### **CCPS Science Unit Plan**

Grade	Kindergarten	Subjec	t	Science		Unit #	6
Unit Name	Unit 6: Organisms 5 weeks						
How to use the Framework	This Framework should be used to implement daily science instruction. The resources and instructional strategies reflected in the Framework will provide a foundation for effective implementation and student mastery of standards.  Please see the hyperlinked abbreviation document to ensure understanding of all abbreviations used with this framework.  CCPS Department of Science Website for access to all unit frameworks						
Unit Overview	*All resources related to this Framework are embedded in this document or can be located via the Science Department website.  Background: In this unit, the students will understand that organisms are plants and animals possessing characteristics and needs. Organisms have inherited traits from the parent of the young that may cause them to appear similar and share distinct features. The student will explore these features and characteristics.  By the end of this unit the student will be able to  obtain, evaluate, and communicate information to compare the similarities and differences in groups of organisms.  animals: Construct an argument supported by evidence for how animals can be grouped according to their features.  plants: Construct an argument supported by evidence for how plants can be grouped according to their features.  offspring Observations: Ask questions and make observations to identify the similarities and differences between offspring, their parents, and other members of the same species.						teristics.
	<ul> <li>By the end of this unit the teacher should</li> <li>ensure students can obtain, evaluate, and communicate information to compare the similarities and differences in groups of organisms.</li> <li>animals: Guide students in constructing arguments, supported by evidence, for how animals can be grouped according to their features.</li> <li>plants: Assist students in constructing arguments, supported by evidence, for how plants can be grouped according to their features.</li> <li>offspring Observations: Encourage students to ask questions and make observations to identify the similarities and differences between offspring, their parents, and other members of the same species.</li> </ul>						
Lesson Plan guidance document and template	■ Copy of Department of Science CCPS Lesson Plan Guidance Document .pdf						
		GSE	Science and Engin	neering Practices	<u>C</u>	Crosscutting Concep	ts

Standards	SKL2. Obtain, evaluate, and communicate information to compare the similarities and differences in groups of organisms.  a. Construct an argument supported by evidence for how animals can be grouped according to their features.  b. Construct an argument supported by evidence for how plants can be grouped according to their features.  c. Ask questions and make observations to identify the similarities and differences of offspring to their parents and to other members of the same species	Asking questions Ask questions based on observations to find more information about the designed world.  Engaging in argument from evidence Construct an argument with evidence to support a claim.  Obtaining, evaluating, and communicating information Communicate solutions with others in oral and written forms using models and/or drawings that provide detail about scientific ideas.		Patterns Patterns in the natural world and human designed world can be observed and used as evidence.  Structure and Function The shape and stability of structures of natural and designed objects are related to their function/s				
NGSS Alignment	Alignment							
	Anchoring Phenomena	THE FIRE	enomenon Protocol Le	arning Targets				
	SKL2.a		The students will construct an argument supported by evidence for how animals can be grouped according to their features.					
	SKL2.b		The students will construct an argument supported by evidence for how plants can be grouped according to their features.					
SKL2.c				make observations to identify the similarities and parents, and other members of the same species.				
	Weekly Lesson Tasks							
	Week 1							
			ristics animals have. These features may in	ding to their features. Animal features are distinct nclude their covering type (e.g., feathers, scales, legs. Students will delve further into sorting				

