Center of Excellence in Middle-level, Interdisciplinary Strategies for Teaching

University of South Carolina Aiken
471 University Parkway
Aiken, South Carolina 29801
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Plant Structures with 2-D Shapes

Developed by: Mallory Walp

Grade Level: First Grade

Subject Area(s): Math, Science, ELA

Standards Correlation:
Math: 1.G.2 Combine two-dimensional shapes (i.e., square, rectangle, triangle, hexagon, rhombus, and trapezoid) or three-dimensional shapes (i.e., cube, rectangular prism, cone, and cylinder) in more than one way to form a composite shape.
1.MDA.4 Collect, organize, and represent data with up to 3 categories using object graphs, picture graphs, t-charts and tallies.
1.MDA.5 Draw conclusions from given object graphs, picture graphs, t-charts, tallies, and bar graphs.

Science: 1.L.5A.1 Obtain and communicate information to construct explanations for how different plant structures (including roots, stems, leaves, flowers, fruits, and seeds) help plants survive, grow, and produce more plants.
ELA: W 2.1 Explore print and multimedia sources to write informative/explanatory texts that name a topic, supply facts about the topic, and provide a sense of closure.

Duration: 4 days, 35 minutes

Grouping: Whole group, Independent, Think and Pair Groups

***Lesson Objective(s)*:**
Math: I can create a composite shape with 2-d shapes. I can represent data in various types of graphs.
Science: I can identify and represent the different structures of a plant.
ELA: I can create an informational piece of writing.

Materials: Variety of 2d Shapes, Bucket to hold shapes, Camera, Handwriting paper, various types of charts (tally, bar graph, picture graph)

Procedures: Learning Cycle, 5E, or 7E preferred

Elicit	Elicit prior knowledge by asking the following questions: • Ask students to identify the 2-dimensional shapes. • What are the structures of a plant and what jobs do they do? • How do you create a composite shape?

Engage	Engage the students by showing different composite shapes made through the use of two-dimensional shapes on the projector. Students will then be handed 2-dimensional shapes as their desk. Allow students to create a composite shape of their choice. Students will then turn and talk about what shape they created.
Explore	Prior to class: Teachers will have various examples of composite shapes on the projector to engage students. Teacher will have a variety of 2-d shapes in buckets so each table will be able to access them to create their composite shape. Student will discuss the different structures a plant in a turn and talk activity. Students will create a composite shape of a plant with every structure of the plant represented in their composite shape. Teacher will tell students to use a variety of shapes to create their plant. Teacher will walk around and take a picture of each students' creation with the camera.
Explain	The teacher will show students an example of a composite shape on the board. The teacher will model have to fill in the tally chart based on the example. Students will be handed a tally chart and a picture of their composite shape. Students will fill in the correct number of tallies and total number using the chart attached below. Students will then create their bar graph (chart is attached to lesson plan) with the data from their tally chart. Questions to ask: • What are the different structures of a plant? • Which shapes did you use in you composite shape?
Elaborate	Students will take all the information and activities they did throughout the week to create their informational writing on how they created their composite shape. Students will include what shapes they used to represent each plant structure, how many of each shape they used, rational on why they choose certain shapes to represent a certain plant structure, and analyzation of the data represented in their bar graph.
Evaluate	Students will be evaluated based on the following criteria: • Representation of every plant structure in their composite shape. • Informational writing on how students created their composite shape, what shapes they used to create each plant structure, and analyzation of data in the graphs. (Use writing rubric) • Correct data represented in the tally chart and bar graph.
Extend	Students will be allowed to represent their data in other types of graphs (picture graph, pie chart, t-chart). Students can also extend this activity by researching a unique plant and then creating it with 2d shapes.

Tally Chart

Name_______________________________________

Shape	Tally	Total
Circle		
Triangle		
Square		
Diamond		
Trapezoid		
Hexagon		
Rhombus		

Tally Chart

Name_______________________________________

Shape	Tally	Total
Circle		
Triangle		
Square		
Diamond		
Trapezoid		
Hexagon		
Rhombus		

Tally Chart

Name_______________________________________

Shape	Tally	Total
Circle		
Triangle		
Square		
Diamond		
Trapezoid		
Hexagon		
Rhombus		

Bar Graph of Shapes Used

14							
13							
12							
11							
10							
9							
8							
7							
6							
5							
4							
3							
2							
1							
	circle	triangle	square	diamond	trapezoid	hexagon	rhombus

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Natural Resources around the World

Developed by: Ivey Peteet

Grade Level: First Grade

Subject Area(s): Social Studies

Standards Correlation: 1-1.3, 1-1.4: How are natural resources used around the world?

