

# TEACHING POWERPOINT

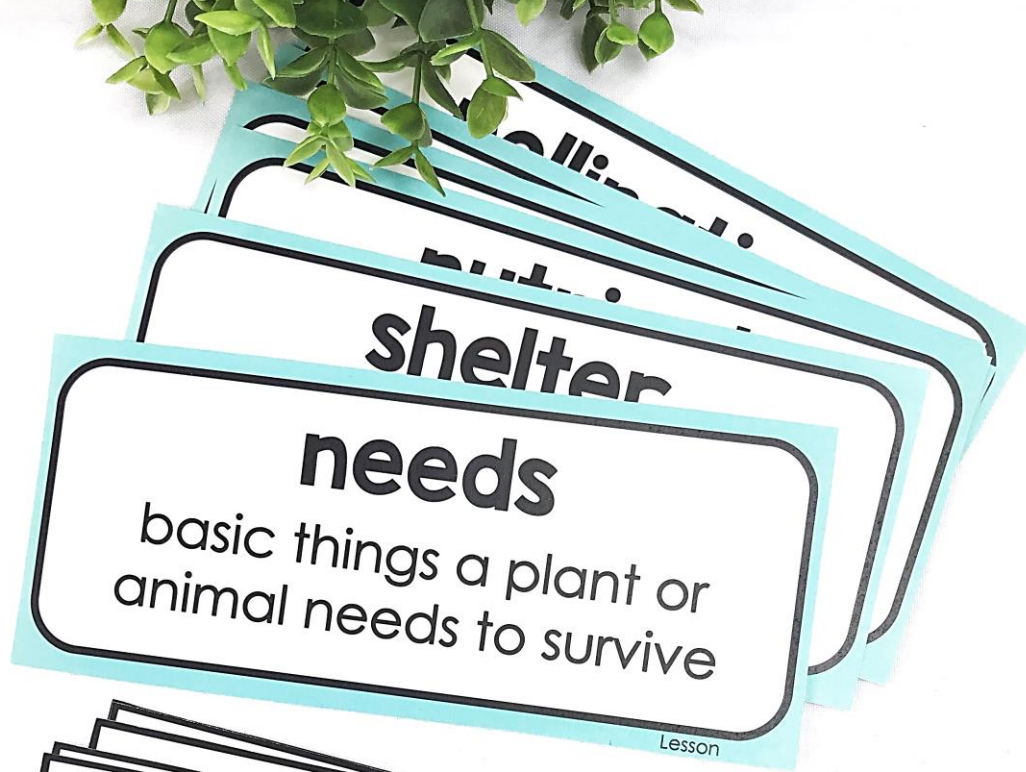
## 6 ENGAGING LESSONS

- Plant Life Cycles
- Plant Needs
- Animal Life Cycles
- Animal Needs
- Plants Rely on Animals
- Animals Rely on Plants





Aligned to  
**Next Generation  
Science Standards,  
TEKS**  
and  
**Common Core  
State Standards  
for 2<sup>nd</sup> Grade**



**STANDARDS-ALIGNED**

# TEACHER GUIDE

Scripted lesson plans  
Lesson objectives  
Performance tasks  
Teacher's notes  
Management tips  
Lab procedures  
Extension activities  
Assessments

Investigation 2A: Lab Procedure  
Lesson 2

Investigation 1 Lab Procedure  
Lesson 1

Plant & Animal Needs LIFE CYCLES  
TEACHER GUIDE

Investigation 3 Collecting Data From Pictures  
Lesson 3

QUESTION: What data can I collect about an animal's needs from a picture?  
OBJECTIVE: Students will gather and organize data from pictures.

Investigation 1 What's Inside a Seed?  
Lesson 1

QUESTION: How do the parts of a seed help a plant grow?  
OBJECTIVE: Students will diagram the inside of a seed and explain the function of each part.

MATERIALS:  
- bag of large lima beans (2-3 beans per student)  
- paper towels

Investigation 6 Lab Procedure  
Lesson 6

Investigation 2A Can plants grow without sunlight?  
Lesson 2

Investigation 6 Breathing Leaves  
Lesson 6

QUESTION: How can you see a plant creating oxygen? Can plants produce oxygen without sunlight?

Investigation 5B Pollination Demonstration  
Lesson 5

QUESTION: How do animals pollinate plants?  
OBJECTIVE: Students will build a model of an insect.

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17-Day Pacing Guide

WRAP UP: Revisit the learning objectives and call on students to answer the guiding questions. Ask students, "How are plants and animals interdependent?" "What are some examples of..."

Plant & Animal Needs LIFE CYCLES  
TEACHER GUIDE

Unit Pacing

Day	Lesson
1	Lesson 1: Plant Life Cycle
2	Investigation 1: What's Inside a Seed?

Next Generation Science Standards Alignment

Lesson 1:

Next Generation Science Standards  
LS2.A Interdependent Relationships in Ecosystems  
K-2-ESS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.  
SEP2 Developing and Using Models Develop a model to represent patterns in the natural world.  
SEP3 Obtaining, Evaluating, and Communicating Information Obtain information using various texts, text features, or media.