		animals into more specific categories in later grades.			
<b>Learning Target</b> The students will construct an argum		ment supported by evidence for how animals can be grouped according to their features.			
Lab Safety Protocol and Materials	<b>■</b> General Safety Practices for the	he Elementary Science Classroo	m- TOC.docx		
Phenomenon: Sorting Animals at the Zoo			<b>DQ:</b> In what ways could you sort these on similar physical features?	e animals to create groups based	
Day 1: Opening	Day 2 : Guided Practice/ Transition	Day 3: Independent Practice	Day 4: Independent Practice	Day 5: Assessment / Summary	
Show students the phenomenon card: Sorting Animals at the Zoo  After introducing the phenomenon, show the students the following image.  Use the see, think wonder strategy to guide student thinking.  Teachers should provide students opportunities to share observations and develop questions. The teacher should record students' observations on chart paper and refer back to initial student ideas throughout the week.  Inquiry Activity (10-15 minutes)  SEP Teacher Tip:  To support students with the	Introduce the Driving Question: (7-10 minutes)  Have students review the driving question:  In what ways could you sort these animals to create groups based on similar physical features??  Use the strategy to support students with making connections and understanding the driving question (DQ).  Visualizing the Driving Question  Click here to access question words reference chart  The process can be recorded on chart paper with the students or the teacher can complete the graphic organizer.  Be sure to create a reference for students to have throughout the week.  **TEACHER NOTE: Students should not answer the driving	Graphic Organizer Students will need and will use the student lab sheet for "Animal Role-Playing and Sorting Activity" provided in their consumable book or the access to the student handout for "Animal Role-Playing and Sorting Activity"  Investigation Facilitation (30-35 minutes)  SEP Teacher Tip:  To support students with the science and engineering practices for this week, follow the guidance in this protocol:  Developing model construction questions  Provide constructive feedback for building a model  Student back pocket questions  Animal Role-Playing and Sorting Activity  Materials: student journal, animal cards,	Text Annotation Strategy (30-45 minutes)  Have students read and annotate the following text: Animals  The text for this week's lesson can be found here.  View the following facilitation directions: The text is designed to be projected or copied onto chart paper for a shared and interactive reading experience.  The teacher should facilitate the following process. Have the students follow the text protocol facilitation directions provided in the following strategy:  K-2 Text Annotation Prot  Students should complete the following student handout as they work through the text annotation protocol:  K-2 Text Annotation Student	Assessment for Learning: (10-15 minutes)  Have students complete the following animals assessment.  Teacher Answer Key  **TEACHER NOTE: Assessments may be administered to the whole group or small group. Provide each student with a copy of the assessment. Display the assessment for students to track as the teacher reads each question. The teacher will read each question and the responses. Instruct the student to mark or circle the correct answer.	

practices for this week, follow the guidance in this protocol:

<u>Developing model construction</u> <u>questions</u>

Provide constructive feedback for building a model

# Student back pocket questions Organisms

### Objective:

In this activity, students sort animals according to their observable parts.

#### **Procedures:**

Today, we will be singing a song!"

Ask: "Do you have body parts?" "Yes."

"What are they?" I have a head, eyes, ears, nose, mouth, arms, legs, etc."

Instruct students to stand arm's length apart in all directions. Have students point to their various body parts. Sing "Head, Shoulders, Knees, and Toes," pointing to each body part as you sing. Encourage students to make movements while singing the song. Announce: "Today we will sing 'Head, Shoulders, Knees, and Toes' in a new way. Do animals have body parts too?" "Yes!" Ask: "What are they?" "Animals have ears, noses, eyes, feet, tails, fins, etc." "Do all animals have the same parts?" "No. Some animals have different parts. A fish has fins, but a dog does not. A dog has fur, but a lizard does not."

Show a stuffed animal and ask:

question at this time. Students will need to collect information, data and understanding from the phenomenon strategy, inquiry activity, investigation, text or video protocol and vocabulary strategy to develop a response in the claim-evidence-reasoning format.

### Claim-Evidence-Reasoning (CER)

**Objective:** Expose students to claim-evidence-reasoning (CER) student samples below to review and understand their peers' thoughts on the topic, initiating the process of developing skills for effective argumentation.

The teacher should state the following to students:

"Claim-Evidence-Reasoning or CER is a way of writing that helps students understand and explain what they learn in science investigations and science ideas."

Review the <u>claim-evidence-reasoning poster</u> with students.

As a class or in student groups, provide students with this week's claim- evidence-reasoning sample.

### Organisms week 1 work samples

The teacher or students should read over student sample(s) to analyze claim-evidence-reasoning protocol. Ask students to use the CER observations chart to complete the following analysis protocol:

1 animal card per student), single-hole punch, scissors, yarn (1 per student)

#### Procedures:

Give each student an animal card to wear around their neck. Inform students that they will role-play and sort themselves based on their animal's characteristics. Explain that you will call out a specific animal characteristic (e.g., "animals with tails" or "animals with wings"). Students whose animals have the trait will move to one side of the classroom.

Students whose animals do not have the trait will move to the other side.

