

# UNIT INCLUDES:

## Life Cycle of PLANTS



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# 9 ENGAGING, CONTENT-RICH LESSONS:

Life Cycle Stages  
Parts of a Seed  
Parts of a Plant  
Plant Needs  
Germination  
Pollination  
Photosynthesis  
Plant Adaptations  
Seed Dispersal

# 9 Lesson Teaching Power Point

# EACH LESSON INCLUDES:

Talk About It

## ACTIVITY 6B

Write t

You will need:

How does a plant make its own food?

1. Explain its own



## LESSON 6 VOCABULARY

**chlorophyll** - the green pigment found in a plant's leaves that help the plant make food.

## What is chlorophyll?

chlorophyll-n. chlor-o-phyll

## ACTIVITY 6A

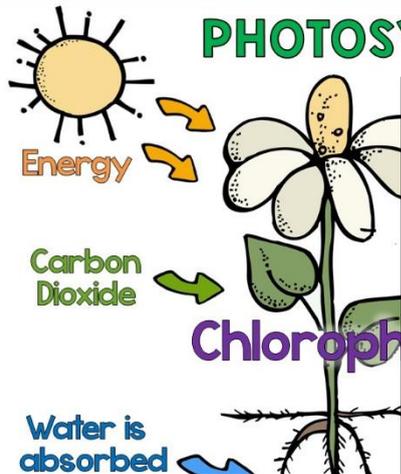
Chlorophyll Rubbings

of energy to develop and opens by using chlorophyll. It is a plant that is used to

What is photosynthesis?

## PHOTOSYNTHESIS

LESSON 6:  
How do plants make their own food?



- vocabulary
- clear content using real life pictures
- diagrams & charts
- turn & talk questions
- lab activities
- short written response to be added to the culminating flower booklet

# SAMPLE LESSON

## Recommended Books

The following are some of my favorite books to use with this unit

### NONFICTION

From Seed to Plant by Allan Fowler

## Media Links

The following are links to videos that support the lessons in the unit

### LIFE OF PLANTS

by David Attenborough

PHOTOSYNTHESIS & CHLOROPHYLL

[Photosynthesis Song](#)  
[Why Do Leaves Change Color?](#)

## TEACHING POWER POINT Unit Lessons

The unit lessons are located in a separate Power Point file included in this download.

**LESSON 1:** The Plant Life Cycle

**LESSON 2:** The Parts of A Seed  
Observing the Inside of A Seed

**LESSON 3:** The Parts of a Plant

**LESSON 4:** Plant Needs & Plant Adaptations:  
What Do Plants Need to Grow?

**LESSON 5:** Chlorophyll  
How Do Leaves Help a Plant Get Light?

**LESSON 6:** Photosynthesis  
How Do Plants Make Their Own Food?

**LESSON 7:** Pollination  
How Do Insects Help Plants Grow?

**LESSON 8:** Seed Dispersal  
How Do Seeds Travel?

**LESSON 9:** Plant Adaptations

## LIFE CYCLE OF PLANTS STANDARDS ALIGNMENT

### Third Grade

#### Next Generation Science Standards

3-LS1-1 From Molecules to Organisms: Structures and Processes  
Develop models to describe that organisms have unique and diverse life cycles but all have in common

## LIFE CYCLE OF PLANTS STANDARDS ALIGNMENT

### First Grade

#### Common Core State Standards

SL.1.5 Add drawings or other visual displays to stories or recounts of experiences to clarify ideas, thoughts, and feelings

W.1.7 Participate in shared research and writing projects

W.1.8 Recall information from experiences or gather information from provided resources to answer a question

## LIFE CYCLE OF PLANTS LESSON PLAN/PACING GUIDE

Day	Objective	Lesson/Lab/Activity	Materials
Day 6	-Students will explore how different leaf shapes help a plant to get more or less sunlight.	<b>Lesson 5:</b> How Do Leaves Help A Plant Get Light?  Activity 5A: Explore how leaves help a plant get light	-Teaching ppt. -leaf types picture cards -student recording sheet
Day 7	-Students will understand how a plant makes its own food.	<b>Lesson 6:</b> How Do Plants Make Their Own Food? What is Chlorophyll?	-Teaching ppt. -Chlorophyll rubbing student page

## LIFE CYCLE OF PLANTS LESSON PLAN/PACING GUIDE

Day	Objective	Lesson/Lab/Activity	Materials
Day 1	-Introduce the plant life cycle -Introduce plant vocabulary  -Students will illustrate and label the life cycle by using a graphic organizer.	<b>Lesson 1:</b> The Life Cycle of Plants Introduce the stages of the life cycle.  -Activity 1A: Draw the plant life cycle	-Teaching ppt. -Life Cycle of a Plant graphic organizer or A Plant's Life Cycle writing template
Day 2	-Students will label the parts of a seed -Students will germinate seeds	<b>Lesson 2:</b> Observing the Inside of a Seed -Activity 2A: Observe the inside of a seed  *Students will use the parts of a seed graphic organizer and the vocabulary booklet	-Teaching ppt. -Parts of A Seed student page
Day 3	-Students will observe and record changes as a seed grows by making an observation journal	<b>Lesson 2 Continued:</b> Observing Changes as a Seed Grows -Activity 2C: Germinate a seed -Activity 2D: Observe and record changes as the seed grows	-Teaching ppt. -Seed Observation Journal -Vocabulary Booklet
Day 4	-Students will label the parts of a plant by using a graphic organizer.	<b>Lesson 3:</b> Parts of a Plant Identify and define the purpose of the parts of a plant	-Teaching ppt. -Parts of a Plant

