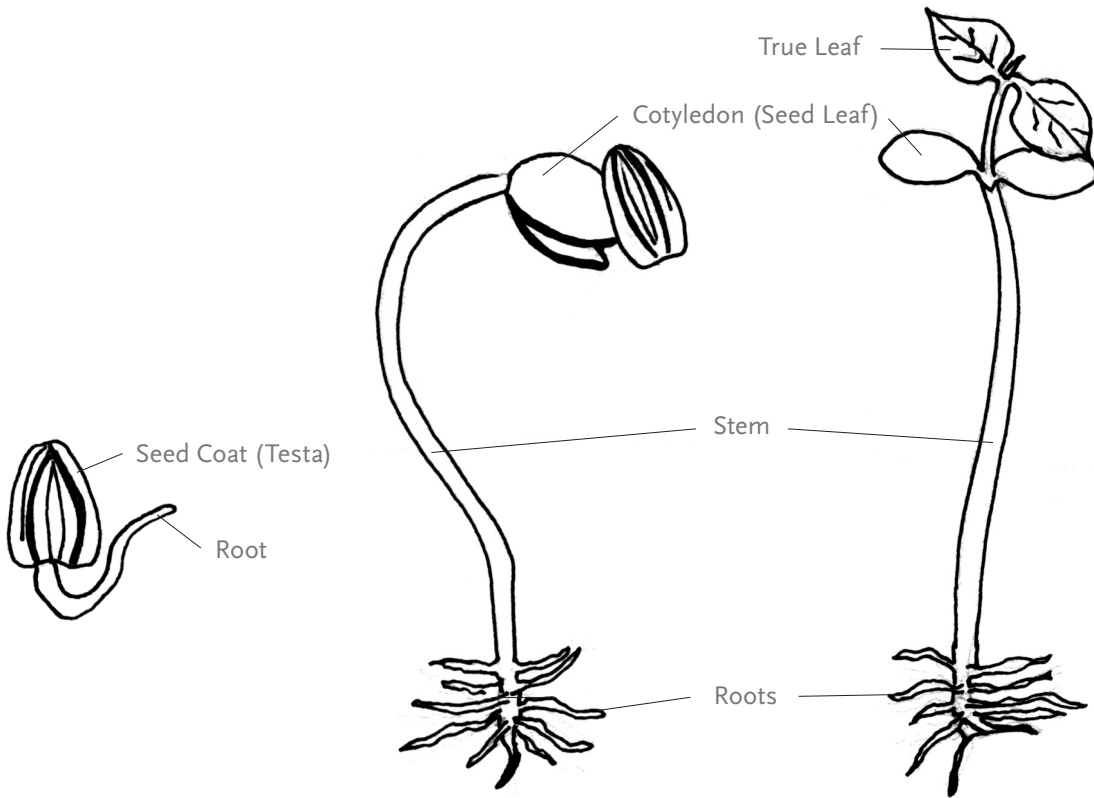
Flower and Seeds



Flower

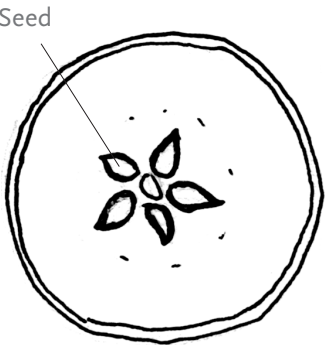


Bean (example of a seed)

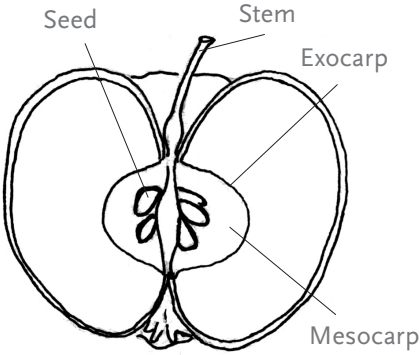


Germinating Sunflower Seed (Sprout)