Plant & Animal Needs LIFE CYCLES  
TEACHER GUIDE

Book List

Plant & Animal Needs LIFE CYCLES  
TEACHER GUIDE

Videos

Lesson 1

Lesson 1

Lesson 1

Lesson 2

Unit Materials

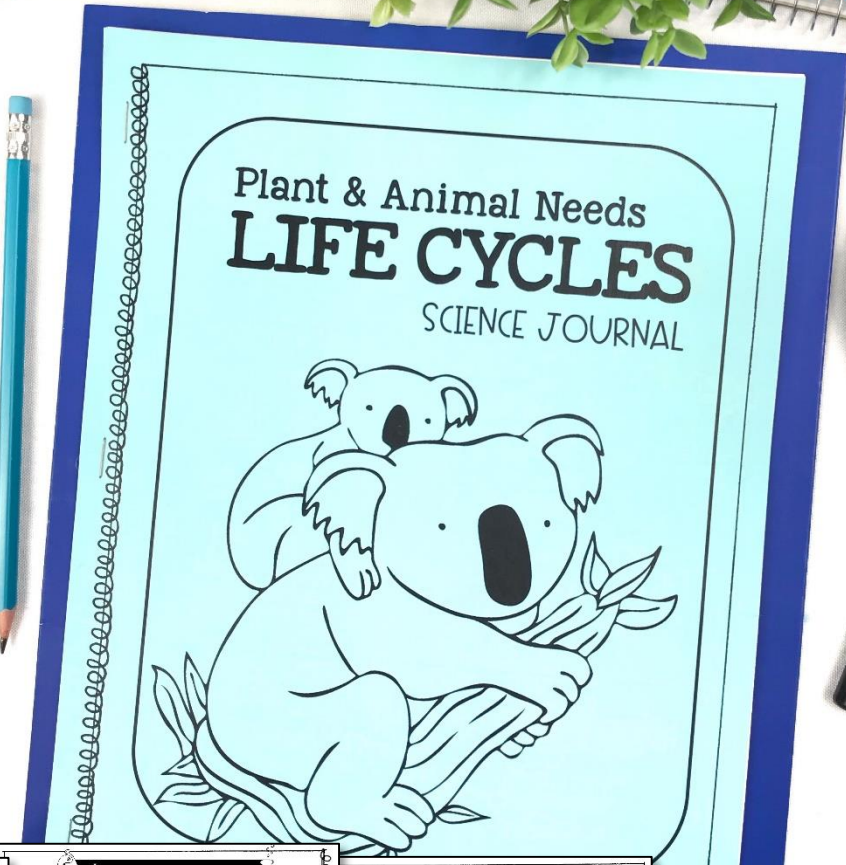
The following materials are needed to do the investigations/labs. All materials can be purchased at the dollar store or Walmart. Some of the materials are optional or can be replaced with items you may already have. \*Please see the teacher notes in each lab for amounts needed. This list does not include printable student copies or basic classroom supplies like pencils, crayons, scissors, or glue sticks.

Lesson 1	Lesson 5A
• bag of large lima beans	• Velcro
• paper towels	• bird seed
• hand lenses	• cotton balls or poly fill
• rulers	• pipe cleaners
	• craft sticks
	• craft glue
	• wiggly eyes
	• toilet paper rolls

# DETAILED LESSON PLANS

# RESPONSE JOURNAL ACTIVITIES INCLUDE:

- Applying vocabulary
- Short written response
- Writing to explain
- Labeling diagrams



Lesson 4 Animal Needs

Lesson 3 Animal Life Cycles

Lesson 6 Animal Needs

Lesson 3 Animal Life Cycles

Lesson 6 Animals Rely on Plants

Lesson 5 Plants Rely on Animals

Lesson 2 Plant Needs

Lesson 5 Plants Rely on Animals

Lesson 6 Animals Rely on Plants

Lesson 4 The Plant Life Cycle

Lesson 1 The Plant Life Cycle

Lesson 2 Plant Needs

Plant & Animal Needs  
**LIFE CYCLES**  
SCIENCE JOURNAL

Lesson 6 Animals Rely on Plants

Lesson 4 The Plant Life Cycle

Lesson 1 The Plant Life Cycle

Lesson 2 Plant Needs

What four things do plants need to grow?

How do plants help all living things?

Does each sentence describe a seed or a bulb?

Write S for seed, B for bulb

What is a life cycle?

How does each part help the plant?

Match the job next to each part of a plant

roots

stem

leaves

flower

Why are many leaves green?

What are your favorite plants to eat?

What are two ways plants begin?

Word Bank

adult plant  
seedling  
seed  
adult with fruit

# LESSON RESPONSE JOURNAL

# HIGH-ENGAGEMENT LESSONS

## STUDENTS DISCUSS, WRITE & INVESTIGATE

### LESSON 6 TALK ABOUT IT

#### Animals Rely on Plants

Talk with your partner about ways animals depend on plants.



### LESSON 6 JOURNAL

#### Write About It

### LESSON 5 TALK ABOUT IT

#### Plants Rely on Animals

### LESSON 5A INVESTIGATE

#### How Do Animals Spread Seeds?



### LESSON 4 INVESTIGATE

#### What Do Animals Need?



### LESSON 3 TALK ABOUT IT

#### Animal Life Cycles



Talk with your partner about these animal life cycles.

### LESSON 2 TALK ABOUT IT

#### Plant Needs

### LESSON 3 JOURNAL

#### Write About It

### LESSON 1 TALK ABOUT IT

#### Plant Life Cycle



Talk with your partner about how a seed protects the new plant.

How do bulbs protect a new plant?