Duration: 5 days 30-45 minutes a day

Grouping: Students will be grouped into pairs

***Lesson Objective(s)*: I can compare the ways that people use land and natural resources in different settings around the world**

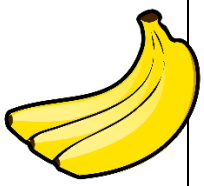
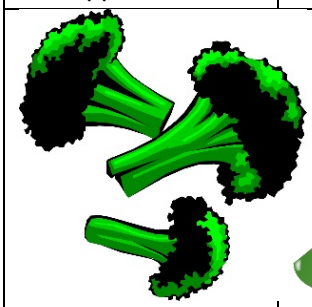
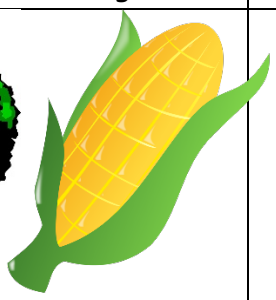
Materials:

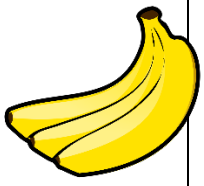
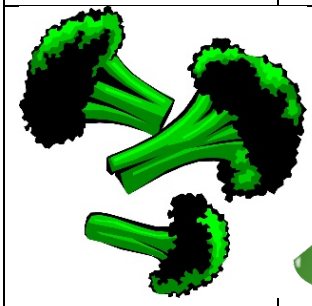
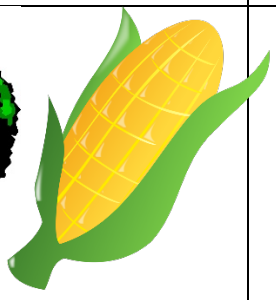
- ***Countries series by Christine Juarez (Mexico and China)***
- ***Real or plastic coffee beans, sugar, pinto beans, chili peppers, bananas, broccoli, corn, cotton, and rice.***
- ***Two large hula hoops (to make a 3D Venn diagram)***
- ***Natural Resources (template)***
- ***Blank Venn Diagram (template)***
- ***Writing paper or Social Studies journal page (for extend only)***

Elicit	Engage students by showing real or plastic coffee beans, sugar, pinto beans, chili peppers, bananas, broccoli, corn, cotton, and rice. These resources are used in many different places around the world. Elicit prior knowledge by asking the following questions: 1. What are natural resources? 2. Where can you find these natural resources? 3. What environment/climate do these resources grow? 4. How do people use these natural resources?
Engage	<u>Engage</u> 1. Show the students Mexico and China on a globe. The students will use

	schema to predict where we think these plants are produced (or most prevalent). 2. Put the prediction on the 3D Venn diagram (use two hula hoops- place items inside)
Explore	Read the books, Mexico and China. As you read these books, students will look at their predictions and discuss what items need to be moved. The students will put the items in the correct category on the Venn diagram.
Explain	Show the students the corrected 3D Venn diagram that was created. Explain to the students that they will use the 3D model to create their own Venn diagram. Use the Natural Resources template provided to compare the natural resources found in Mexico and China. The template provides an empty space to write and draw a student-selected natural resource. Questions to ask • How are natural resources in Mexico and China alike? Why? • How are natural resources in Mexico and China different? Why?
Elaborate	The students will be grouped into pairs. Let the students work anywhere around the room. The pairs will create their own Venn Diagram (using the template provided).
Evaluate	Call students to your table and ask the student to tell you two natural resources produced in China and Mexico. Then two resources produced in both China and Mexico.
Extend	You can extend this activity by having the students create an informational writing comparing China and Mexico. The students can also read about the United States of America, Afghanistan, Canada, Egypt, England, India, Japan, and Kenya (provided in Countries series). Then they could create a booklet comparing China/Mexico, USA/Kenya, Afghanistan/Japan, Canada/India, and Egypt/England.