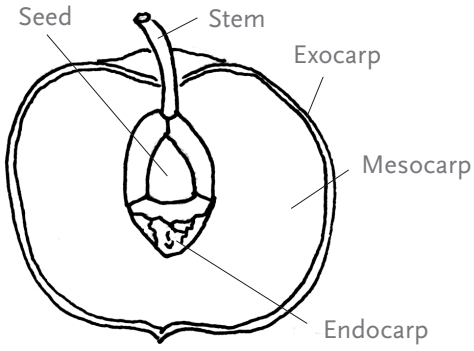
Fruits



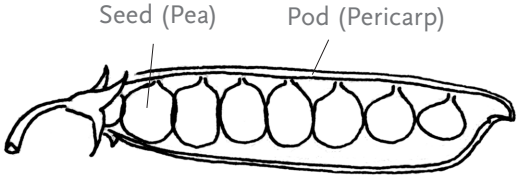
Apple
(horizontal cross section)



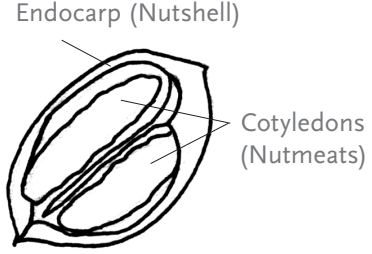
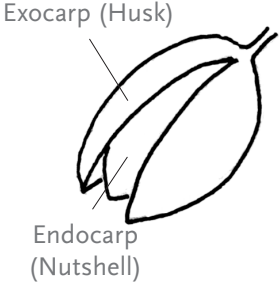
Apple
(vertical cross section)



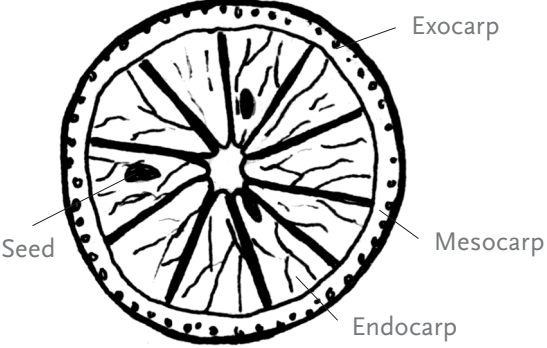
Peach
(vertical cross section)