### LESSON 2A INVESTIGATE

#### What do plants need to grow?

**QUESTION:**  
Can plants grow in the dark?

Design an experiment to test if plants can grow without sunlight.



### LESSON 1 JOURNAL

#### Write About It

### LESSON 2B DEMONSTRATE

#### How Do Plant Parts Work Together?

### QUESTION:

How does water



### LESSON 3 INVESTIGATE

#### Picture This! Collecting data from pictures

### QUESTION:



### LESSON 6 INVESTIGATE

#### How do plants create oxygen?

### QUESTION:

How can you show a plant creating oxygen?

Plants create oxygen for animals and humans to breathe. Investigate how plants create oxygen.



### LESSON 5B INVESTIGATE

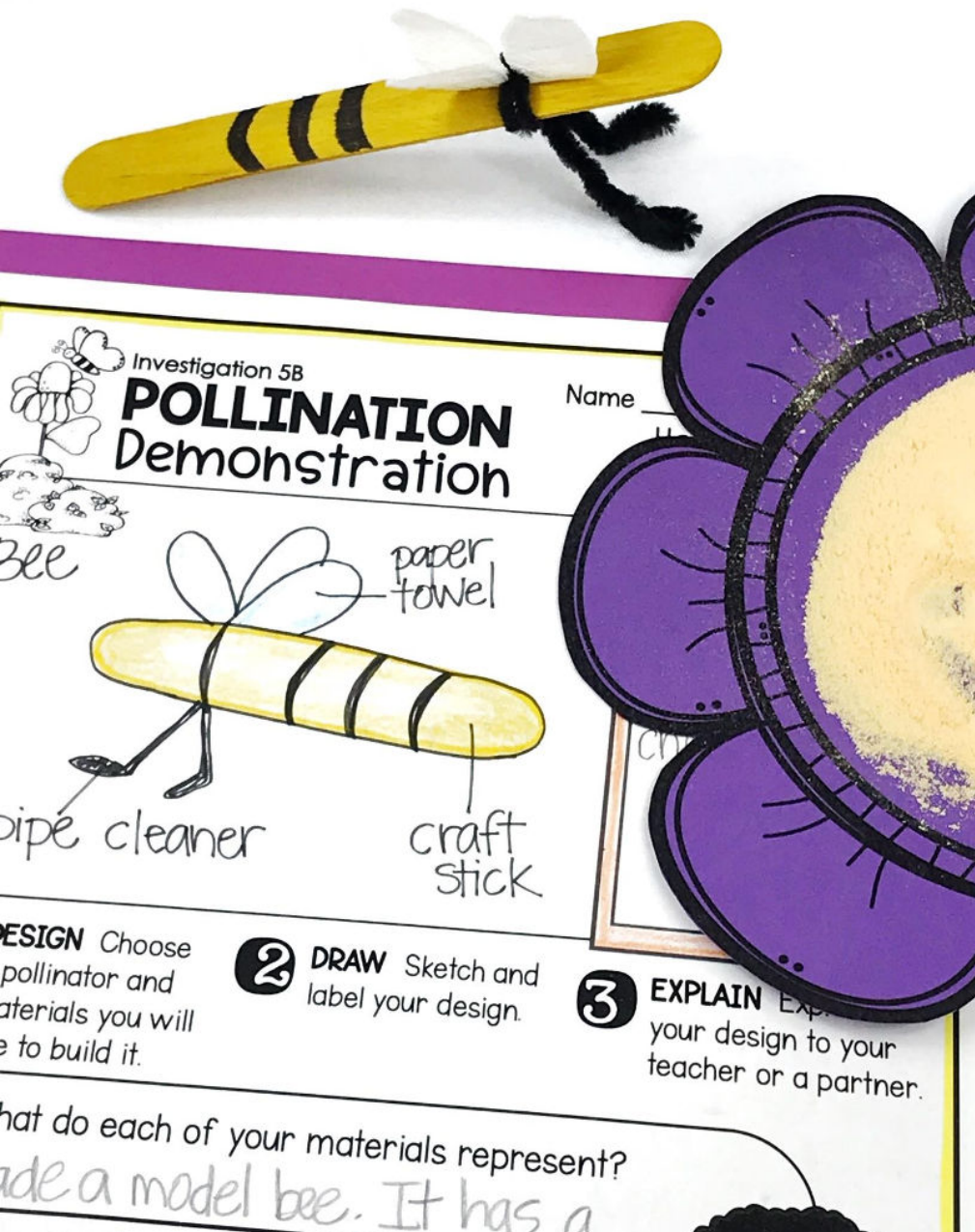
#### Pollination Power

**QUESTION:**  
How can you model  
pollination?

Think about how pollinators help plants. Create a model showing how an animal or insect pollinates a plant.



# 8 HANDS-ON INVESTIGATIONS



## STUDENTS EXPLORE:

- Plant & animal needs
- Simulating pollination
- Modeling animals dispersing seeds
- How water moves through a plant
- How plants create oxygen
- Writing an informational text on animal needs

# Students learn science process skills in fun and creative ways





# STEP-BY-STEP GUIDES

With teacher tips, materials list, procedures & pictures

Plant & Animal Needs LIFE CYCLES  
**TEACHER GUIDE**

**Lesson 5** Investigation 5A  
**How Do Animals Move Seeds?**

**QUESTION:** How do animals help plants disperse seeds?  
**OBJECTIVE:** Students will design and build a model that shows how seeds are dispersed by attaching to an animal.