### \*\*TEACHER NOTE:

Start with easily recognized characteristics and gradually use more difficult ones. Include at least one characteristic that every student shares (e.g., "an animal with a head" or "an animal with feet"). Body covering (e.g., feathers, fur, fins)

- Number of legs (e.g., four, stands on two legs)
- Tail
- Color
- Size

trait.

- Body type (e.g., long, flexible body) Give students the chance to explain and defend whether

their animal has the called-out

Document (editable)

■ K-2 Text Annotation Stu...

During the teacher-led discussion, the teacher should ask the following questions:

What is your favorite animal?
What makes that animal special
for you?
What type of body covering
does your favorite animal have?

\*\*TEACHER NOTE: Read and review the annotation protocol prior to providing this lesson to students. Students will need to be placed in groups or have an understanding of how the groups will change to limit time used for transitioning.

### Vocabulary Words

similarities, differences

# Vocabulary Strategy: (10-15 minutes)

#### Four Square

Provide students with the graphic organizer (editable) or pdf handout, explaining its four sections: word, meaning, picture, and sentence.

Use a Think Aloud to demonstrate how to use the graphic organizer with one of the provided vocabulary words.

Allow students to work in collaborative groups. Actively monitor and facilitate small group discussions and review various artifacts (pictures, images, primary sources, charts) to build knowledge of the term.

# "What body parts does the stuffed animal have?"

"It has eyes, ears, mouth, fur, tail, feet, etc."

Sing the song with animal parts: "Head, Shoulders, Fur, and Tail." Encourage students to pretend they have fur and tails. Ask: "Can 'Eyes, Ears, Mouth, and Nose' be sung with this one too?" Then, sing the song. Students should rub their fur and point to their tails while singing.

Lead with a question: "What are some ways that animals can be sorted into groups?" Example: "A group of animals that have fins." Guide them: "We could sort animals by what kind of body parts they have. We could make a group of animals that have tails, or we could make groups based on other features."

#### \*\*TEACHER NOTE:

**Materials**: 1 Stuffed animal, large, with fur and tail, or photo of one

<u>Claim-Evidence-Reasoning</u> <u>Record Observations Document</u> (google doc)

- Claim-Evidence-Reasonin... (PDF)
- 1. Identify the student's claim in the sample and have the teacher or students write their observations or questions.
- 2. Identify the student's evidence in the sample and have the teacher or students write their observations or questions.
- 3. Identify the student's reasoning in the sample and have the teacher or students write their observations or questions.

Ask the following questions to students as they analyze the student samples:

- Claim-Evidence-Reasonin...
- \*\*TEACHER NOTE: As students review the student samples, they will begin to see or read vocabulary. Begin or continue a reference chart of questions or observations about vocabulary. Students will explicitly learn vocabulary on Day 4.

Have students collaborate to complete the four square strategy for the other vocabulary terms.

Monitor student progress, sharing new ideas for class discussion, and help students distinguish essential from non-essential characteristics.

Allow groups to share their thinking through academic dialogue and compare their completed task with members of other groups.

#### Week 2

GSE:SKL2a

**Focused Concept:** Animals can be grouped according to their features. Animal features are distinct characteristics animals have. These features may include their covering type (e.g., feathers, scales,

