



Plant Parts I

Grades 1 - 3

TEACHER RESOURCES

This project goes well with the "Bean in a Bag" activity.

Using simple at-hand materials you can explore basic anatomy of plants.



PART 1- SEED DISSECTION MATERIALS:

- Lima bean seeds (or other bean but Lima beans are large and easy to handle.) Have 2 per student or group (in case of loss, damage, etc.)
- Paper towels
- Recommended but optional: magnifying glasses
- Copies of page 4 Observation sheet OR blank paper for students to record observations

SAFETY TIPS AND HINTS

- Dried beans and seeds are choking hazards for small children.
- There is a small possibility of mould growth - be aware of students allergic to this.
- As usual, do the activity yourself ahead of time so you can modify the activity to match your student's abilities.

PROCEDURE:

Ahead of Time:

Pre-soak beans in a shallow container of warm water for up to 24 hours. That will soften the hard outer shell of the seed. Don't soak for longer as they may go mouldy.

Introduction:

Show the container of soaking seeds.

Ask: What do you think the inside of the seed will look like? Why? (Optional: have students draw their prediction.)

Step 1:

Hand out observation sheet, a paper towel and one seed to each student or group.

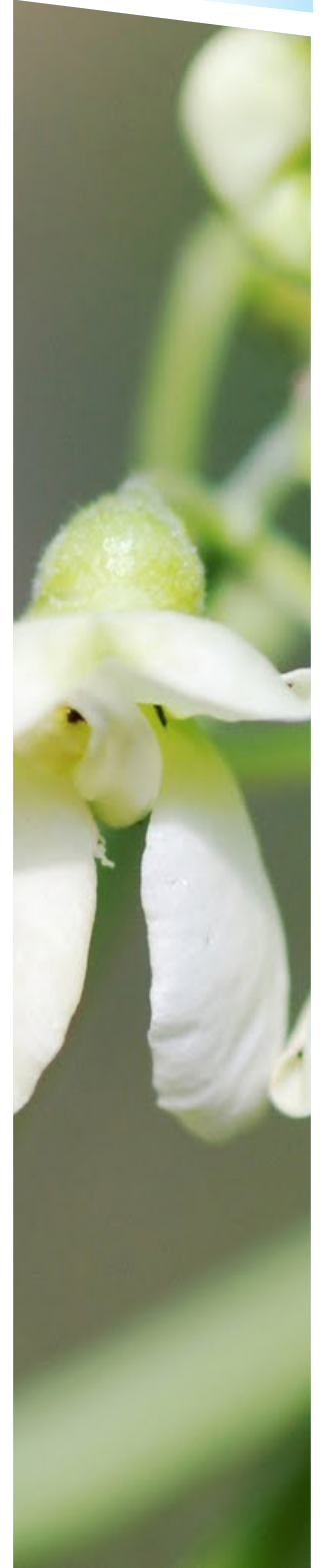
Step 2:

Gently rub the soaked bean between your fingers. This will help you gently peel the thin paper-like coating off of the seed. Lay it on the paper towel.

Ask: Why is the seed coat so tough? What do you think the seed coat does? Record answer on sheet.

Step 3:

There is a line that runs down the side of most beans. Run your fingernail along this line on the curved outside edge of the seed. Gently pry it open and lay the two halves open on the paper towel.

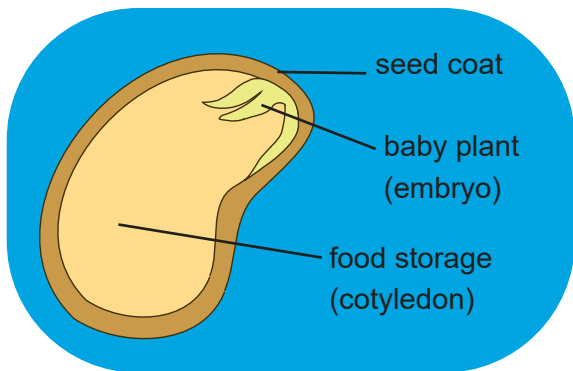


Step 4:

Use a magnifying glass to examine the seeds. The baby plant (embryo) will likely be the same colour as the rest of the bean, but it will have a tiny root and two tiny flattened leaves.