**MATERIALS:**  
-black Velcro strips  
-bird seed  
-cotton balls or bag of poly fill  
-pipe cleaners  
-craft glue  
-wiggly eyes  
construction paper  
-toilet paper rolls  
-paper plate  
-paper sheet




**SEED DISPERSAL: DO ANIMALS MOVE SEEDS?**  
Investigation 5  
MATERIALS: what materials will you use to hold paper, cotton seeds, velcro, glue, colored paper, pipe cleaner  
I know some seeds...

Plant & Animal Needs LIFE CYCLES  
**TEACHER GUIDE**

**Lesson 5** Investigation 5A  
**Lab Procedure**


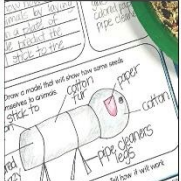

**Make A Model Animal**  
**NOTE:** This is one way students can make a model animal.

**INTRODUCE:** Explain to students, "We have animal's fur or feathers." Some seeds are dispersed by animal model that demonstrates different seeds and data..."



Plant & Animal Needs LIFE CYCLES  
**TEACHER GUIDE**

**Lesson 5** Investigation 5A  
**Lab Procedure**







Secure the poly fill with pipe cleaners that will also serve as the animal's legs. We folded the bottom of the legs up slightly to make them more stable.

Provide materials for students to choose from. I cut Velcro into squares, then in half diagonally to represent hooked seeds.

Students write a plan and draw a diagram of how they will make a model animal. This is just one example. Students can make their models any way they wish.

Pour some bird seed and any other seeds you are using onto a paper plate. I had students add the Velcro pieces to their plate of seeds.


Students then use their model to act out an animal walking, laying down, and rolling in a field or in the woods etc.

Students add eyes, ears, etc. of the specific animal they have chosen to make. One of my students made a cow by using a Sharpie to draw large black spots on the body.

Students record observations and explanation, on their lab sheets.

Plant & Animal Needs LIFE CYCLES  
**TEACHER GUIDE**

**Lesson 1** Investigation 1  
**Lab Procedure**

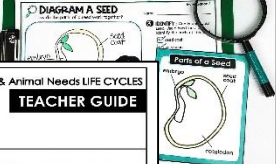


Plant & Animal Needs LIFE CYCLES  
**TEACHER GUIDE**

**Lesson 1** Investigation 1  
**What's Inside a Seed?**

**QUESTION:** How do the parts of a seed help a plant grow?  
**OBJECTIVE:** Students will diagram the inside of a seed and explain the function of each part.


**MATERIALS:**



enough beans for however it is best to

Plant & Animal Needs LIFE CYCLES  
**TEACHER GUIDE**

**Lesson 2** Investigation 2A:  
**Lab Procedure**



Plant & Animal Needs LIFE CYCLES  
**TEACHER GUIDE**

**Lesson 6** Investigation 6  
**Lab Procedure**



Plant & Animal Needs LIFE CYCLES  
**TEACHER GUIDE**

**Lesson 4** Investigation 4  
**What Do Animals Need?**

**QUESTION:** How do animals pollinate plants?  
**OBJECTIVE:** Students will build a model of a pollinator to demonstrate it pollinating plants.

**MATERIALS:**  
-mac & cheese powder (1/3 pack per 3-4 students)




Plant & Animal Needs LIFE CYCLES  
**TEACHER GUIDE**

**Lesson 2A** Investigation 2A  
**Do plants grow without sunlight?**

seeds LIFE CYCLES  
**TEACHER GUIDE**

dark?  
an can



Plant & Animal Needs LIFE CYCLES  
**TEACHER GUIDE**


**Lesson 2** Investigation 2B - Demonstration  
**How does water move through a plant?**

**QUESTION:** How can we see the parts of a plant work?  
**OBJECTIVE:** Students will observe a demonstration to understand how a plant's roots and stem help a plant grow.

**MATERIALS:**  
-clear jar or vase  
-fresh celery stalks with leaves  
-red or blue food coloring  
-water  
-spoon

**TEACHER NOTE:** Due to time constraints, I did this lab as a demonstration for my students. Over a three day period, students took about 10 minutes to observe the changes and record observations. You could easily do this as a lab experiment by dividing students into group and having one group be the control group. Each group could use a different color of food coloring. The control group would use no food coloring. After three days, students can compare results with other groups.

**DEMONSTRATION PROCEDURE:**



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**Lesson 6** Investigation 6  
**Breathing Leaves**

**QUESTION:** How can you see a plant creating oxygen? Can plants produce oxygen without sunlight?  
**OBJECTIVE:** Students will observe a leaf using sunlight to create oxygen.

**MATERIALS:**  
-clear plastic cup or bowl  
-fresh leaves  
-water  
-small rocks  
-hand lens  
-lab sheet

**INTRODUCE:** Explain to students, "As we breathe, the air we inhale is 21% oxygen. After we breathe in oxygen we exhale carbon dioxide. Carbon dioxide is needed by plants for them to live. Plants use carbon dioxide and sunlight to help them make oxygen. Leaves convert sunlight into energy as part of a process called photosynthesis. As the leaf takes in sunlight to create that energy, it expels, or breathes out, oxygen. But how can we see oxygen? Can plants produce oxygen without sunlight? "Think about when you are underwater holding your breath. If you release a little bit of air, you see bubbles. Today we will do a demonstration using leaves in water to help us see the oxygen a leaf expels, or breathes out. We will also test if a plant can still produce oxygen without sunlight."