		fur), size, shape, color, movement, and number of legs. Students will delve further into sorting animals into more specific categories in later grades.			
Learning Target	The students will construct an arg	nument supported by evidence for h	ow animals can be grouped accordi	ng to their features.	
Lab Safety Protocol and Materials	<b> ■</b> General Safety Practices for	the Elementary Science Classroo	om- TOC.docx		
Phenomenon: Sorting Animals at the Zoo			<b>DQ:</b> In what ways could you sort these animals to create groups based on similar physical features?		
Day 1: Opening	Day 2 : Guided Practice/ Transition	Day 3: Independent Practice	Day 4: Independent Practice	Day 5: Assessment / Summary	
Phenomenon Introduction (5-7 minutes)	Introduce the Driving Question: (7-10 minutes)	Graphic Organizer (2-3 minutes for students to access)	Text Annotation Strategy (30-45 minutes)	Claim-Evidence-Reasoning (15-25 minutes)	
Show students the phenomenon card: Sorting Animals at the Zoo	Have students review the driving question:	Students will need and will use the student lab sheet for "How do I sort animals by their	Have students read and annotate the following text: <u>Desert or Rainforest</u>	Students will write a response to the following driving question in the CER format.	
After introducing the phenomenon, show the students the following image.	In what ways could you sort these animals to create groups based on similar physical features?	features?" provided in their consumable book or the access to the student handout for "How do I sort animals by their features?"	The text for this week's lesson can be found here.	In what ways could you sort these animals to create groups based on similar physical features?	
Use the see, think wonder strategy to guide student thinking.  Teachers should provide	Use the strategy to support students with making connections and understanding the driving question (DQ).	Objective: Students will sort images of animals according to their physical	View the following facilitation directions: The text is designed to be projected or copied onto chart paper for a shared and interactive reading	Review the claim-evidence-reasoning poster with the students	
students opportunities to share observations and develop questions. The teacher should record students' observations on chart paper and refer back to	Visualizing the Driving Question  Click here to access question	features.  Materials: images of animals	The teacher should facilitate the following process. Have the students follow the text protocol	**TEACHER NOTE: Provide students with sentence starters by sharing on the board:  • K-2 Claim-Evidence-Rea	
initial student ideas throughout the week.	words reference chart  The process can be recorded on	Investigation Facilitation (30-35 minutes)	facilitation directions provided in the following strategy:	Have students write their claim-evidence-reasoning	
Inquiry Activity (10-15 minutes)	chart paper with the students or the teacher can complete the graphic organizer.	SEP Teacher Tip:  To support students with the science and engineering	■ K-2 Text Annotation Prot  Students should complete the following student handout as	writing a claim Have students develop a claim which is their answer to the driving question. Students	
<b>SEP Teacher Tip:</b> To support students with the	Be sure to create a reference for students to have throughout the week.	practices for this week, follow the guidance in this protocol:	they work through the text annotation protocol:	should use all their knowledge from the phenomenon, inquiry activity, investigation, and	
science and engineering		Developing model construction	K-2 Text Annotation Student	information analysis protocol to	

practices for this week, follow the guidance in this protocol:

<u>Developing model construction</u> <u>questions</u>

Provide constructive feedback for building a model

Student back pocket questions
Science4Us
Animals Module: Engage

**Objective:** Students activate prior knowledge about animals.

Procedure: Students are guided by their host, Gilda, through four distinct parts: Drawing Favorite Animals: Students draw their favorite animal and label its parts in their Notebook. They save their drawings by clicking the "save" button or select "skip" if needed. Viewing Animal Postcards: Gilda shares postcards from her friends showing various animals in their habitats. Connecting Similar Animals: Students draw lines to connect animals that look alike in their Notebook. They save their drawings by clicking the "save" button or select "skip" if needed.

### \*\*TEACHER NOTE:

A group discussion, ideally led by the teacher, using provided questions and hints to guide the conversation. Alternatively, students can engage in this discussion individually as an internal dialogue. \*\*TEACHER NOTE: Students should not answer the driving question at this time. Students will need to collect information, data and understanding from the phenomenon strategy, inquiry activity, investigation, text or video protocol and vocabulary strategy to develop a response in the claim-evidence-reasoning format.

# Claim-Evidence-Reasoning (CER) (10-12 minutes)

Objective: Expose students to claim-evidence-reasoning (CER) student samples below to review and understand their peers' thoughts on the topic, initiating the process of developing skills for effective argumentation.

The teacher should state the following to students:

"Claim-Evidence-Reasoning or CER is a way of writing that helps students understand and explain what they learn in science investigations and science ideas."

Review the <u>claim-evidence-reasoning poster</u> with students.

As a class or in student groups, provide students with this week's claim-evidence-reasoning sample.

Organisms week 2 work samples

### questions

Provide constructive feedback for building a model

Student back pocket questions How do I sort animals by their features?"

**Procedure:**Look at the pictures. What features do the animals have? Sort the animals into groups. How did you sort the animals? Why?

### \*\*TEACHER NOTE:

If your students need more direction on this lab, use the following procedure.

- 1. As you look at the pictures, think about these questions:
- a. What color is it?
- b. How many legs does it have?
- c. What is its body covered with?
- d. Does it have a tail?
- e. Does it walk or swim or fly?
- 2. What else would you like to know about these animals to sort them better?
- 3. Look at your two groups of animals. What other animals can you think of that could be added to each group?