Natural Resources (Mexico/China) Venn Diagram is attached below

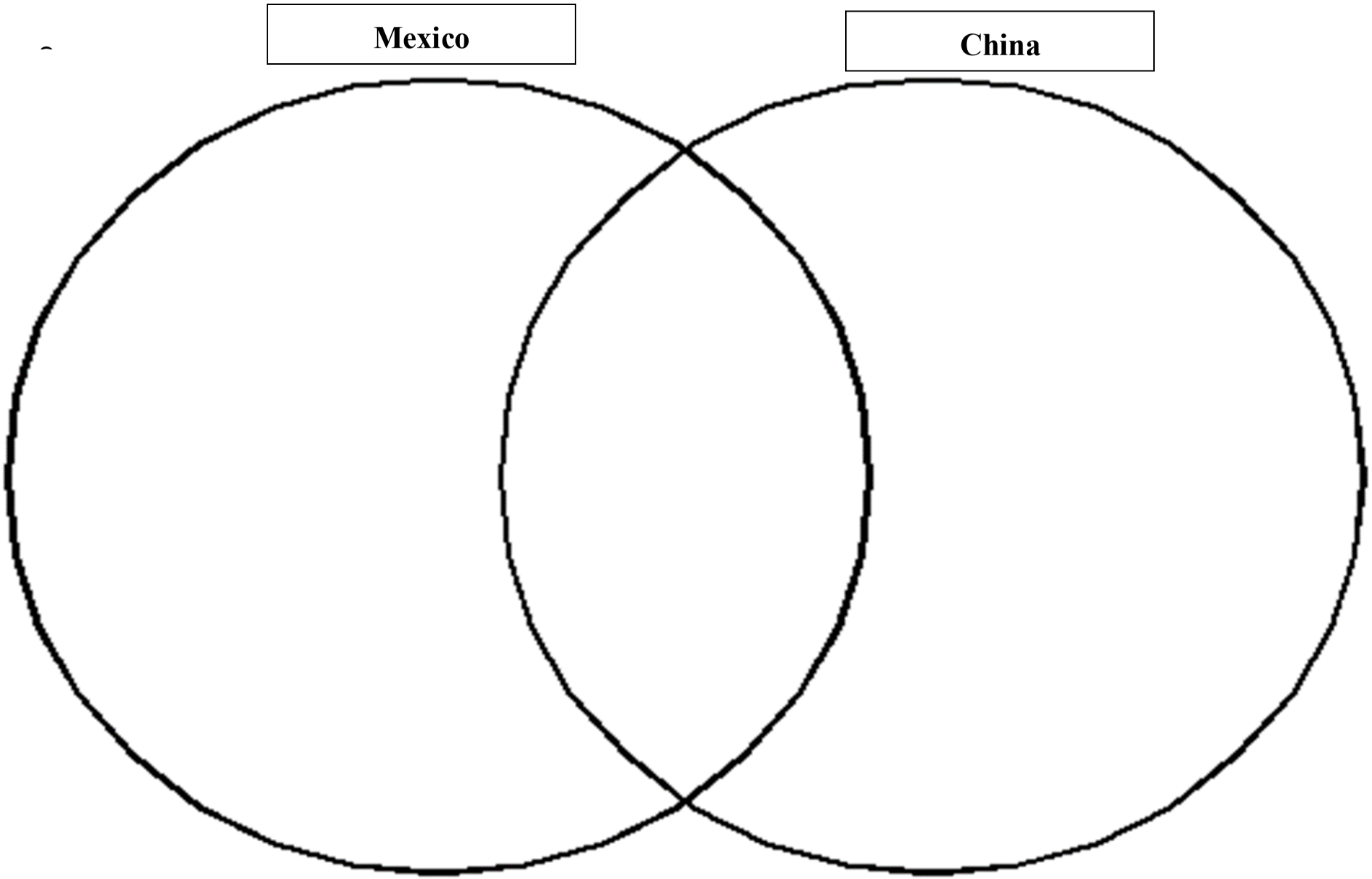
 Coffee beans	 Sugar	 Pinto Beans	 Chili Peppers	 Bananas
 Broccoli	 Corn	 Cotton	 Rice	_____

 Coffee beans	 Sugar	 Pinto Beans	 Chili Peppers	 Bananas
 Broccoli	 Corn	 Cotton	 Rice	_____

Name: _____ Date: _____

Natural Resources

Directions: Place items into the correct category.



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Non-Fiction Text Features Plant Folder

Developed by: Melissa Tindall

Grade Level: First Grade

Subject Area(s): ELA

Standards Correlation: RI.8.2. How does understanding the text structure help me better understand what I read?

Duration: 4days 20 minutes a day

Grouping: Students will be grouped into pairs

***Lesson Objective(s)*: Students will be able to locate the text features in a non-fiction plant book.**

Materials:

- ***file folder***
- ***non-fiction plant books***
- ***non-fiction books***
- ***pencil***
- ***crayons***
- ***non-fiction text feature labels***
- ***sticky notes***

Elicit	Engage students by passing out non-fiction books and allowing students to investigate their plant books while looking for text features within the books. Elicit prior knowledge by asking the following questions: 5. Where is the heading located? 6. Where is the table of contents located? 7. Where at headings and why do we have headings? 8. What are bold print words? 9. What does a photograph look like? 10. Why are captions in non-fiction books? 11. What is a diagram for?