OBSERVATIONS:

Draw what you see inside the bean.



How to Explain the Science

Dried beans (peas, etc.) are seeds that contain “sleeping” (dormant) “baby” plants (embryos). They are protected by a tough seed coat.

When a seed gets wet, it absorbs water and swells, breaking the seed coat.

This also triggers the plant to start using the “food” that is stored in the seed and it begins to grow. As a plant gets older, it uses the roots and leaves to get the energy it needs and no longer needs the seed. (See the side bar for more information.)

ENRICHMENT - VARIATIONS

- Dissect a peanut. Does the inside of the peanut look similar to or different from the bean?
- Make a list of animals that rely on seeds for food.
- Why are seeds and nuts important foods for people?



PART 2- PLANT PARTS

MATERIALS:

- Live flowering plant OR pictures of plants (or video - see below).
- Handouts (see instructions)

INSTRUCTIONS:

- Use page 6 to review plant parts (as a slide, poster or guide to draw on white board.)
- Make copies of page 5 for your students or use blank paper and give instructions.
- Show a live plant and review the parts of a plant (or use pictures)
- Use a video to show the parts of plants like:
Parts Of A Plant | The Dr. Binocs Show
<https://www.youtube.com/watch?v=p3St-51F4kE8&t=52s>
- Have students color and fill in the names of parts on the worksheet

VIDEOS

Plant Life Cycle of a Bean Seed (time lapse of seed sprouting) - We Are Teachers

<https://www.youtube.com/watch?v=pg92cspLy0I>

How Do Plants Grow? | CURIOUS QUESTIONS

https://www.youtube.com/watch?v=i-eYGwOL_Uo

What Is Seed Germination? - Dr Binocs Show

https://www.youtube.com/watch?v=JSe_VUMym-jo&list=PLmJ33rwb1zZYj7vMjW7byQGRaaZKz6vB-G&index=28&t=154s

What is a plant? - Free School (Grade 3-7)

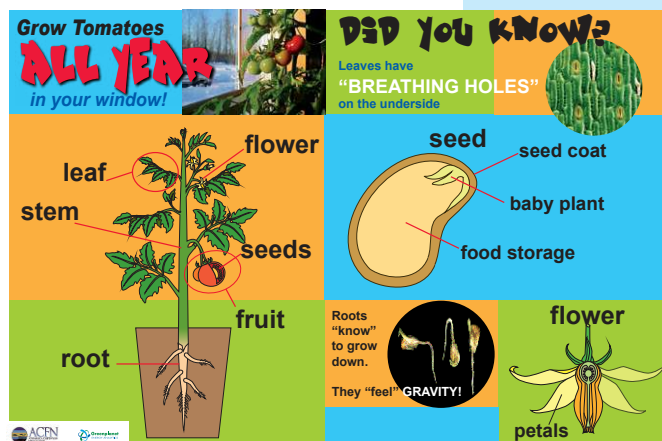
<https://www.youtube.com/watch?v=qULkjDccCeY>

Did You Know?



The **cotyledon** is an important part of a plant embryo inside the seed. It stores food needed by the seed at the time of germination. After germination the cotyledons become the first leaf of the seedling. When the seedling grows into a small plant with new leaves, the cotyledon dries up and sheds off.