### Document (editable)

■ K-2 Text Annotation Stu...

During the teacher-led discussion, the teacher should ask the following questions: What is a desert? What is a rainforest? How are deserts and rainforests similar? How are deserts and rainforests different?

\*\*TEACHER NOTE: Read and review the annotation protocol prior to providing this lesson to students. Students will need to be placed in groups or have an understanding of how the groups will change to limit time used for transitioning.

### Vocabulary Words

groups, organisms

# Vocabulary Strategy: (10-15 minutes)

### Four Square

Provide students with the graphic organizer (editable) or pdf handout, explaining its four sections: word, meaning, picture, and sentence.

Use a Think Aloud to demonstrate how to use the graphic organizer with one of the provided vocabulary words.

Allow students to work in collaborative groups. Actively monitor and facilitate small group discussions and review various artifacts (pictures, images, primary sources, charts) develop an answer to the question.

### writing evidence

Students should provide observational or numerical data as their evidence from their investigation and write a short caption or brief description of the data they provide to support their claim.

### writing the reasoning

Students will use textual evidence from the "text annotation graphic organizer" to generate the reasoning or justification in the CER format.

Have students use the following template to write their claim-evidence-reasoning (CER)

K-2 Student Writing Template (editable)

K-2 Student Writing Template (pdf)

\*\*TEACHER NOTE: Have students review the student sample(s) of claim-evidence-reasoning on Day 2. Have students compare their writing to those students' samples. Ask the following questions:

How are your thoughts or understanding similar to another writer on the topic? How are your thoughts or understanding different to another writer on the topic? What would you like to learn more about? Why?

Asking students to draw their favorite animal and label the parts they know?

Ask students to draw a line to connect animals that look alike? Think about why you thought those animals were similar. Hint: What did they have in common, or what was the same about them?

Think about the animals in the postcards. What was different about where they lived? Hint: Think about what would happen if the monkey and the octopus traded homes?

The teacher or students should read over student sample(s) to analyze claim-evidence-reasoning protocol. Ask students to use the CER observations chart to complete the following analysis protocol:

Claim-Evidence-Reasoning
Record Observations Document
(google doc)

- Claim-Evidence-Reasoni... (PDF)
- 1. Identify the student's claim in the sample and have the teacher or students write their observations or questions.
- 2. Identify the student's evidence in the sample and have the teacher or students write their observations or questions.
- 3. Identify the student's reasoning in the sample and have the teacher or students write their observations or questions.

Ask the following questions to students as they analyze the student samples:

- Claim-Evidence-Reasoni...
- \*\*TEACHER NOTE: As students review the student samples, they will begin to see or read vocabulary. Begin or continue a reference chart of questions or observations about vocabulary. Students will explicitly learn vocabulary on Day 4.

to build knowledge of the term.

Have students collaborate to complete the four square strategy for the other vocabulary terms.

Monitor student progress, sharing new ideas for class discussion, and help students distinguish essential from non-essential characteristics.

Allow groups to share their thinking through academic dialogue and compare their completed task with members of other groups.