	12. Where do you find the glossary and what is a glossary for? 13. Where do you find the index? Why do we have an index?
Engage	<u>Engage</u> 3. Show the students a video on non-fiction books and text features • Watch brain pop jr. • Answer questions at the end of the video
Explore	Pass out books and sticky notes. Call out a text feature and have students find that text feature and stick it with a sticky note. Have them write what the text feature is on the sticky note. Have the students talk to their table mates/partners to see if they found the correct text feature.
Explain	The teacher will show the students the Non-fiction Text Feature Folder that was created. Then the teacher will demonstrate and explain how to complete the Non-fiction Text Features folder by using a plant book. The teacher will demonstrate each text feature and explain how to correctly write the information in each box of the folder. (you can find an example in the Tilt) <u>Questions to ask</u> • Where do I find this text feature? • How would I write it in my folder? (these are questions you can use for each of the text features)
Elaborate	The students will be grouped with another student. Let the students work anywhere around the room. The students will work with their partner to complete the Non-fiction Text Features folder on their plant book. They will find the table of contents, headings, bold print, photograph/caption, diagram, glossary and index and fill in the information on their folder for each one.
Evaluate	Call students to your table and ask the student to point or turn to each of the text features in the non-fiction book that you name.
Extend	You can extend this activity by creating a text feature book on different plants. Use the different text features to create a book as a class or in groups.

Table of Contents	Heading
Bold Print	Photograph/Caption
Diagram	Glossary
Index	Non-fiction Text Features

^ Labels for Non-fiction Text Features Folder

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Parts of a Plant

Developed by: Tyquaisha Ingram

Grade Level: First Grade

Subject Area(s): Science

Standards Correlation: 1.L.5A.1: How do the structures of a **plant** help the **plant** survive, grow, and produce more **plants**?

Duration: 2 days 30-45 minutes a day

Grouping: Students will work independently and a partner.

***Lesson Objective(s)*:** I can identify the different plant structures and their jobs.

Materials:

- ***BrainPopJr. Parts of a Plant***
- ***Seed to Plant by Gail Gibbons***
- ***Brown yarn***
- ***Mini cupcake holder***
- ***Beans***
- ***Yellow construction paper***
- ***Green construction paper***
- ***Brown construction paper***
- ***Blue construction paper***
- ***Plant structures sheet***

Elicit	Engage students by showing real or pictures of plants. They can be displayed around the classroom. Elicit prior knowledge by asking the following questions: 14. What do you know about plants?

	15. What are the structures of a plant?
Engage	Engage 4. Show the students pictures of plants. Discuss what the students see in the plant. 5. Show students a real plant and allow the students to touch the structures of the plants.
Explore	**Day 1:** Give each student a construction paper to put the plant on, green construction paper, brown construction paper, brown yarn and a lima bean. Teacher will tell students the blue construction paper is the background of the plant. Teacher will tell students to leave materials on desk until given instructions. Teacher will show BrainPopJr. Parts of a Plant. Teacher will pause video after section on roots. (Pause to discuss with students, students will create roots and add to the plant. Students will use brown construction paper to make the soil and use the brown yarn to make the roots.) Continue the video and pause video after section on seeds. (Pause to discuss with students and students will add seed to their plant.) Continue the video and pause the video after section on stem. (Pause to discuss with students and students will create a stem and add to their plant.) Read Seed to Plant by Gail Gibbons with students and discuss the roots, seeds, and stem. Students will use the plant structure words, cut them out and glue them on the plant to represent the plant structure. **Day 2:** Give students their plant. Give students mini cupcake holder, green construction paper, yellow construction paper and seeds. Rewatch BrainPopJr. Parts of a plant and discuss roots, seed and stem as a review. Teacher will pause video after section on leaves. (Pause to discuss the section on leaves and students will add the leaves to their plant.) Continue the video and pause the video after the section flowers. (Pause to discuss the section on flowers and have students cut out the flowers.) Students will use the mini cupcake holder to put in the middle of the flower. The students can add seeds to the cupcake holder. (Students will add the flowers to the outside of the cupcake holder.) Continue to read Seed to Plant by Gail Gibbons with students and discuss the structures of a plant. Students will use the plant structure words, cut them out and glue them on the plant to represent the plant structure.
Explain	Show students a model of how to make the flower. Explain to students that we will create each part as we watch the video. Students will cut the plant structures and functions to make a flower. Teacher will pause the video after each plant structure, ask students a question about the structure and where it goes on the plant. Questions to ask • What is the purpose of the roots? • What is the purpose of the seed? • What is the purpose of the stem? • What is the purpose of the leaf? • What is the purpose of the flower?

Elaborate	The students will work independently to create the parts of a plant. The students will work with a partner to discuss the structures of a plant.
Evaluate	Call students to your table, pick 2 plant structures and ask students to tell the purpose of the plant structures and where it is located at on the plant.
Extend	You can extend this activity by having the students create an additional plant. The teacher could review plant structures and allow students to create their own plant and label the structures of the plant. Students can write about the parts of the plants, their functions and their jobs.