**PROCEDURE:** Changes occur over a 1-2 hour period. It works best to set up the lab in the



# LITERACY-BASED SCIENCE CENTERS

## Literacy based **EXTENSION ACTIVITIES**

**ORGANIZE DATA IN A TABLE**

Name \_\_\_\_\_

**ORGANIZE DATA IN A TABLE**

Directions:

- 1 Read each card.
- 2 Choose 3 categories for sorting.
- 3 Find the cards that fit in your categories.
- 4 Write the picture names on your paper in the correct category.

DEPENDS ON PLANTS FOR FOOD

DEPENDS ON PLANTS FOR SHELTER

squirrel

**CAUSE**

**EFFECT**

**CAUSE & EFFECT**

Draw lines to match the causes to the effects.

**CAUSE** is why something happens

**EFFECT** is the thing that happened

A bee lands on a flower then flies off to another bloom.

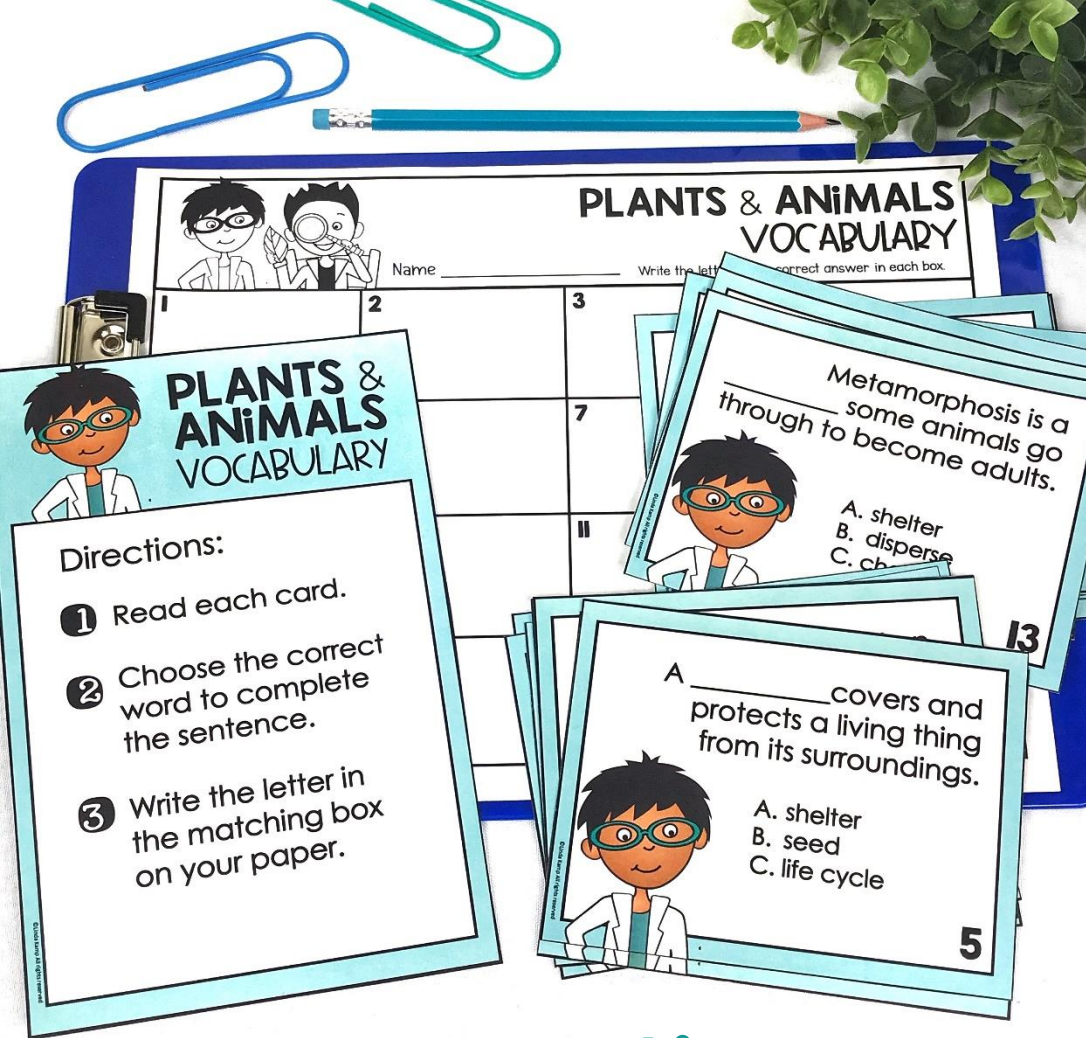
The seeds are spread to new places in the animal's waste.

Some animals eat fruit with seeds.

The leaves of the trees turn the sunlight into energy and oxygen.

Integrate science in your reading centers

# Reinforce SCIENCE CONTENT

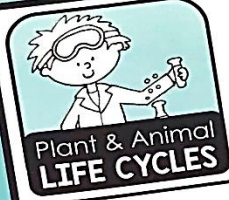


# Practice MATH & LITERACY SKILLS



Centers included in color and black & white

# LESSON SUPPORT



## BIG IDEA

Living things have basic needs in order to grow.