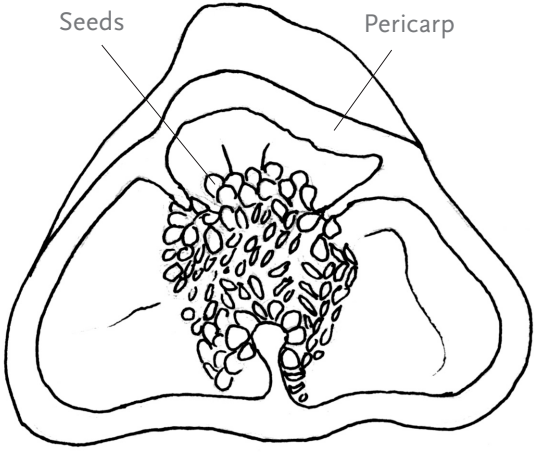
Pea



Pecan

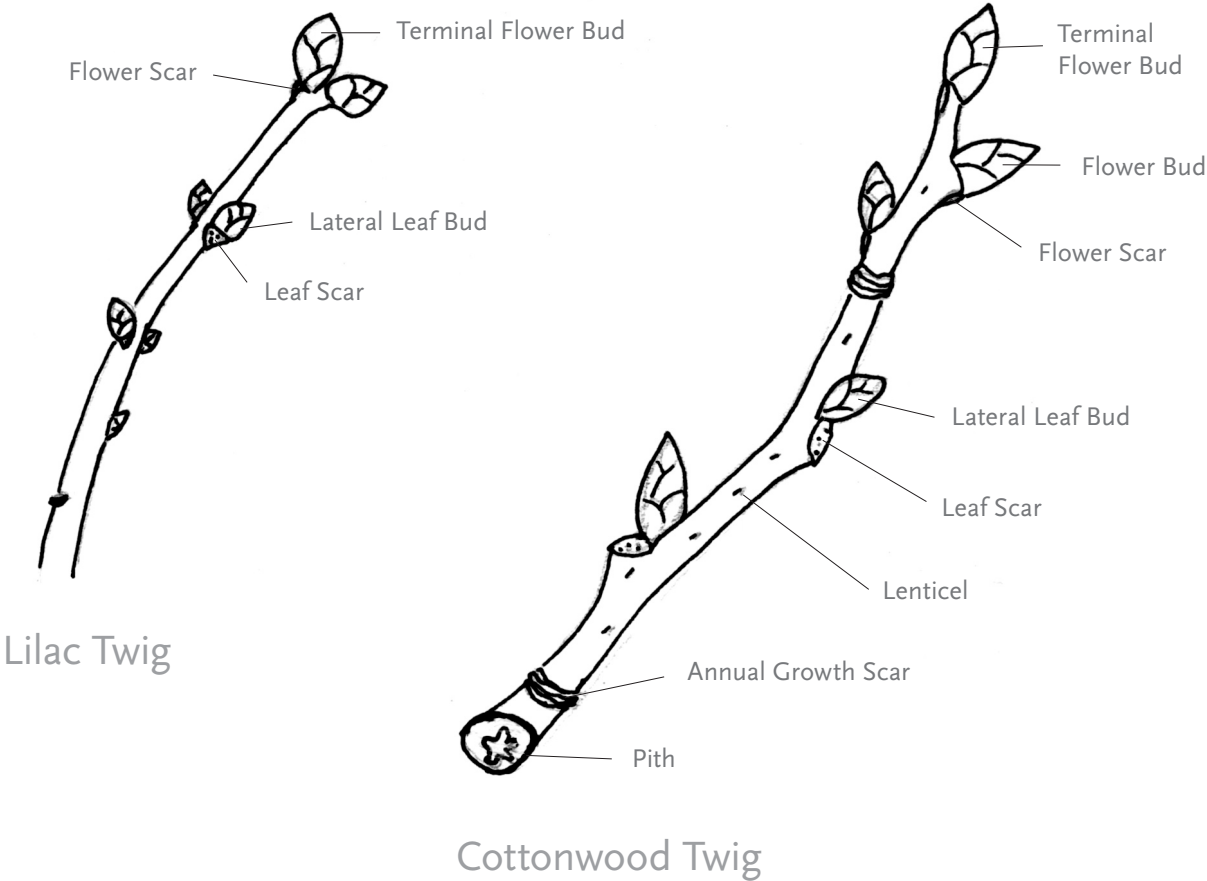


Orange
(horizontal cross section)



Bell Pepper
(horizontal cross section)

Twigs and Buds



Scientific Observation and Journaling for Grades K–1

Lesson 1: Simple Leaf



Teacher Preparation Bring leaves to class, one for each student, or take students outdoors to pick them. All leaves should come from the same kind of tree or bush. Store them in a plastic bag in the refrigerator until you're ready to use them. **Optional:** cut a branch to show your students how leaves are arranged.

Materials For each student, one leaf, pencil, science journal, one crayon (optional)

Time One class period

Procedure

1. **What do we know about leaves?** Draw a web on your board. Ask students to share what they know about leaves as you record answers.
2. Pass out science journals and leaves
3. Students **observe** and you **write lists of descriptive words and numbers** on the board. Ask guiding questions to inspire lists: *What shape and color is your leaf? What does it smell like? What sound does it make when you drop it? How does it feel to your fingertip (rough, smooth, bumpy)? How many stems, notches, veins, spots does it have? How many colors?* Then **students write** lists in their journals.
4. **Demonstrate scientific drawing** (see teacher's guide). **Students then draw** their leaves, paying careful attention to the shape, stem, and veins. **Optional:** on unlined paper, have students trace leaves or make a rubbing (place leaf under paper and rub top of paper with a crayon). *Are you looking closely before you draw? Keep looking and draw what you see. Have you drawn the stem and the veins?* **Optional:** With first graders, try enlarging drawings while keeping them to scale (bigger but the same shape).
5. **Demonstrate labeling.** Draw lines between words and parts: *stem, vein, edge.* **Students then label** their drawings.
6. **Reflect on observations.** Practice making **analogies.** *What does your leaf look like? What does it remind you of?* Write a list of answers on your board and then a sentence or two: "The shape of the leaf reminds me of ____." "The design on the leaf looks like ____." Students **write a sentence** in their journals. **Optional:** With kindergarten students, try one simple sentence, "It is like a ____."
7. **Close with a quick class discussion.** *What did you like about this activity? What did you learn? Was anything difficult or confusing?* **Optional:** First-graders may add a sentence or two to their reflections. "I liked ____."
8. Clean-up by collecting leaves to compost.