Labels for Parts of the Plant

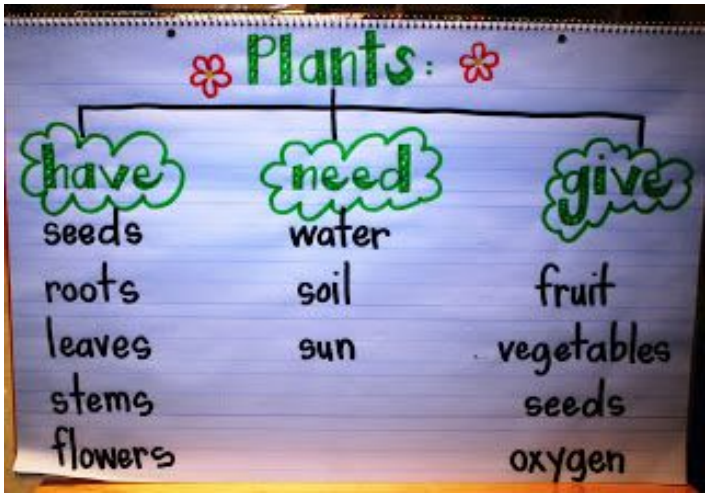
Flower
Stem
Leaf
Seed
Root

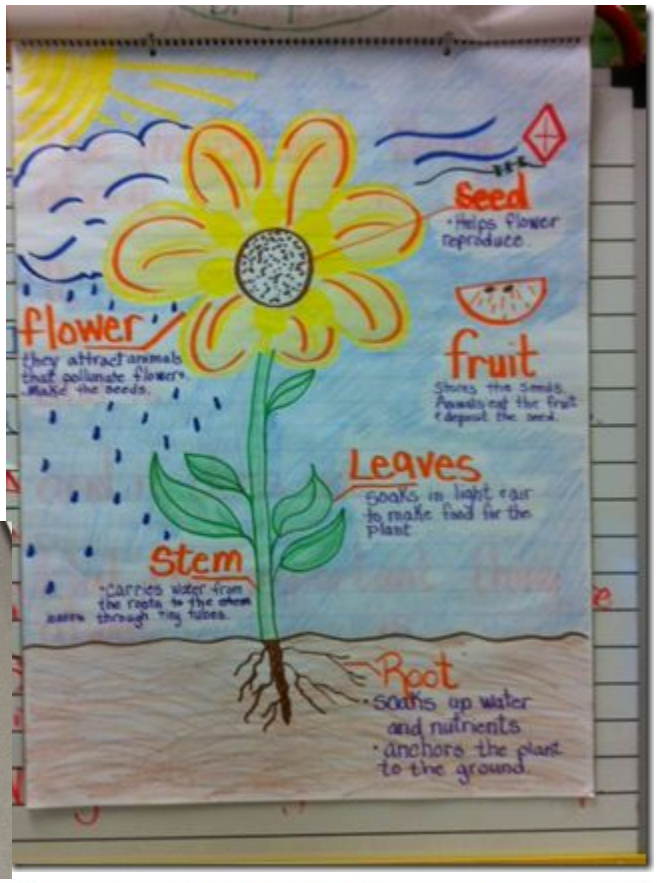
Flower
Stem
Leaf
Seed
Root