Bonus Poster on page 7

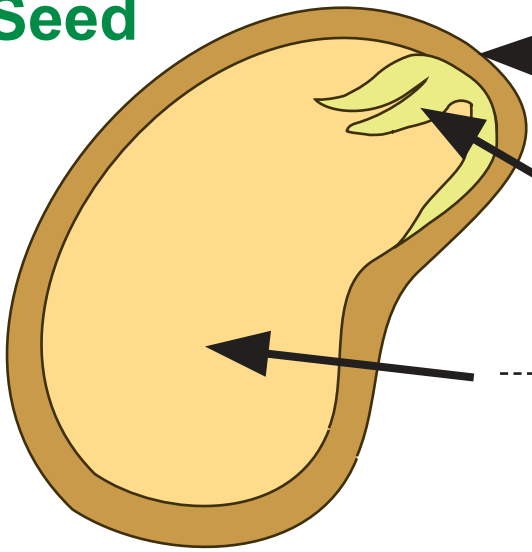


Alberta Curriculum Connections

Gr.	Subject	Curriculum Connection	Detail
1	Science	Topic B: Seasonal Changes	-Identify and describe examples of plant and animal changes that occur on a seasonal basis
		Topic E: Needs of Animals and Plants	-Identify the requirements of plants to maintain life; i.e., air, light, suitable temperature, water, growing medium, space; and recognize that we must provide these for plants in our care. -Identify ways that land plants depend on soil.
1-3	Health	Nutrition	-Recognize the importance of basic, healthy, nutritional food choices to well-being.
2	Math	Shape And Space (Measurement)	-Relate the size of a unit of measure to the number of units used to measure length. -Compare and order objects by length. -Measure length to the nearest nonstandard unit.
	Math	Statistics And Probability (Data Analysis)	-Gather and record data] -Construct and interpret concrete graphs and pictographs
3	Math	Shape And Space (Measurement)	-Relate the passage of time to common activities, using nonstandard and standard units (minutes, hours, days, weeks) -Demonstrate an understanding of measuring length (cm, m).