# 12-DAY LESSON PLAN

Aligned to  
**Next  
Generation  
Science  
Standards**  
and  
**Common  
Core State  
Standards**  
for grades 1-3



# Detailed lesson plans

# PLANS INCLUDE:

- Standards
- Objectives
- Written response activities
- Performance tasks
- Lesson procedures
- Teacher notes
- Materials lists

## Why do plants disperse their seeds?



Sunflowers

Dispersing seeds is a necessary part of continuing the plant life cycle. Seed dispersal is when seeds are transported from the plant to another area in order to grow. Plants **disperse** their seeds to ensure that the next generation of new plants have less competition for the space, sun, and water they need to grow. If plants simply let their seeds fall to the ground beneath them the soil would be overcrowded with new plants.

Plants depend on the help of insects, animals, wind, and water to help them move their seeds to new locations away from the parent plant.

## chlorophyll

The green pigment found in a plant's leaves that help the plant make food.

seed

seedling

### Lab Activity 2A OBSERVING THE INSIDE OF A SEED

Objective: Students will measure, make predictions, and observe the inside of a seed.

### Activity 5A HOW DO LEAVES HELP A PLANT GET LIGHT?

### LIFE CYCLE OF PLANTS LESSON PLAN/PACING GUIDE

Day	Objective	Lesson/Lab/Activity	Materials
Day 6	-Students will explore how different leaf shapes help a plant to get more or less sunlight.	Lesson 5: How Do Leaves Help A Plant Get Light?	-Teaching ppt -leaf types picture cards -student recording sheet
Day 7	-Students will understand a plant makes its own food.	Lesson 5A: Explore how leaves make food.	-Teaching ppt
Day 8	-Students will explore the process of photosynthesis.	Lab Activity 7A: POLLINATION HOW DO INSECTS HELP PLANTS GROW?	-Teaching ppt -plant food?
Day 9	-Students will understand how insects help by simulating the process.	Lab Activity 8A: SEED DISPERSAL- BUILD AN EXPLODING SEED POD	-Teaching ppt
Day 10	-Students will understand that plants need water to grow.	Lab Activity 2B: LABELING THE PARTS OF A SEED	-Teaching ppt -student recording sheet -magnifying glass -hand lens -parts of a seed recording sheet -parts of a seed flashcard -magnifying glass -hand lens -parts of a seed recording sheet
Day 11	-Students will understand the plant life cycle by comparing the parts of a seedling to a seed.	Lab Activity 3B: PLANTING A SEEDLING	-Teaching ppt -student recording sheet -magnifying glass -hand lens -parts of a seed recording sheet



# Detailed lesson plans

## Unit Assessments

## Printable Charts & Bulletin Board Set

The following pages include additional reference charts & a plant life cycle bulletin board set.

### Plant Life Cycle

## Lab Activity: SEED DISPERSAL Build an Exploding Seed Pod

Objective: Students will build a model that simulates how some plants disperse their seeds.

Materials per student:  
round balloon  
funnel



## Graphic Organizers



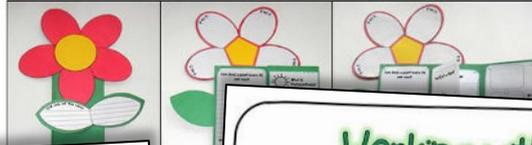
## Lab Activity: POLLINATION SIMULATION How Do Insects Help Plants Grow?

Objective: Students will build a model that simulates an insect pollinating a flower.

Materials per student:  
1 die cut flower (or flower card)  
1 small juice box  
3 or 4 cheese puffs  
paper towel  
student recording page  
hand lens (optional)



## Culminating Project: Foldable Flower Booklet



## Lab Activity: Observing The Inside Of A Seed

Objective: Students will measure, make predictions, and observe.



## Working with Vocabulary

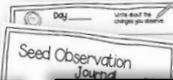
Use the large word cards to introduce the unit vocabulary. Display the cards in a pocket chart for the duration of the unit so students can use them as a reference. The small word and definition cards can be used as a matching activity.



## Lab Activity: Observing Changes as a Seed Grows

Objective: Students will germinate seeds to observe and record changes as the seed grows.

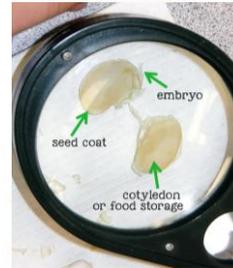
Materials:  
1-2 lima beans  
a sandwich size box



## Lab Activity: Labeling the Parts of A Seed

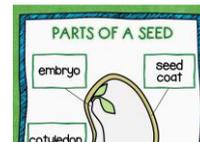
Objective: Students will use a hand lens to observe and label the inside of a seed.

Materials:  
1 soaked lima bean (soak for 20-30 min.)  
1 paper towel  
hand lens  
Parts of a Seed recording sheet  
Parts of a Seed lesson  
\*OPTIONAL-document camera



Procedure:  
1. Have students carefully open the soaked seed by wedging their fingernail between the most curved sides.

2. Place the opened seed on a paper towel and observe with a hand lens.



## Art Activity: Chlorophyll Rubbings



Objective: Students will press leaves to extract chlorophyll and create a chlorophyll leaf rubbing.