		Week 3			
GSE:SKL2b		characteristics plants have. These	<b>Focused Concept:</b> Plants can be grouped according to their features. Plant features are distinct characteristics plants have. These features may include their height, size, shape, color, and texture. Plant parts will be taught in later grades.		
Learning Target	The students will construct an arg	gument supported by evidence for ho	ow plants can be grouped according	to their features.	
Lab Safety Protocol and Materials	<b> ☐</b> General Safety Practices for	the Elementary Science Classroo	om-TOC.docx		
Phenomenon: <u>Garden Tour</u>			DQ: In what ways could you sort these based on similar physical features		
Day 1: Opening	Day 2 : Guided Practice/ Transition	Day 3: Independent Practice	Day 4: Independent Practice	Day 5: Assessment / Summary	
Phenomenon Introduction (5-7 minutes)	Introduce the Driving Question: (7-10 minutes)	Graphic Organizer (2-3 minutes for students to	Text Annotation Strategy (30-45 minutes)	Assessment for Learning: (10-15 minutes)	
Show students the phenomenon card: Garden Tour  After introducing the phenomenon, show the students the following video.  Use the see, think wonder strategy to guide student thinking.  Teachers should provide students opportunities to share observations and develop questions. The teacher should record students' observations on chart paper and refer back to initial student ideas throughout the week.  Inquiry Activity	Have students review the driving question:  In what ways could you sort these plants to create groups based on similar physical features?  Use the strategy to support students with making connections and understanding the driving question (DQ).  Visualizing the Driving Question  Click here to access question words reference chart  The process can be recorded on chart paper with the students or	Students will need and will use the student lab sheet for "How do I sort plants by their features?" provided in their consumable book or the access to the student handout for "How do I sort plants by their features?"  Objective: Students will sort images of plants according to their features.  Materials: images of plants  Investigation Facilitation (20-25 minutes)  SEP Teacher Tip:	Have students read and annotate the following text:  Literacy-Based Science Task: Grouping Organisms  The text for this week's lesson can be found at GaDOE Reading Activity: Understanding Leaf Features  Tell students you will read together about leaves and their features. As you read, they can look for explanations for the lines seen in their leaf rubbings.  View the following facilitation directions: The text is designed to be projected or copied onto chart paper for a shared and interactive reading experience.	Have students complete the following plant assessment.  Teacher Answer Key  **TEACHER NOTE: Assessments may be administered to the whole group or small group. Provide each student with a copy of the assessment. Display the assessment for students to track as the teacher reads each question. The teacher will read each question and the responses. Instruct the student to mark or circle the correct answer.	

### (10-15 minutes)

### **SEP Teacher Tip:**

To support students with the science and engineering practices for this week, follow the guidance in this protocol:

<u>Developing model construction</u> <u>questions</u>

Provide constructive feedback for building a model

Student back pocket questions
Leaf Scavenger Hunt

**Objective:** Construct an argument supported by evidence for how plants can be grouped according to their features.

Materials: Leaves from scavenger hunt

Procedure: Provide each student with a paper lunch sack and guide them outside to collect leaves, including grass, pine needles, and leaves from small plants. Encourage students to crush and smell the leaves.

### \*\*TEACHER NOTE:

Safety Note: Ensure the scavenger hunt route is safe, avoiding plants like poison ivy. Follow district safety policies.If possible, use herbs from a school garden. Return inside, wash hands, and ensure each student has 6-8 leaves. Bring in extra leaves if needed.

the teacher can complete the graphic organizer.

Be sure to create a reference for students to have throughout the week.

\*\*TEACHER NOTE: Students should not answer the driving question at this time. Students will need to collect information, data and understanding from the phenomenon strategy, inquiry activity, investigation, text or video protocol and vocabulary strategy to develop a response in the claim-evidence-reasoning format.

# Claim-Evidence-Reasoning (CER) (10-12 minutes)

Objective: Expose students to claim-evidence-reasoning (CER) student samples below to review and understand their peers' thoughts on the topic, initiating the process of developing skills for effective argumentation.

The teacher should state the following to students:

"Claim-Evidence-Reasoning or CER is a way of writing that helps students understand and explain what they learn in science investigations and science ideas."

Review the <u>claim-evidence-reasoning poster</u> with students.

As a class or in student groups,

To support students with the science and engineering practices for this week, follow the guidance in this protocol:

<u>Developing model construction</u> <u>questions</u>

<u>Provide constructive feedback</u> for building a model

Student back pocket questions How do I sort plants by their features?

**Procedure:** Look at the pictures. What features do the plants have? Sort the pictures of plants into groups. How did you sort the plants? Why?

### \*\*TEACHER NOTE:

If your students need more direction on this lab, use the following procedure.
As you look at the pictures, think about these questions:

- 1. What shape is it?
- 2. Is it tall or short?
- 3. Does it have flowers?
- 4. Does it have one main trunk or several smaller trunks or stems?
- 5. Where is it growing?
- 6. What else would you like to know about these plants to sort them better?
- 7. Look at your two groups of plants. What other plants can you think of that could be added to each group?

The teacher should facilitate the following process. Have the students follow the text protocol facilitation directions provided in the following strategy:

■ K-2 Text Annotation Prot...

Students should complete the following student handout as they work through the text annotation protocol:

### K-2 Text Annotation Student Document (editable)

■ K-2 Text Annotation Stu...

During the teacher-led discussion, the teacher should ask the following questions:

Read the text once, pausing to discuss similar leaves found and the role of leaf veins.