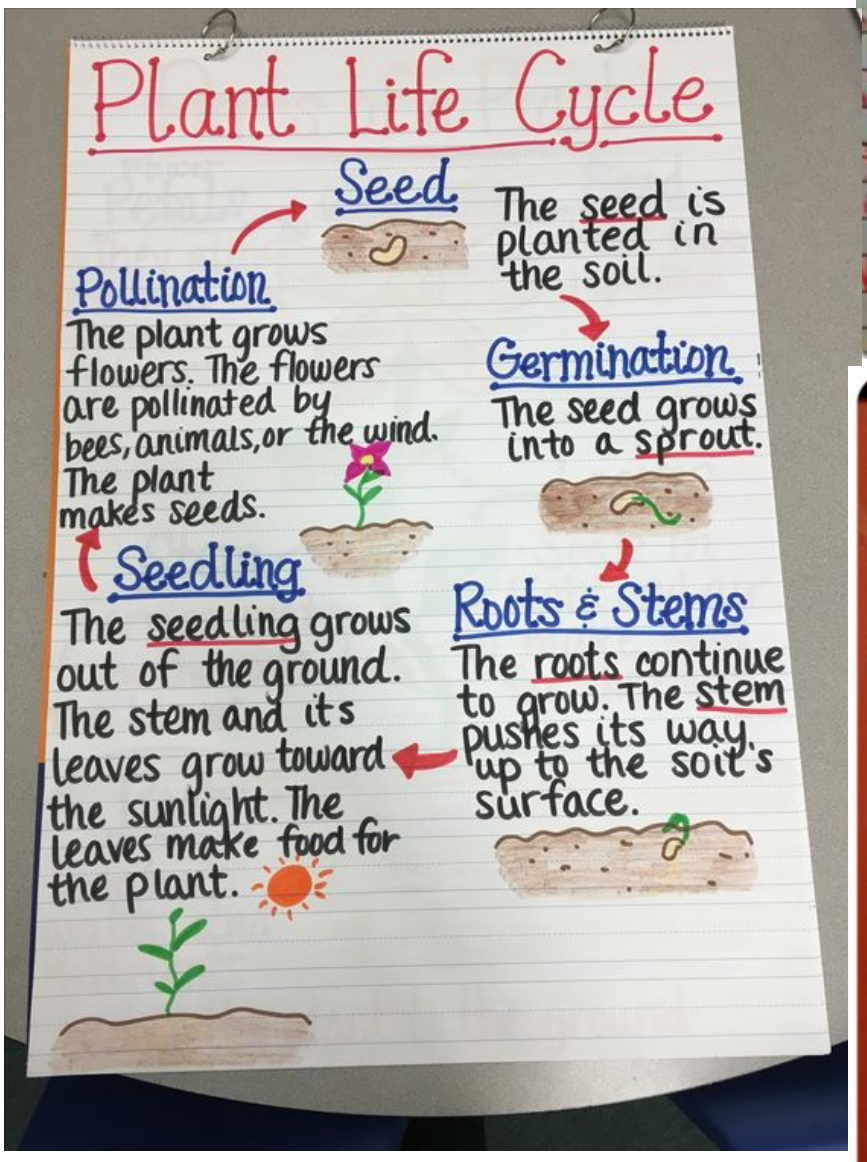
Flower
Stem
Leaf
Seed
Root

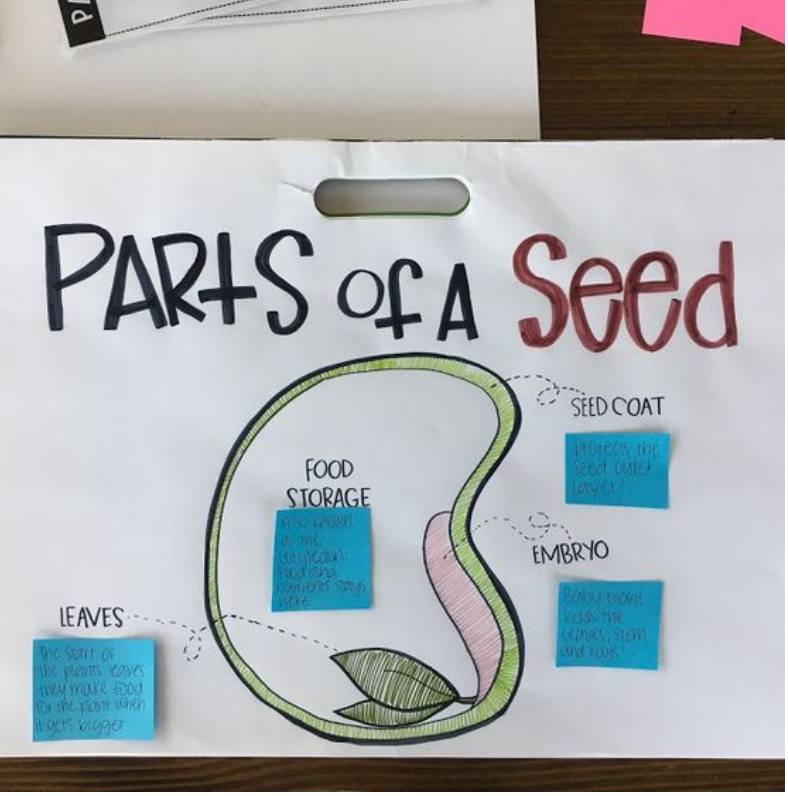
Unit Resources

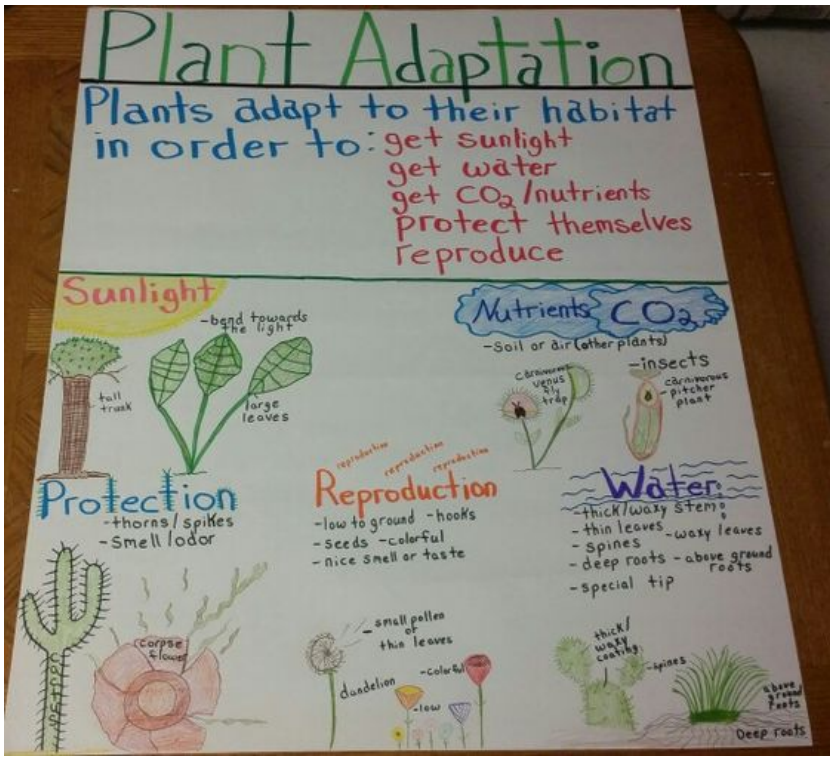
*Anchor Charts:

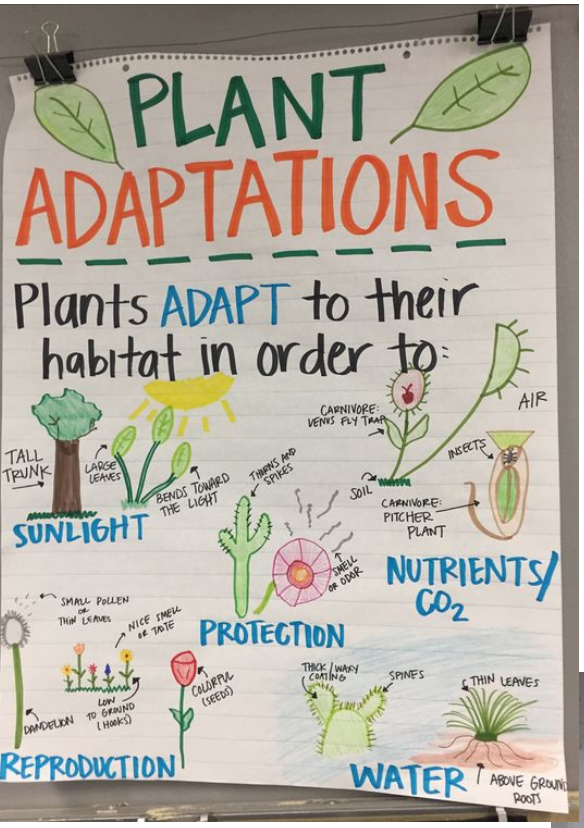


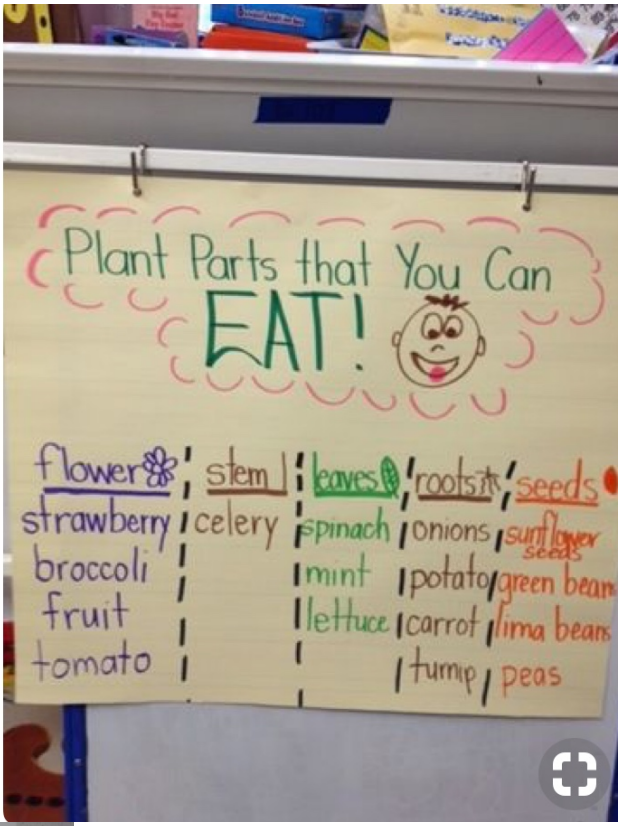


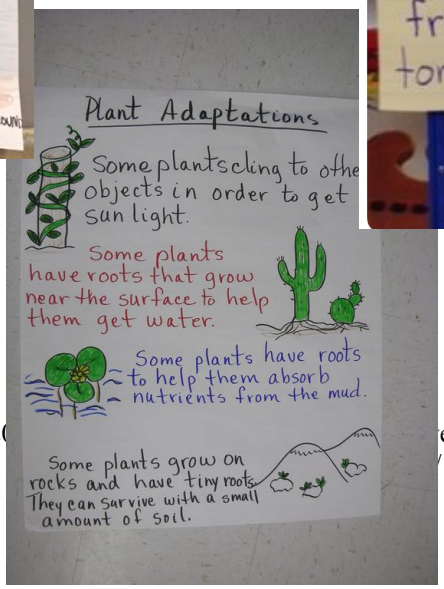












*Videos:

Brainpop Jr. "Parts of a plant"

Brainpop Jr. "Plant Adaptations"

Brainpop Jr. "Plant Lifecycle"

Brainpop Jr. "Desert"

Brainpop Jr. "Forest"

Parts of a Plant Song

Peep and the big wide world: Plants a seed

Plant Adaptations