Scientific Observation and Journaling for Grades 2–3

Lesson 1: Simple Leaf



Teacher Preparation Bring simple leaves to class, one for each student, or take students outdoors to pick them. All leaves should come from the same kind of tree or bush. Store them in a plastic bag in the refrigerator until you're ready to use them. **Optional:** cut a branch to show your students how the leaves are arranged.

Materials For each student, one leaf, pencil, science journal, colored pencils

Time One or two class periods

Procedure

1. **What do we know about leaves?** Draw a web on your board. Ask students to share what they know about leaves as you record answers. Then pass out science journals and leaves.
2. Have students **examine leaves and describe their qualities** as you **write a list** of their observations on the board. *What shape and color is your leaf? What does it smell like? How does it feel to your fingertip (rough, smooth, bumpy)? Is it marked? What is the edge like?* Then students **write their lists** in their journals.
3. Next have students **count, measure, and record numbers in their journals**. *What can you count? How many stems, notches, veins, spots, colors does your leaf have?* Have students trace their leaf on the first grid in their journal, then measure length and width to the half square.
4. **Demonstrate scientific drawing** (see teacher's guide). Then have students **draw** leaves on the second grid, paying careful attention to the shape, edge, petiole, and veins. *Are you looking closely? Keep looking and draw what you see.* **Optional:** after drawing in the journal, have students draw on unlined paper.
5. **Demonstrate labeling**. Draw lines between words and parts: *petiole, blade, veins, edge; entire, serrated or toothed edge or lobe*. Students then **label** their drawings. Have them use **colored pencils** to color the leaf accurately.
6. Have students **enlarging** their drawing to 2× (see the teacher's guide for step-by-step instructions).
7. **Reflect on observations**. Practice making **analogies**, describing **feelings and memories**, and **asking questions**. *What does your leaf look like? What does it remind you of? "The shape of the leaf reminds me of ____." "The design on the leaf looks like ____."* Students should **write three or more sentences** in their journals.
8. **Clean-up** by collecting leaves to compost.
9. **Assess students' work** by having them complete the rubric and then complete it yourself for comparison. Grading is optional.
10. **Collect feedback** with a quick class discussion. *What did you like about this activity? What did you learn? Was anything difficult or confusing?*

Scientific Observation and Journaling for Grade 4

Lesson 1: Lobed or Toothed Leaf



Teacher Preparation Bring leaves to class, one for each student, or take students outdoors to pick them. All leaves should come from the same kind of tree or bush. Store them in plastic bags in the refrigerator until you're ready to use them.

Optional: Cut one branch to show how the leaves are arranged.