Materials:  
Lots of green leaves (thinner skinned leaves work best)  
1 metal spoon per student  
A class set of tree trunk student pages

1. Fold the student page in half and crease. Place a leaf on one side of the paper.

## Lab Activity: How do Leaves help a plant get Light?



Objective: Students will observe different leaf shapes help a plant to get more or less sunlight.

Procedure: Project the less visual of leaf pictures onto a screen. Discuss with students the different shapes and textures of leaves. Ask students to think about how different leaf shapes help a plant to get more or less sunlight.

# Teacher's Notes & Management Tips

# SEQUENCE

### Life Cycle of a Plant

Sunshine

Water

Soil

Name \_\_\_\_\_

Draw each stage of a plant's life cycle. Label each stage and the parts of the plant.

### Thinking About PLANTS



by \_\_\_\_\_

# DECOMPOSE

### Parts of a Plant

Name \_\_\_\_\_

# SORT

# DESCRIBE

### I Can Describe a Plant

Name \_\_\_\_\_

### Plants We Eat

roots	leaves	
_____	_____	
_____	_____	
flowers	seeds	fruit
_____	_____	_____
_____	_____	_____

# CATEGORIZE

### Plants

Parts	Needs	Uses
_____	_____	_____
_____	_____	_____
_____	_____	_____

# Graphic Organizers



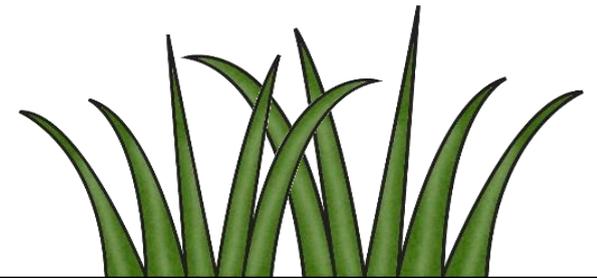
Students  
**EXPLORE,  
OBSERVE,  
BUILD &  
SIMULATE**



**4** engaging  
science  
experiments

Hands-on learning labs

# LAB ACTIVITY CARDS for each lesson



**Lab Activity 7A: POLLINATION: HOW DO INSECTS HELP PLANTS GROW?**

**Objective:** Students will build a model that simulates an insect pollinating a flower.

**Materials per student:**  
 1 die cut flower (or flower card)  
 1 small juice box  
 3 or 4 cheese puffs  
 paper towel

**Lab Activity 2D GERMINATION: OBSERVING CHANGES AS A SEED GROWS**

**Objective:** Students will germinate seeds to observe and record changes as the seed grows.

**Materials:**  
 1-2 lima beans  
 a sandwich size bag  
 paper towel  
 a few drops of bleach (optional)  
 a spray bottle of water  
 recording journal with 6-8 recording pages

**Lab Activity 2B LABELING THE PARTS OF A SEED**

**Objective:** Students will use a hand lens to observe and label the inside of a seed.

**Materials:**  
 1 soaked lima bean (soak for 20-30 min)  
 1 paper towel  
 hand lens  
 Parts of a Seed recording sheet  
 Parts of a Seed lesson  
 \*OPTIONAL-document camera

**Procedure:**  
 1. Have students carefully open the soaked seed by wedging their fingernail between the most curved sides.

**Lab Activity 2A SEED DISSECTION: OBSERVING THE INSIDE OF A SEED**

**Objective:** Students will measure, make predictions, and observe the inside of a seed.

**Materials per student:**  
 2 lima beans-1 dry, 1 soaked  
 hand lens

**Lab Activity 6A CHLOROPHYLL RUBBINGS**

**Objective:** Students will press leaves to extract a chlorophyll leaf rubbing.

**Materials:**  
 Lots of green leaves (thinner skins)  
 1 metal spoon per student  
 A class set of tree trunk student paper

1. Roll the student's green leaf and paper together.  
 2. Open the paper and place a leaf so it is flat and facing down. Fold paper over the leaf.  
 3. Press firmly against the paper with metal spoon. Rub the spoon vigorously over the paper. The leaf's chlorophyll is transferred to the paper.

**Lab Activity 5A HOW DO LEAVES HELP A PLANT GET LIGHT?**

**Objective:** Students will learn how different leaf shapes help a plant to get more or less sunlight.

**Materials:**  
 Projectable chart or leaf picture cards  
 A class set of student recording sheets

**Procedure:**  
 1. Project the lesson visual on the following page or use the pictures in Lesson 5 of the Power Point.  
 2. Discuss with students the different shapes and textures of various types of plant's leaves. Ask students to think about how different types of

**Lab Activity 8A SEED DISPERSAL: BUILD AN EXPLODING SEED POD**

**Objective:** Students will build a model that simulates how some plants disperse their seeds.

**Materials:**  
 1 paper cup  
 1 paper plate  
 1 paper towel  
 1 paper bag  
 1 paper cone  
 1 paper fan  
 1 paper strip  
 1 paper string  
 1 paper string

Easy prep with simple materials

# Student LAB SHEETS

for each  
activity



# Science experiments

Lab Activity: LABELING THE PARTS OF A SEED

Seed Observation Journal

Seed Observation Journal

Lab Activity: HOW DO LEAVES HELP A PLANT GET LIGHT?

Day \_\_\_\_\_ Write about the changes you observe.

Observe Compare

How do you think the shape of a plant's leaves help it get sunlight?

Look at the pictures and compare the leaves. How are they alike and different?