Needs - LIFE CYCLES

Vocabulary Cards

nutrient  
shelter  
needs

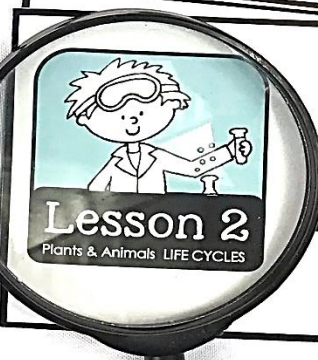
basic things a plant or animal needs to survive

Lesson



## GUIDING QUESTION

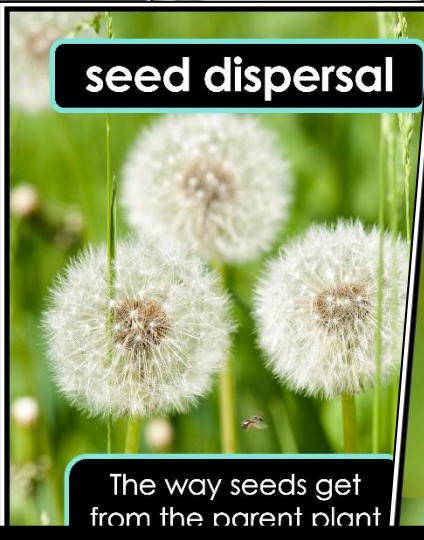
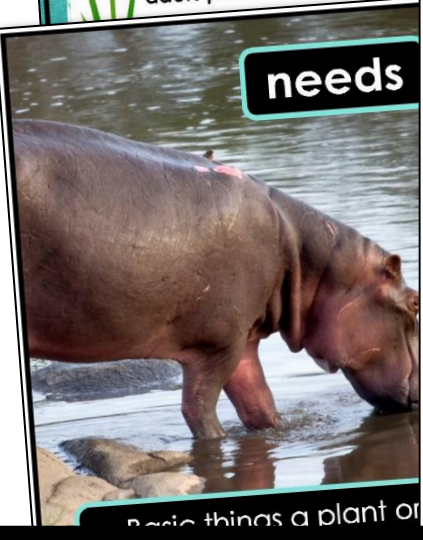
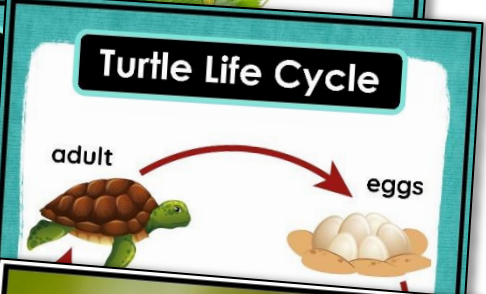
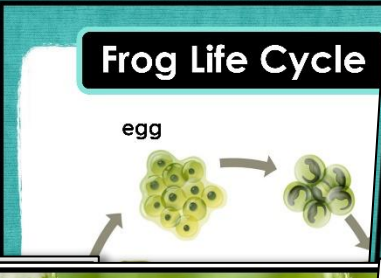
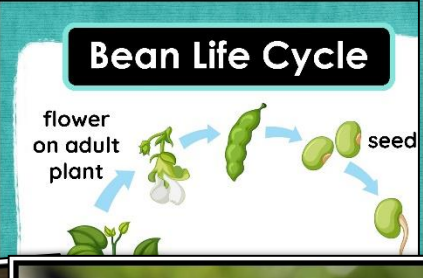
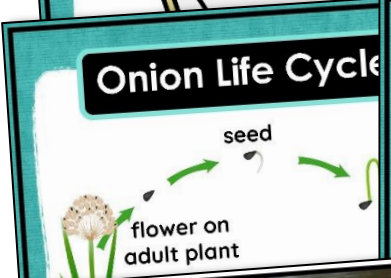
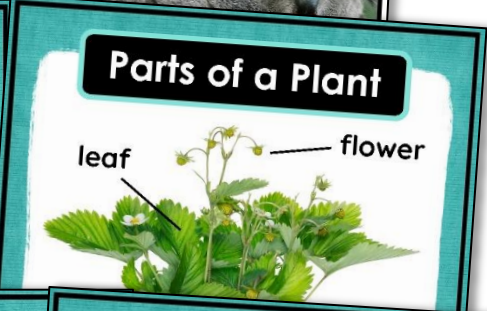
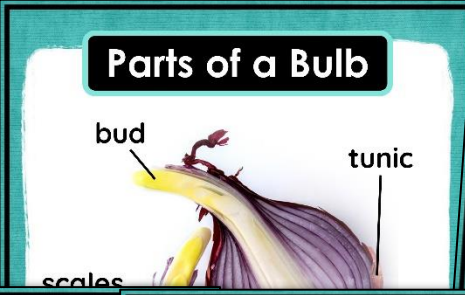
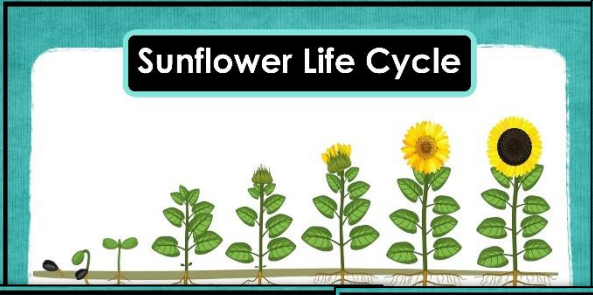
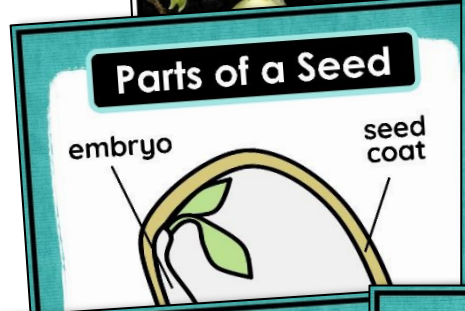
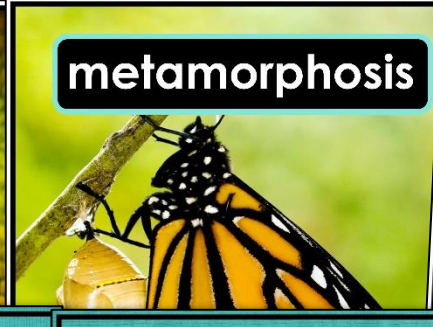
What do animals need to grow?