Plant Parts

Seed



seed coat

baby plant

food storage

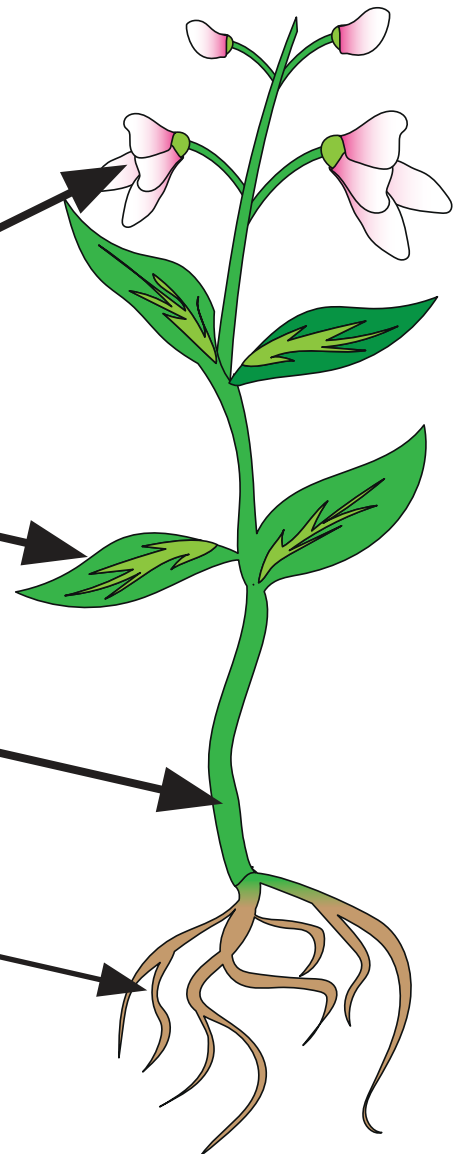
Plant

flower

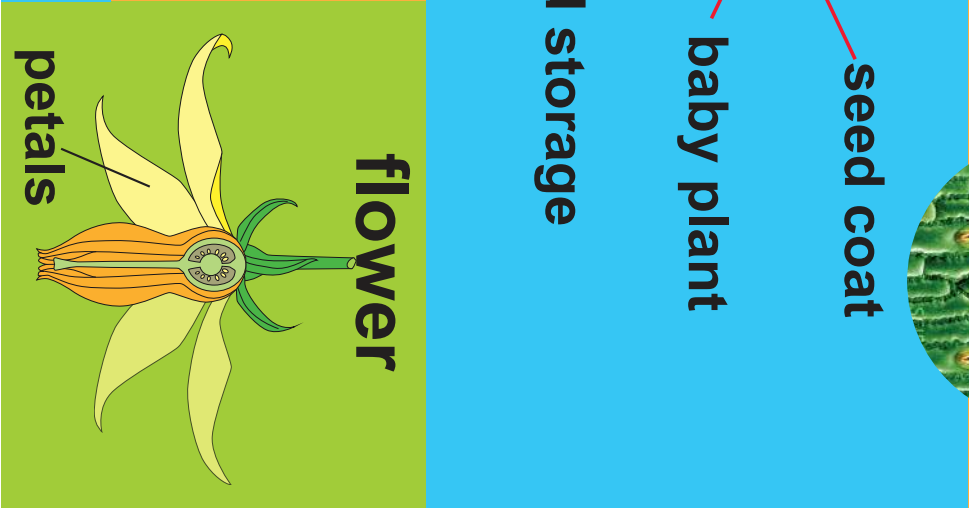
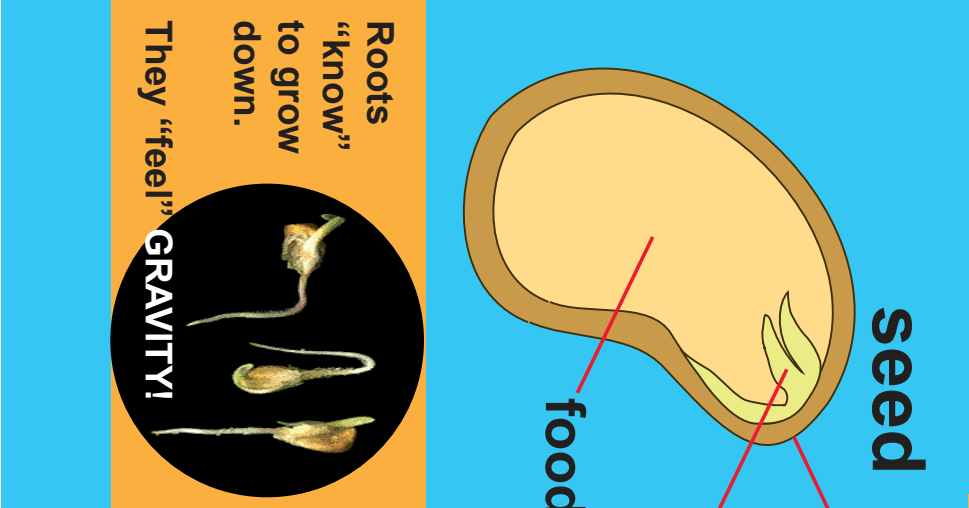
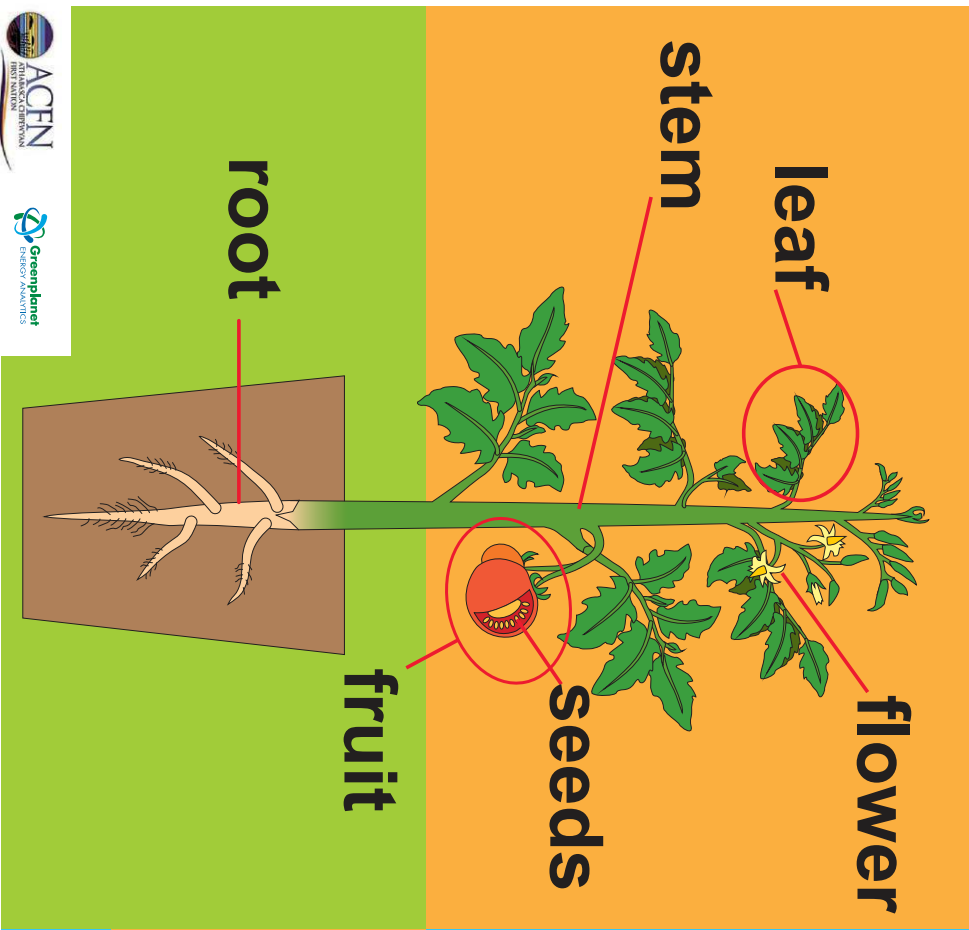
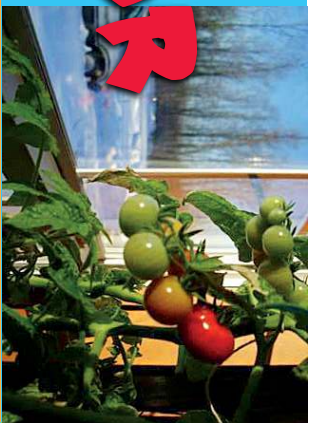
leaf