Draw the changes you observe.

What care did you give your plant today?

Lab Activity 8A Build An Exploding Seed Pod

Did your seeds all fall onto the paper or disperse farther than the paper?

How do insects help plants grow?

Lab Activity 7A

Use a hand lens to observe the balls of pollen. Draw what you see.

Imagine that you are a hungry butterfly. Land on the balls of pollen rubbing your fingers over them. Use your proboscis (arrow) to drink your nectar (sucrose). Draw what it looks like after you are finished.

Next, "walk" on your flower as you drink your nectar. Gently tap your butterfly feet on it. Draw what happens to your flower.

6. Draw Use a hand lens to magnify the inside of your seed. Draw your seed and its parts.

1. Observe Use a hand lens to observe the outside of your dry seed. Describe what you see.

2. Measure Measure your seed. Will you use inches or centimeters to measure its length? Circle one.

inches in centimeters cm

Dry seed measurement Wet seed measurement

3. Predict Predict what you think you will observe when you cut the seed open. Observe with your hand lens. Draw what you see.

4. Check Check your prediction with what you actually observed. Write what was the same and what is different.

7. Label Label the Parts of a Seed

Lab Activity 8A Build An Exploding Seed Pod

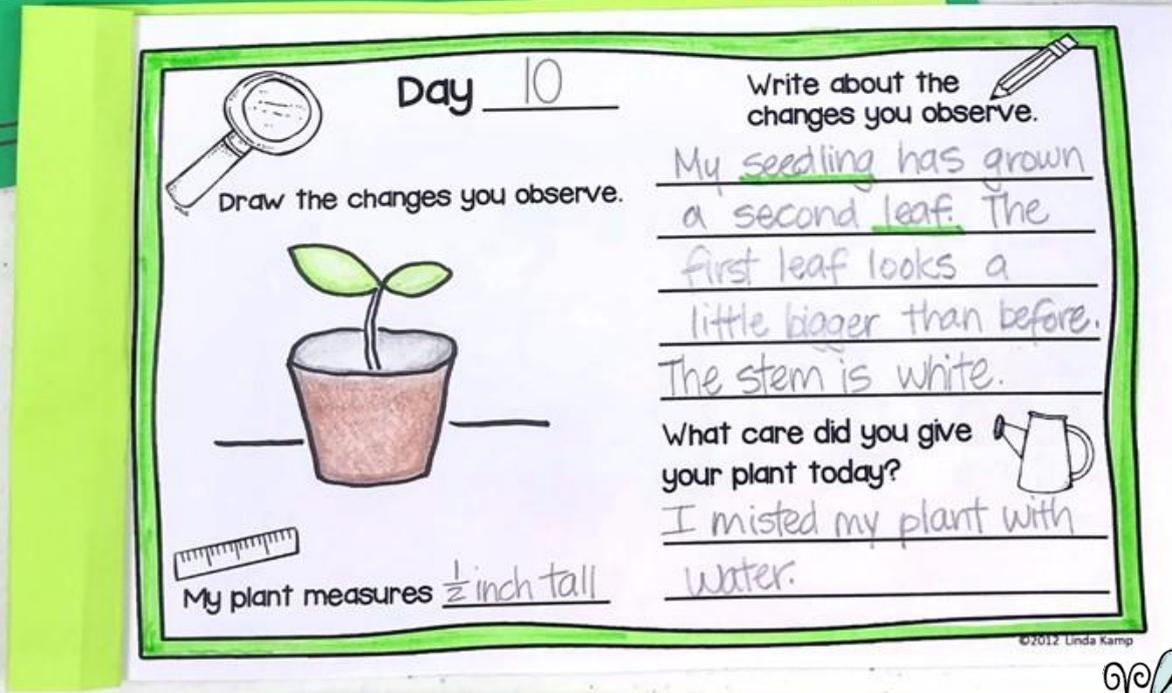
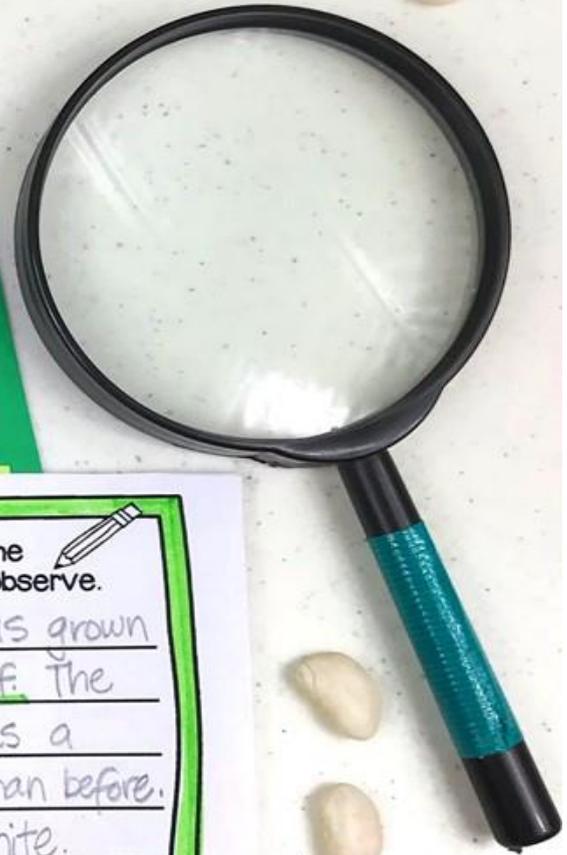
How does your model represent the building tension in a seed pod before it bursts?

