

Instructional Recipe

How Do a Plant's Parts Help it Survive?

1st Grade or 2nd Grade, Science & Language Arts



Online research and information resources available through a partnership between the Texas State Library and Archives Commission, the Texas Education Agency and Education Service Center, Region 20 <http://web.esc20.net/k12databases>

Step 1 – Ask

Objectives: Students will identify parts of plants. Students will analyze and explain how various plant parts function. Students will predict what would happen if specific parts were not present.

Introduction: Do a teacher demonstration experiment to illustrate how plants, such as celery, move water up the stalk and into the leaves. See the following articles from Searchasaurus for sample experiments:

See plants move water. Scientific American Explorations, Winter2000, Vol. 3 Issue 1, p26, 2p, 11 color; Reading Level (Lexile): **700**; (AN 2737853)

Celery Test. Scholastic SuperScience, Apr2005, Vol. 16 Issue 7, p15-15, 1p, 3 color; Reading Level (Lexile): **580**; (AN 16431043)

Where Does the Water Go? By: Christensen, Jacqueline J.. Turtle, Jul/Aug2006, Vol. 28 Issue 4, p26-28, 3p; Reading Level (Lexile): **510**; (AN 21792844)

How a plant grows from a seed



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"seed: bean plant." Online Art. Encyclopædia Britannica Online School Edition. 7 Aug. 2008 <<http://school.eb.com/elementary/art-89944>>.

Ask:

- ★ What are the parts of a _____ plant?
- ★ How do the plant's parts help it to live?

Vocabulary:

- ★ roots
- ★ leaves
- ★ stem
- ★ stalk
- ★ petals

Science TEKS:

(1.10) **Organisms and environments.** The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to: (B) identify and compare the parts of plants;

(2.10) **Organisms and environments.** The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to: (B) observe, record, and compare how the physical characteristics of plants help them meet their basic needs such as stems carry water throughout the plant;

English/Language Arts TEKS:

(28) **Listening and Speaking/Listening.** Students use comprehension skills to listen attentively to others in formal and informal settings. Students continue to apply earlier standards with greater complexity. Students are expected to: (A) listen attentively to speakers and ask relevant questions to clarify information;

(29) **Listening and Speaking/Speaking.** Students speak clearly and to the point, using the conventions of language. Students continue to apply earlier standards with greater complexity. Students are expected to share information and ideas that focus on the topic under discussion, speaking clearly at an appropriate pace, using the conventions of language.

Technology Application TEKS:

(5) **Information acquisition.** (A) Acquire information including text, audio, video, and graphics.

(7) **Solving problems.** (A) use software programs with audio, video, and graphics to enhance learning experiences

Step 2 – Investigate

K-12 Databases Resources:

Use Searchasaurus to find magazine articles about *plants*.

- ★ **From Seed to Plant**. Click, Sep2004, Vol. 7 Issue 7, p8-10, 3p, 7c; Reading Level (Lexile): **580**; (AN 14298446)
- ★ **Plants of the Desert**. Scholastic News -- Edition 2, Apr2008, Vol. 64 Issue 7, Special section p1-4, 4p; Reading Level (Lexile): **610**; (AN 31293615)
- ★ **Grow Spring Sprouts**. By: Kuhn, Jean. Highlights for Children, Mar2004, Vol. 59 Issue 3, p5-5, 1p, 3c, 2bw; Reading Level (Lexile): **600**; (AN 12206673)
- ★ **Which Way is Up?** By: Wachal, Barbara Schwarz. U+S+ Kids, Mar/Apr2004, Vol. 17 Issue 2, p17-17, 1p, 1 color; Reading Level (Lexile): **660**; (AN 12606282)
- ★ **Grow a Plant Without a Seed**. Hopscotch, Apr/May2004, Vol. 15 Issue 6, p6-7, 2p, 4bw; Reading Level (Lexile): **700**; (AN 12598769)
- ★ **Violets for Fun**. By: Wagner, Kathleen L. Hopscotch, Apr/May99, Vol. 10 Issue 6, p18, 3p, 3 bw; Reading Level (Lexile): **650**; (AN 1722703)

Additional Websites:

The Great Plant Escape- <http://www.urbanext.uiuc.edu/gpe/index.html>

Books: *Leaves* by Vijaya Bodach

Plants by Paul McEvoy



Step 3 – Create

Create a class K-W-L chart to record information about plants.

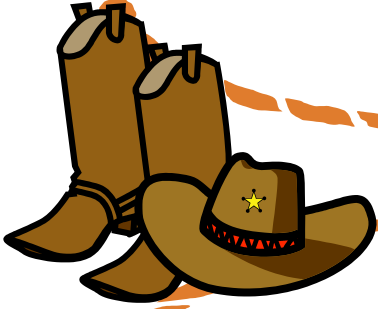
What do we know about plants?	What do we want to learn about plants?	What did we learn about plants?	Source of new information (citation)

🔗 Technology Link – The teacher may use a Smart Board and projector so students can view the chart and database articles easily.

Step 4 – Discuss

- ★ Plant Diagram- Students will draw and label a plant diagram.
- ★ Oral Presentation- Students will share their drawings with the class and explain the function of one of the plant's parts (e.g., leaves). Students will explain what would happen to the plant if it did not have that part.

🔗 Technology Link – Students may use a drawing program, such as Kid Pix or Microsoft Paint, to draw and label their plant.



Step 5 – Reflect

Allow students to present their projects to the rest of the class. Use the following suggested rubric to assess the students' work. Make sure that the students are familiar with the rubric *before* they begin creating their project. They should refer to the rubric repeatedly to monitor their progress in creating their project.

🔗 Technology Link: You can also create your own rubric with your students at <http://rubistar.4teachers.org/index.php>.

Rubrics

Plant Diagram

CATEGORY	4	3	2	1
Diagram-Required Elements	The diagram includes all required elements as well as additional information.	All required elements are included on the diagram.	All but 1 of the required elements are included on the diagram.	Several required elements were missing.
Diagram-Attractiveness	The diagram is exceptionally attractive in terms of design, layout, and neatness.	The diagram is attractive in terms of design, layout and neatness.	The diagram is acceptably attractive though it may be a bit messy.	The diagram is distractingly messy or very poorly designed. It is not attractive.

Sharing Plant Diagram

CATEGORY	4	3	2	1
Speaks Clearly	Speaks clearly and distinctly all (100-95%) the time, and mispronounces no words.	Speaks clearly and distinctly all (100-95%) the time, but mispronounces one word.	Speaks clearly and distinctly most (94-85%) of the time. Mispronounces no more than one word.	Often mumbles or can not be understood OR mispronounces more than one word.
Volume	Volume is loud enough to be heard by all audience members throughout the presentation.	Volume is loud enough to be heard by all audience members at least 90% of the time.	Volume is loud enough to be heard by all audience members at least 80% of the time.	Volume often too soft to be heard by all audience members.
Posture and Eye Contact	Stands up straight, looks relaxed and confident. Establishes eye contact with everyone in the room during the presentation.	Stands up straight and establishes eye contact with everyone in the room during the presentation.	Sometimes stands up straight and establishes eye contact.	Slouches and/or does not look at people during the presentation.
Listens to Other Presentations	Listens intently. Does not make distracting noises or movements.	Listens intently but has one distracting noise or movement.	Sometimes does not appear to be listening but is not distracting.	Sometimes does not appear to be listening and has distracting noises or movements.