stem

root



Grow Tomatoes ALL YEAR in your window!



DID YOU KNOW?
Leaves have
"BREATHING HOLES"
on the underside



Roots
"know"
to grow
down.
They "feel" GRAVITY!



My Seed

Name: _____

Open the seed.

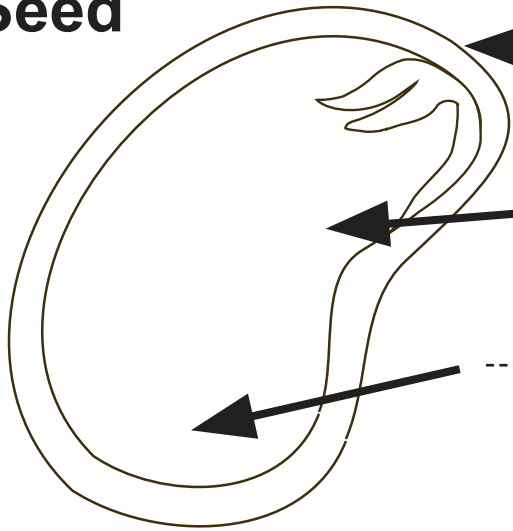
Draw what it looks like.

What does the seed coat do?

What was inside the seed?

Colour and Name the Parts

Seed



Plant