Test your model. How did it burst?

What happened?

Draw your model.

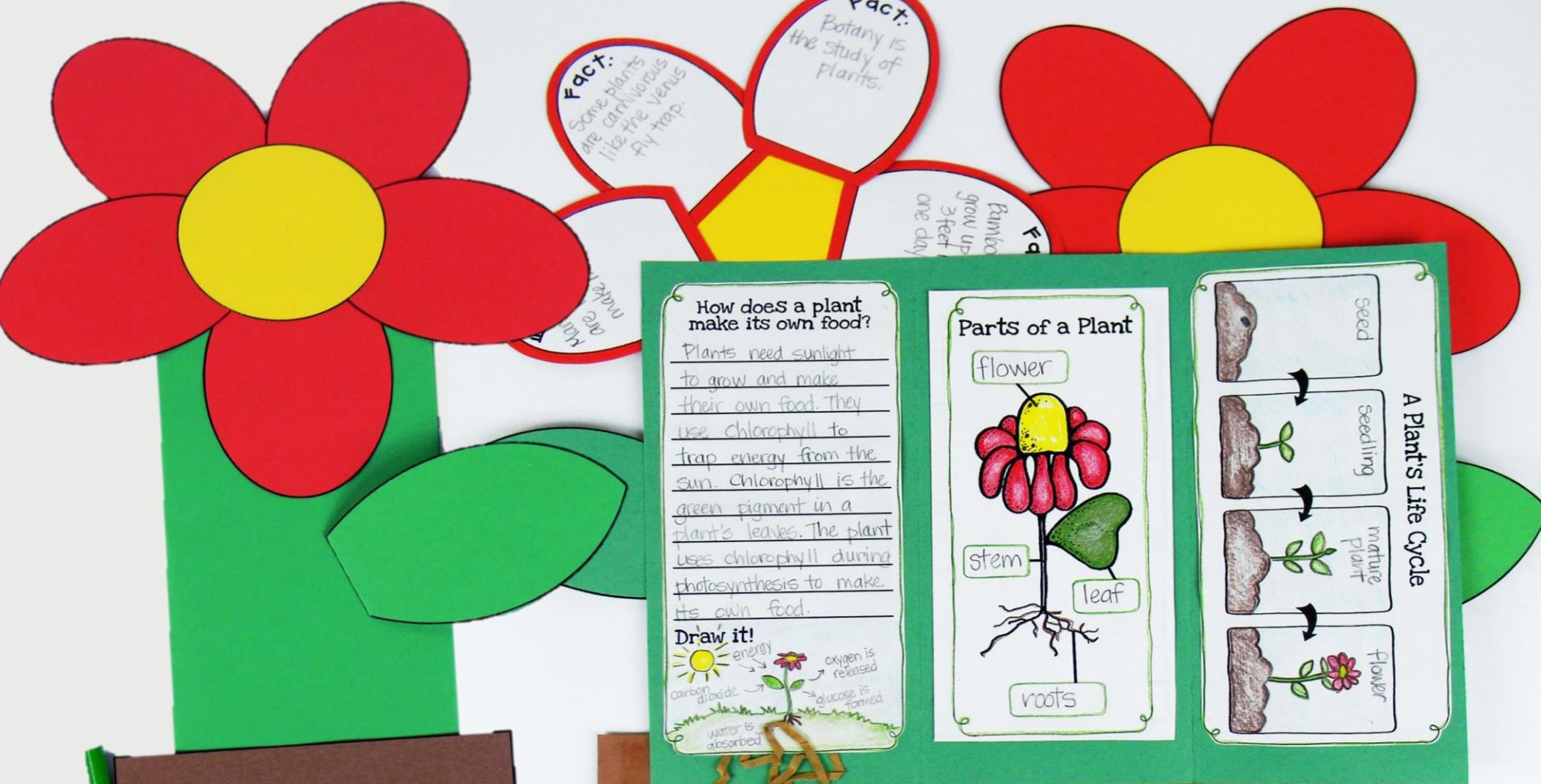
Draw how you created tension.