Materials For each student, one leaf, pencil, colored pencils, science journal

Time One or two class periods

Procedure

1. **What do we know about leaves?** Draw a web on your board. Ask students to share what they know about leaves as you record answers.
2. Students **observe** and you **write a list of descriptive words** on the board as they volunteer their observations. Use guiding questions, for example: *Describe the shape, color, edge and veins of your leaf. What does it smell like? What sound does it make when you drop it? How does it feel to your fingertip (rough, smooth, bumpy)? Does it have a pattern? Is it symmetrical?* Then students **write seven or more words** in their journal.
3. **Count and measure:** On a sheet of grid paper, have the students **trace** their leaf at the top of the page. Ask them to **count** as many features as they can identify—for example, the petiole, lobes or teeth, main veins, and colors. Have them **measure** the length and width and record as decimal numbers and **estimate** the area of the leaf.
4. **Demonstrate scientific drawing.** Then have students **draw** their leaves in the journals, paying careful attention to the shape, edge, petiole, and veins. *Look closely! Draw what you see.*
5. Have students **label** their drawings—*petiole, blade, veins, lobed or toothed edge*—and use colored pencils to **color** the leaf accurately.
6. Have students practice **enlarging and reducing:** using the same paper that the leaf was traced on, draw the leaf at twice its actual size, and then draw it at half its actual size.
7. **Reflection.** Practice making **analogies.** *What does your leaf look like? What does it remind you of?* Write a list of answers on your board and then a sentence or two: “The shape of the leaf reminds me of _____.” “The design on the leaf looks like _____.” Also encourage students to write about their **feelings** about the leaf or the activity and a **memory, question** or **new discovery.** Students should **write one or more paragraphs or a poem** on their journal page.
8. **Clean-up** by collecting leaves to compost.
9. **Assess students' work** by having them complete the student rubric. Then complete it yourself for comparison. Grading is optional.
10. **Close** with a class discussion. *What did you like about this activity? What did you learn? Was anything difficult or confusing? How would you do it differently next time?*

Scientific Observation and Journaling for Grades 5–6

Lesson 1: Compound Leaf



Teacher Preparation Bring leaves to class, one for each student, or take students outdoors to pick them. All leaves should come from the same kind of tree or bush. Store them in plastic bags in the refrigerator until you're ready to use them.

Optional: Cut one branch to show students how the leaves are arranged.

Materials For each student, one leaf, pencil, ruler, colored pencils, science journal

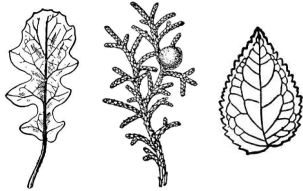
Time Two class periods.

Procedure

1. **What do we know about leaves?** Draw a web on your board. Ask students to share what they know about leaves as you record answers.
2. **Qualitative observations:** Students **observe** and you write a **list of descriptive words** on the board as they volunteer their observations. Use guiding questions (for example, *Describe the shape, edge, colors, and veins of your leaf. Describe the arrangement of leaflets on the petiole. Is it symmetrical? Can you see the cells and stomata? What does your leaf smell like? What is the texture?*). Then students **write a list of at least ten words** in their journals.
3. **Quantitative observations:** Students count as many features as they can identify and record numbers in their journals (for example: the number of petioles, blades, leaflets, main veins, and colors). Then they **measure** the width and length of their leaf in inches and centimeters. **Sixth graders write the ratio** of width to length in both units and convert the ratios to decimal numbers (divide numerators by denominators). *Are your decimal numbers the same? Why?*
4. **Demonstrate scientific drawing.** Then have students **draw** their compound leaf on the grid paper, paying careful attention to the shape, edge, and veins of the leaflets and their arrangement on the petiole. If the leaf is large they will have to draw smaller than life size. *Are you looking closely and drawing slowly and carefully?* Have students **label** the parts of the leaf and use colored pencils to color the drawing accurately.
5. Have students practice **enlarging to scale** on a separate piece of graph paper. Start with a leaflet and draw to 2 \times . (Trace the leaflet and measure its length and width. Make the length and width of the enlargement twice as long.) Try again at 3 \times and $\frac{1}{2}\times$. **Optional:** *Does the ratio of width to length change when you enlarge and reduce?*
6. **Reflection.** Practice making **analogies**. *What do your leaf and its leaflets look like? What do they remind you of?* Also encourage students to write about their feelings about the leaf or the activity, **memories, questions** or **new discoveries**. Students should **write one or more paragraphs and/or a poem** in their journals.
7. **Assess work** by having each student complete the student rubric. Collect the journals and rubrics and complete the rubrics yourself for comparison. Grading is optional.
8. **Close** with a class discussion in which each student shares something with the class. *What did you like about this activity? What did you learn? Was anything difficult or confusing? What would you do differently next time?*

Scientific Observation and Journaling for Grades K–6

Follow-up Activity: Observing and Classifying Leaves



Objectives (1) Students will learn to observe more closely. (2) They will develop skill at classifying. (3) And they will discover the diversity of leaves.

Time Two class periods

Materials For each student: 10 different leaves, 11" × 17" white copy paper, pencil and markers. For pairs of students: butcher paper or newsprint, pencils and markers.