can describe the needs of plants.

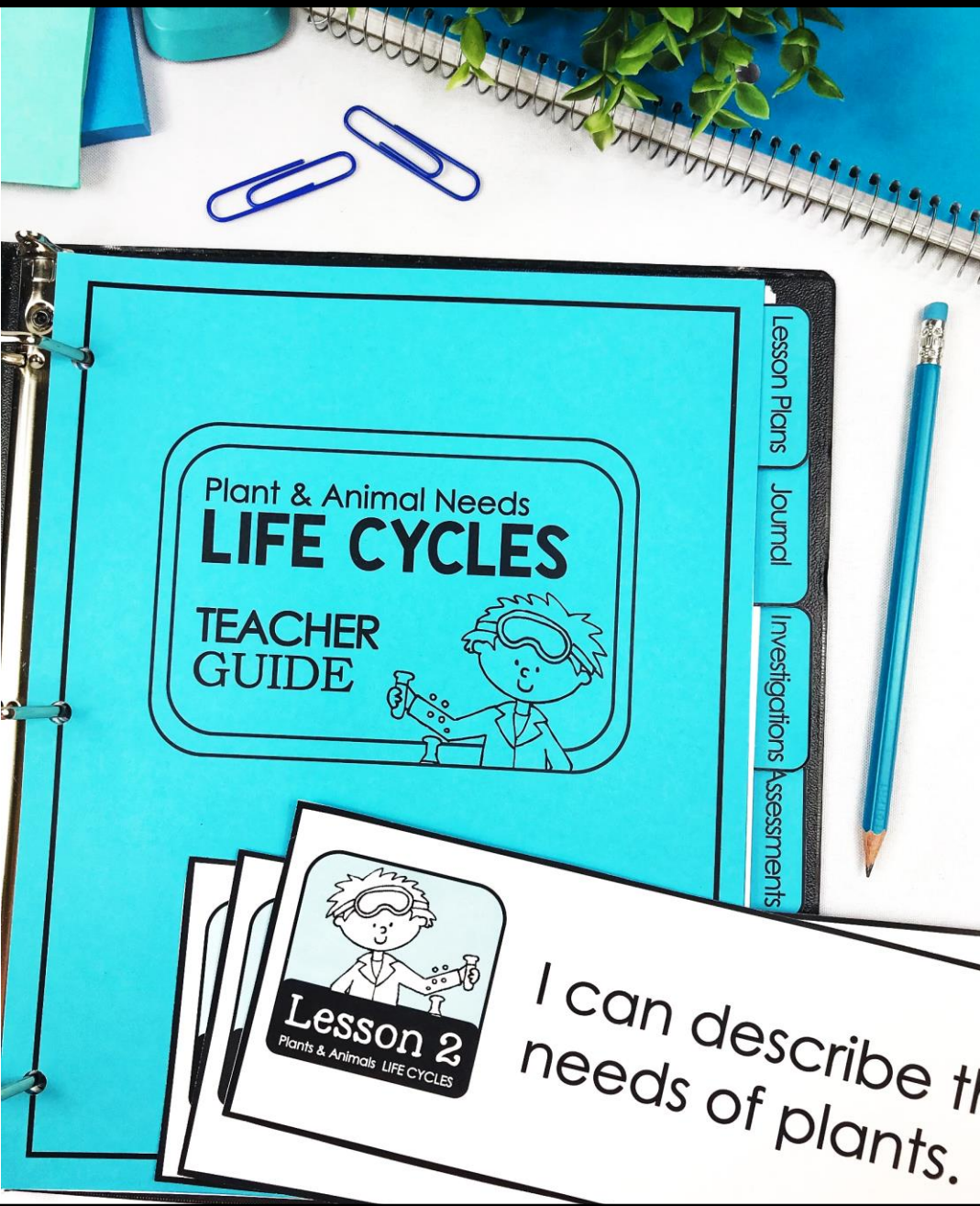
Objectives Cards

Focus Wall Cards



# Full Page Vocabulary Posters

# UNIT PLANNING BINDER



Organize your unit  
in a handy  
planning binder

Binder includes:

- cover & spines
- section dividers
- divider tabs

**PLAN, TEACH &  
ASSESS** an in-depth  
and effective unit

## Plant & Animal Needs **LIFE CYCLES**

GRADE  
**2**



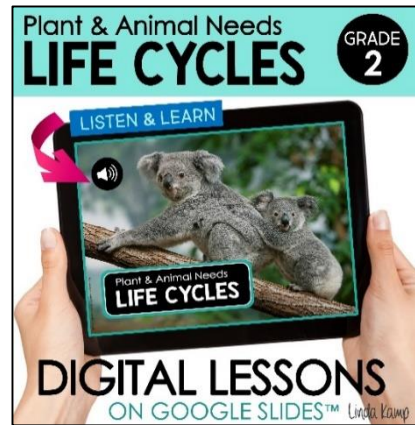
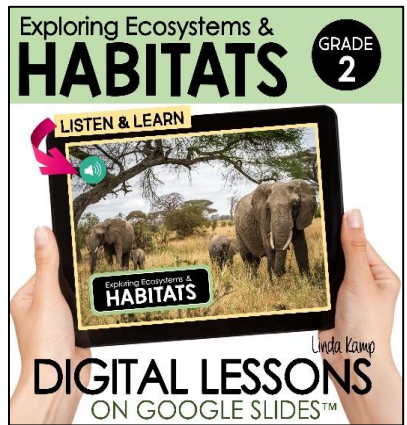
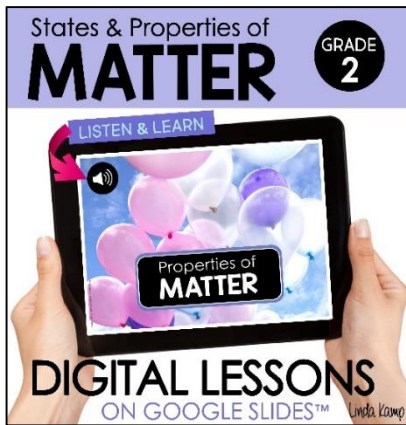
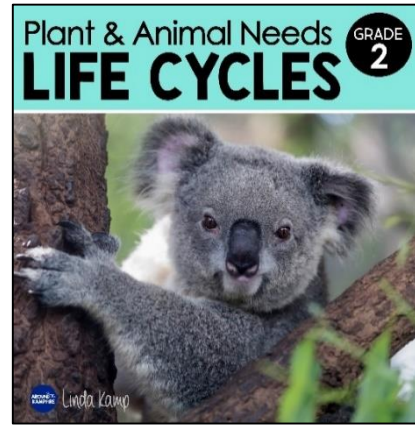
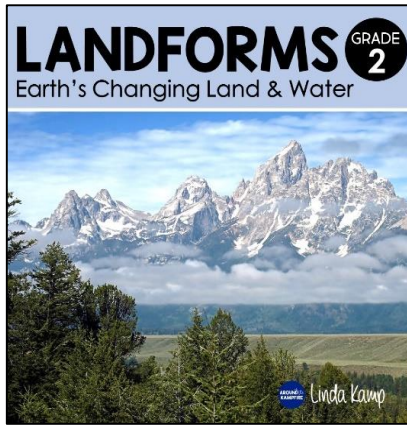
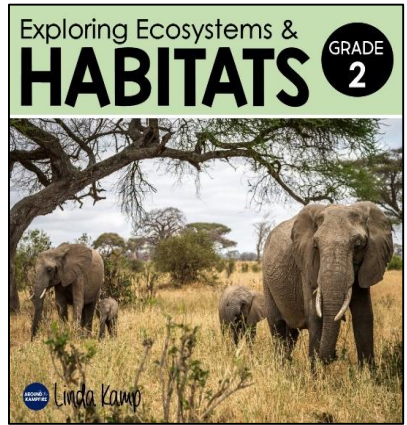
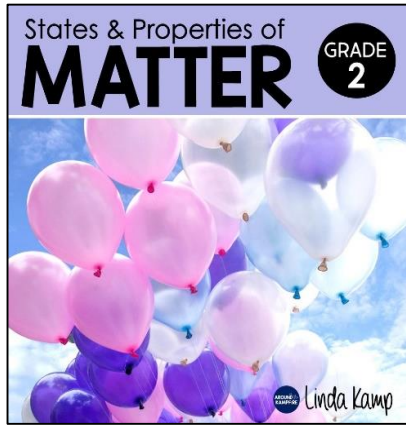
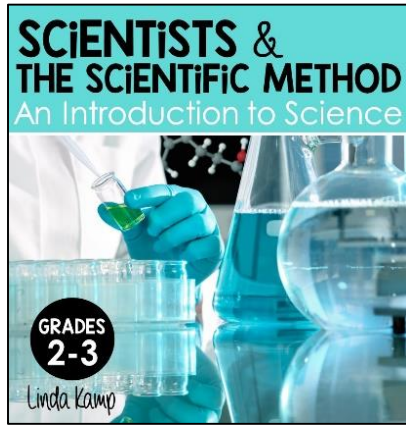
## STUDENTS GAIN UNDERSTANDING OF:

- Plant and animal needs
- Interdependence of plants and animals
- Types of life cycles
- Parts of a seed, plant & flower
- Collecting & analyzing data
- Planning & carrying out investigations
- Engineering design
- Building models that mimic pollination & seed dispersal
- Using texts and other media to answer scientific questions



# Build a science foundation!

See the entire series [CLICK HERE](#)



## Second Grade Science Curriculum