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# Seed observation journals

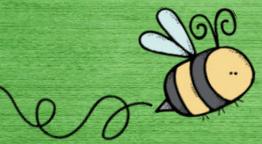
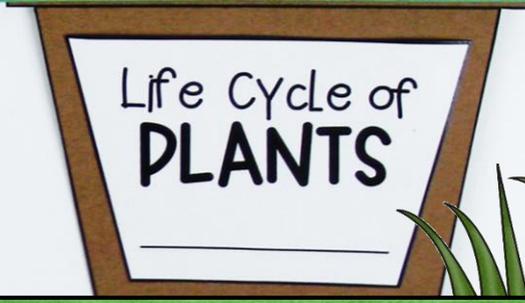
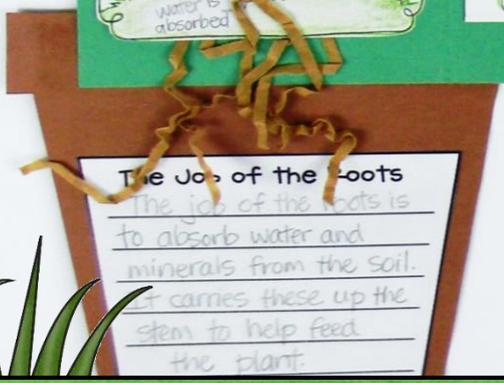
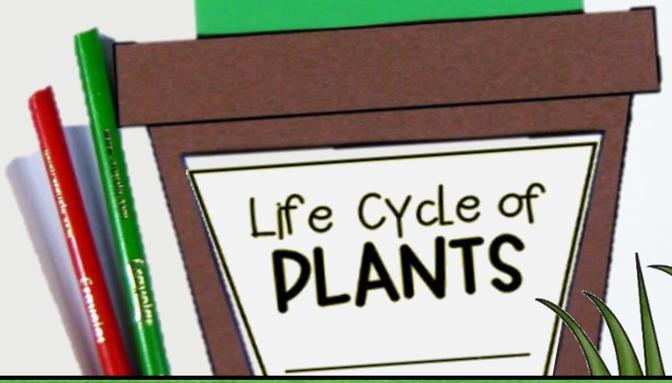
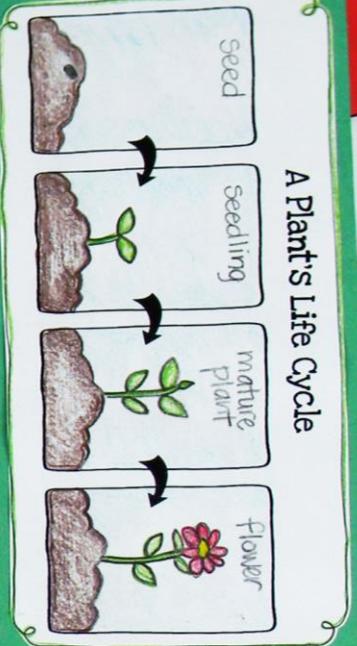
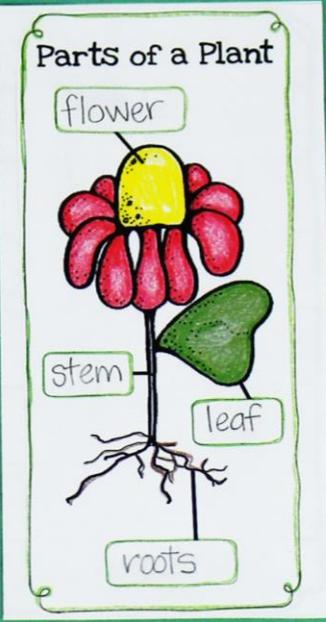


**How does a plant make its own food?**

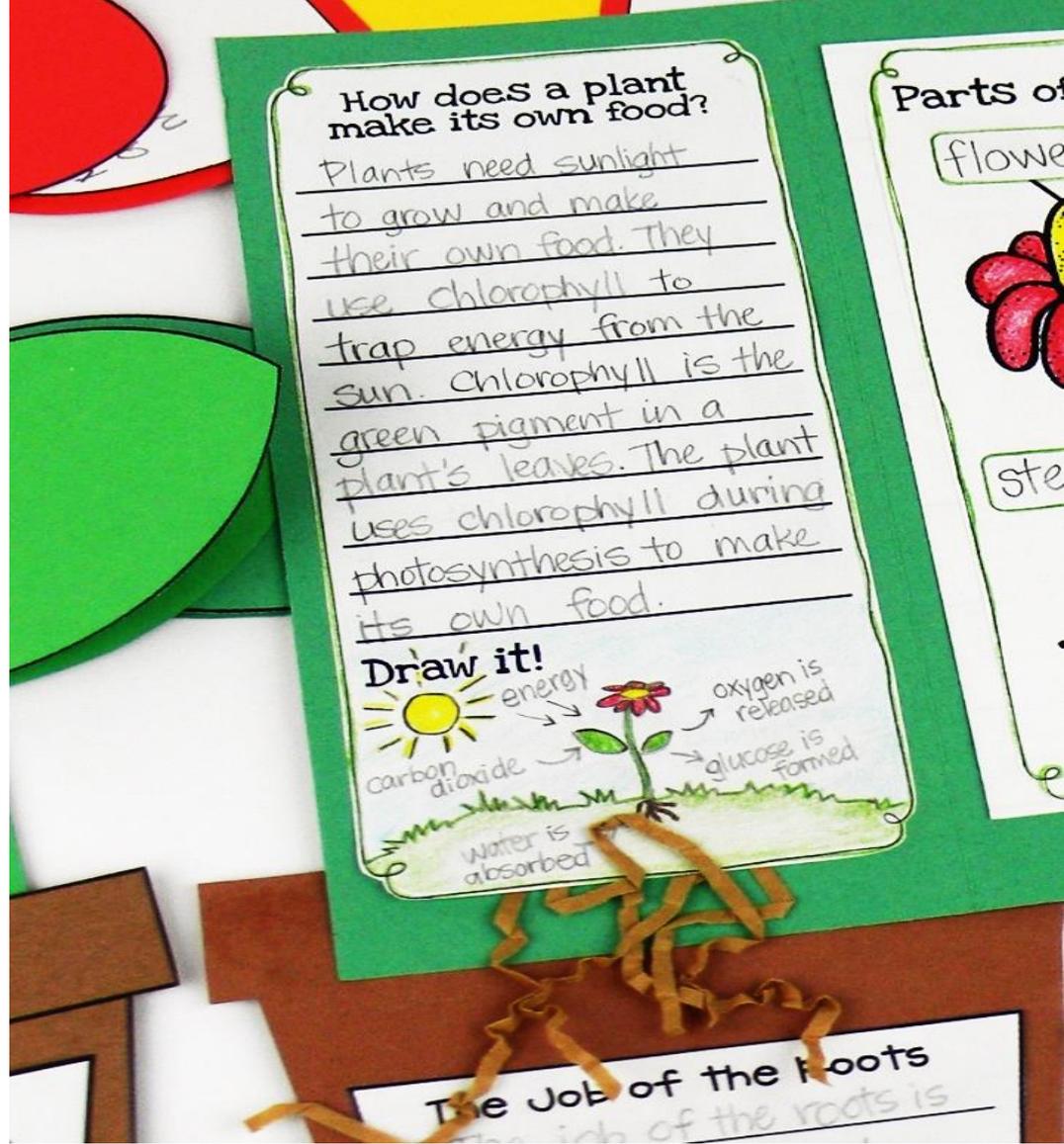
Plants need sunlight to grow and make their own food. They use chlorophyll to trap energy from the sun. Chlorophyll is the green pigment in a plant's leaves. The plant uses chlorophyll during photosynthesis to make its own food.