Plant Life Cycle / Plant Parts / Plant Needs

Plant Videos

*Songs:

Parts of a Plant Song

Parts of Plant Song

*Consumable Resources:

Plants-can, have, are

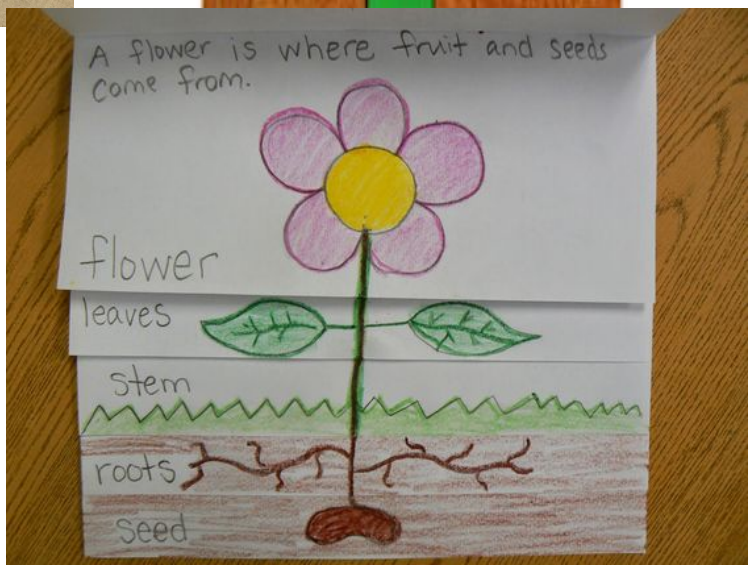
Plant Lifecycle

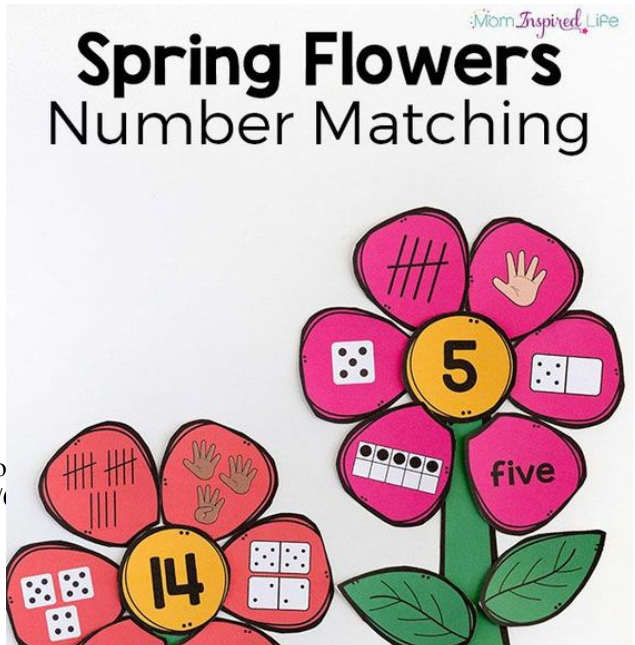
Plant Parts

Habitats Foldable

My Little Sprout House

*Additional Activities:





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