Getting Started

1. **Background** Scientists organize nature through an international system of *binary classification*. This system consists of dividing objects or organisms into two groups, based on whether they are alike or different in one particular way. Groups may be subdivided again and again, always based on one particular difference.
2. **If students have not had experience classifying, begin with the shoe game.*** Have everyone stand in a group at the board. Each student looks at the variety of shoes that the students are wearing and the class decides how they will divide the shoes into two groups. Have students pick one attribute to sort on, such as shoelaces. Students will move into two groups: "shoelaces" and "no shoelaces."
3. At the top of the board, write "Shoes" and put a circle around it. Draw two lines to two more circles. Write "Shoelaces" in one circle and "No Shoelaces" in the other.
4. Have each of the two groups decide on a second attribute (such as brown, stripes, two or more colors, soft sole or hard sole) and divide into two smaller groups—for a total of four groups. Write the new attributes on the board. Keep repeating the process. The game ends when everyone is standing alone (unless two or more students have the exact same shoes and stay in a group together).

* For older students, who may feel some sensitivity about their shoes, work with favorite writing instrument. This should give you a good variety of pens, pencils, and markers.

Classifying Leaves

1. Remind students about their science journaling activities. Classifying uses the same skills that were developed by drawing and writing about leaves.
2. Ask each student to collect ten leaves from several different plants and bring them to school in a plastic bag.

3. Pass out the 11" × 17" paper and have each student draw a circle at the top of their sheet (using the widest side as the top) and write the word "Leaves" in it.
4. Have each student (1) choose one attribute—such as green, big, lobed—and divide the leaves into two groups; then (2) draw two circles below the first circle and label them with the attributes ("Green" and "Not Green," etc.); and (3) place the two groups of leaves on top of the two new circles. They may be piled on top of each other.
5. Have students choose new attributes for each circle of leaves and draw lines down and make two new circles under each of the first two circles. Now each student has seven circles.
6. Have students continue labeling circles, sorting leaves, choosing new attributes, drawing new circles, and so forth until every leaf has its own circle.
7. When students have finished classifying, have them use markers to darken their pencil lines.
8. Discuss the activity: *What was difficult? What did you learn? What would you do differently if you did it again?*

Classifying Leaves in Teams of Two

1. Divide students into small groups of two or three. Have them combine their leaves and go through the classification activity again using a large sheet of Kraft or butcher paper.
2. If students notice that there is more than one leaf from a particular species of tree or plant, they may wish to place them in the same circle, even though they are not exactly alike. In the circle, they should write the attributes that are common to all of these leaves.
3. Students may wish to glue or tape the leaves to the paper after they finish classifying them.
4. Discuss the activity: *What was hard? Did you learn something new this time?*
5. If you have access to plant or animal guides, show students how an unknown specimen can be identified by using the identification key.

Science Journals: Seasons and Specimens for K-6

Five specimens for five science journal entries throughout the year – encourage your students to try both scientific description & drawing.

Grade	Early Fall	Late Fall	Winter	Early Spring	Late Spring
K	Simple leaf	Lima or other large bean	Banana (whole fruit and cross section)	Ladybugs	Student's choice (outdoors)
1	Simple leaf	Anasazi bean, dried corn, or other seed	Apple (whole fruit and cross section)	Ants	Student's choice (outdoors)
2	Simple leaf	Sunflower seed or other seed	Lime or lemon (whole fruit and cross section)	Caterpillars	Student's choice (outdoors)
3	Simple leaf	Dried sunflower head or dried weed	Orange (whole fruit and cross section)	Hornworm	Student's choice (outdoors)
4	Lobed or toothed leaf	Buds on a twig	Pear (whole fruit and cross section)	Redworms	Student's choice (outdoors)
5	Compound leaf	Buds on a twig or juniper scales, berries, cones	Kiwi (many views)	Bessbug	Student's choice (outdoors)
6	Compound leaf	Dried seed pod (locust, pine cone, milkweed, etc.)	Bell pepper (many views)	Sunflower seeds and sprouts	Student's choice (outdoors)