**Draw it!**

energy  
oxygen is released  
glucose is formed  
carbon dioxide  
water is absorbed



# Foldable flower booklet



**ACTIVITY 6B** Write to Explain

You will need:

How does a plant make its own food?

1. Explain how a plant makes its own food.

2. Use these words to help you.

chlorophyll  
carbon dioxide  
oxygen  
glucose  
energy  
photosynthesis

Draw it!

Students complete written **response activities** after each lesson to add to the foldable flower booklet.

# Writing about science

**Lab Activity: How do leaves help a plant get light?**  
 Observe Compare

**Lab Activity: How do insects help plants grow?**  
 Name: \_\_\_\_\_  
 Use a hand lens to observe the balls of pollen. Draw what you see.  
 Imagine that you are a hungry butterfly. Land on the balls of pollen rubbing your fingers over them. Use your proboscis (straw) to drink your nectar (sugar). Draw what your feet look like after touching the pollen.

**Lab Activity 8A: Build An Exploding Seed Pod**  
 Name: \_\_\_\_\_  
 Write wind, animal, gravity, or explosive to tell how each seed is dispersed.  
 bean, cattail, apple, thistle, chestnut, oak tree, raspberry, sunflower  
 balloon, seeds, funnel, pencil  
 Using these materials how can you design a seed pod?  
 How does your model represent the building tension in a seed pod before it bursts?  
 Test your model outside. How did you make your pod explode?  
 What did you observe when your pod exploded?

**ACTIVITY 3A: Label the parts of a plant**  
 You will need: Parts of a Plant  
 Color and label the parts of a plant.

**ACTIVITY 4A: Compare human needs to plant needs**  
 You will need:  
 1. Think about what you need to survive.

**ACTIVITY 5A: Explore how leaves help a plant get light**  
 You will need:  
 1. How do you think the shape of a leaf helps it get light?

**ACTIVITY 6B: Write to Explain**  
 You will need:  
 1. Explain how a plant makes its own food.

**ACTIVITY 7A: Pollination Simulation**  
 You will need:  
 Build a model to show how insects help to pollinate flowers.  
 1. Place your flower cut out around the straw of your juice box.  
 2. Rub your fingers over the cheese puffs as you sip the "nectar" from your flower.  
 3. Next, tap and rub your fingers on the other side of the straw.

**ACTIVITY 8A: Exploding Seed Pod**  
 You will need:  
 Build a model to demonstrate how some plants disperse their seeds.  
 1. Place the opening of the balloon around the end of the funnel.  
 2. Carefully pour bird seed into the funnel a time in the funnel.  
 3. Blow up the balloon.

**ACTIVITY 1A: Draw the plant life cycle**  
 You will need:  
 Draw and label the life cycle of a plant.

**ACTIVITY 2A: Observe the inside**  
 You will need:  
 soaked lima bean, dry lima bean, paper towel, and lens, recording page  
 1. Use a hand lens to observe the inside of the seed. Write down what you observe.  
 2. Carefully cut open the seed with a hand lens to observe the inside.

**ACTIVITY 2B: Label the parts of a seed**  
 You will need:  
 Label the parts of a seed.

**ACTIVITY 2C: Germinate a seed**  
 You will need:  
 soaked lima or pinto beans, 1 paper towel, 1 small Ziplock bag  
 1. Dampen the paper towel with water.  
 2. Place your bean inside the paper towel.  
 3. Fold the paper towel over the bean and place it inside the bag.  
 4. Leave the bag open at the top so that air can circulate.

**ACTIVITY 2D: Observe the changes as a seed grows**  
 You will need:  
 1. Begin a seed observation journal.  
 2. Check your seed for changes every few days.  
 3. Write down the changes you observe in your journal.  
 4. Draw the changes you observe.

**Lab Activity: Observe the Inside Of A Seed**  
 Name: \_\_\_\_\_  
 1. Observe: Use a hand lens to observe the outside of your dry seed. Describe what you see.  
 2. Measure: Measure your seed. Will you use inches or centimeters to measure its length? Circle one.  
 inches in centimeters cm

**Lab Activity: The Parts of A Seed**  
 Name: \_\_\_\_\_  
 Label the parts of a seed.

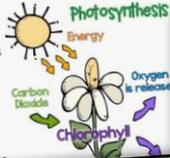
# Lesson response activities

# What is photosynthesis?

photosynthesis-n. pho-to-syn-the-sis

The word photosynthesis is made up of photo meaning "light" and synthesis meaning "to put together". Photosynthesis means to put together with light.

Photosynthesis is a process by which green plants use energy from the sun to transform water, carbon dioxide, and minerals into oxygen. Photosynthesis gives



# HOW DO LEAVES HELP A PLANT GET LIGHT?

## Parts of A Plant

The stem supports the leaves and carries water, minerals, and food throughout the plant.



The flower makes seeds to continue the life cycle.

# What is chlorophyll?

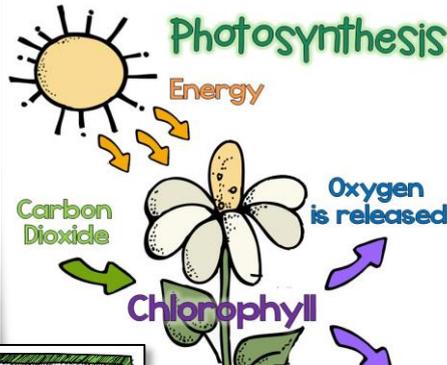
chlorophyll-n. chlor-o-phyll

Plants require light as a form of energy to develop and grow. This energy transfer happens by using chlorophyll.

# PARTS OF A SEED

embryo

seed coat



Bean Life Cycle

# STAGES OF GERMINATION

seed

seedling

mature plant

flower

seed coat  
The outer coating that protects the seed.

seed  
A small embryonic plant enclosed in a covering called a seed coat, usually with some stored food.

flower  
The part of a plant that makes seeds which continues the life cycle.

stem

leaves  
The part of a plant that absorbs sunlight and makes food for the plant.

roots

pollen  
The sticky powder inside the flower that helps make the seeds.

oxygen  
The type of gas that plants release after photosynthesis.

photosynthesis  
The process that plants use to make food from sunlight.



fruit



seedling



mature plant



seed



flower

# Plant Life Cycle



# Diagrams & charts

# UNIT ASSESSMENT

# VOCABULARY MATCH

# GRAPHIC ORGANIZERS

# WRITING OPTIONS

# Unit assessment & printables

The image displays a collection of educational materials for a plant unit. The worksheets include:

- Life Cycle of Plants Assessment:** A matching exercise where students connect terms like chlorophyll, stem, leaves, roots, pollen, and seed to their definitions.
- Label It!** A diagram of a flower with blank boxes for labeling its parts.
- Question It!** A section with questions such as "Plants need sunlight, water and soil to grow" and "Plants do not need insects to help them grow."
- How do seeds travel?:** A worksheet asking students to draw a seed that travels by wind or animal, with examples like bean, cattail, apple, and thistle.
- What is an adaptation?:** Two worksheets asking "How do plants make their own food?"
- What is chlorophyll? / What is photosynthesis?:** Worksheets defining these terms.
- What is pollination?:** A worksheet defining this process.
- Compare Plant Needs to Human Needs:** A Venn diagram comparing the needs of plants and humans.
- Plants We Eat:** A diagram showing various plants and their parts (roots, stems, leaves, fruits).
- I Can Describe a Plant:** A worksheet with a central plant drawing and surrounding circles for describing its features.
- Plants:** A worksheet with sections for "Parts," "Needs," and "Uses."
- CAUSE & EFFECT:** A worksheet with a grid for identifying causes and effects.
- Life Cycle of a Plant:** A diagram showing the cycle from "Sunshine" to "Water" and back to "Sunshine."
- Parts of a Plant:** A worksheet with a plant drawing and lines for labeling its parts.
- Thinking About PLANTS:** A worksheet with a drawing of a garden and a bee, intended for student reflection or writing.

# Chlorophyll Paintings



Science-based art project

LIFE

CYCLE

OF

PLANTS



\*includes title lettering

Bulletin board display



# Complete science unit



# Life Cycle of PLANTS



**Fact:**  
Some plants use carbon dioxide from the atmosphere to help them grow.

**act:**  
Biology is the study of plants.

Plants grow up 3 feet in one day.

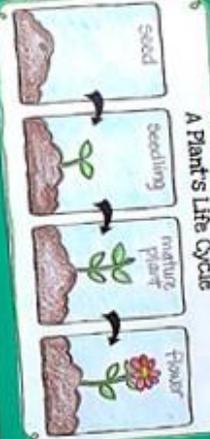
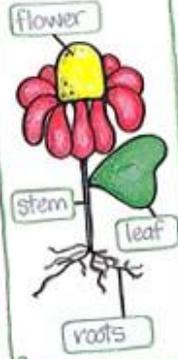
**Fact:**  
Plants have roots that anchor them to the ground.

**How does a plant make its own food?**

Plants use sunlight to grow and make their own food. They use chlorophyll to trap energy from the sun. Chlorophyll is the green pigment in a plant's leaves. The plant uses chlorophyll during photosynthesis to make its own food.



**Parts of a Plant**



Life Cycle of PLANTS

**25**  
ACTIVITIES,  
LABS, CHARTS  
& PRINTABLES

**The Job of the Roots**  
The job of the roots is to absorb water and minerals from the soil. It carries these up the stem to help feed the plant.

**WITH TEACHING  
POWER POINT**

Linda Kamp

Everything you need to easily **PLAN, PREP, and TEACH** an engaging & effective science unit.