Point out the author's claims about leaves. For example, on page 2, the author mentions wide pointy and straight, thin leaves, supported by pictures. Ask students to identify examples of different leaf types based on the provided images.

On page 3, ask which pictures represent fuzzy, smooth, pointy, and spiky leaves.

On page 5, discuss the types of veins mentioned by the author: straight, branched, or messy.

\*\*TEACHER NOTE: Read and review the annotation protocol prior to providing this lesson to students. Students will need to

Optionally, bring in leaves with unique features like magnolia or holly leaves. If a scavenger hunt is not possible then consider bringing in all the leaves for the next activities and allowing students to examine them. Then students can choose their favorites from the leaves that are brought in.

What kind of leaves did you find outside?

Can you show me the biggest leaf you collected? How do the leaves feel when you touch them? What colors are the leaves you collected? provide students with this week's claimevidence-reasoning sample.

### Organisms week 3 work samples

The teacher or students should read over student sample(s) to analyze claim-evidence-reasoning protocol. Ask students to use the CER observations chart to complete the following analysis protocol:

<u>Claim-Evidence-Reasoning</u> <u>Record Observations Document</u> (google doc)

- Claim-Evidence-Reasoni... (PDF)
- 1. Identify the student's claim in the sample and have the teacher or students write their observations or questions.
- 2. Identify the student's evidence in the sample and have the teacher or students write their observations or questions.
- 3. Identify the student's reasoning in the sample and have the teacher or students write their observations or questions.

Ask the following questions to students as they analyze the student samples:

- Claim-Evidence-Reasoni...
- \*\*TEACHER NOTE: As students review the student samples, they will begin to see or read vocabulary. Begin or

be placed in groups or have an understanding of how the groups will change to limit time used for transitioning.

### Vocabulary Words plants, features

### Vocabulary Strategy: (10-15 minutes)

### Four Square

Provide students with the graphic organizer (editable) or pdf handout, explaining its four sections: word, meaning, picture, and sentence.

Use a Think Aloud to demonstrate how to use the graphic organizer with one of the provided vocabulary words.

Allow students to work in collaborative groups. Actively monitor and facilitate small group discussions and review various artifacts (pictures, images, primary sources, charts) to build knowledge of the term.

Have students collaborate to complete the four square strategy for the other vocabulary terms.

Monitor student progress, sharing new ideas for class discussion, and help students distinguish essential from non-essential characteristics.

Allow groups to share their thinking through academic dialogue and compare their completed task with members of other groups. height, size, shape, color, and

continue a reference chart of questions or observations about vocabulary. Students will explicitly learn vocabulary on Day 4.		texture	
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	Week 4							
GSE:SKL2b			grouped according to their features features may include their height, sgrades.					
Learning Target	The students will construct an arg	sument supported by evidence for he	ow plants can be grouped according	g to their features.				
Lab Safety Protocol and Materials	<b>™</b> General Safety Practices for	the Elementary Science Classroo	om- TOC.docx					
Phenomenon: Garden Tour			DQ: In what ways could you sort these plants to create groups based on similar physical features?					
Day 1: Opening	Day 2 : Guided Practice/ Transition	Day 3: Independent Practice	Day 4: Independent Practice	Day 5: Assessment / Summary				
Phenomenon Introduction (5-7 minutes)	Introduce the Driving Question: (7-10 minutes)	Graphic Organizer (2-3 minutes for students to access)	Text Annotation Strategy (30-45 minutes)	Claim-Evidence-Reasoning (15-25 minutes)				
Show students the phenomenon card : Garden Tour	Have students review the driving question:	Students will need and will use the student lab sheet for "Leaf Sort" handout." access to the	Have students read and annotate the following text:  Emma's Greenhouse Trip	Students will write a response to the following driving question in the CER format.				
After introducing the phenomenon, show the students the following <u>video</u> .	In what ways could you sort these plants to create groups based on similar physical	handout for <u>"Leaf Sort"</u> handout. <b>Objective:</b> Students will	The text for this week's lesson can be found <u>here</u> .	In what ways could you sort these plants to create groups based on similar physical				
Use the see, think wonder strategy to guide student	features?	construct a simple argument with evidence.	View the following facilitation directions: The text	features?  Review the				
thinking.  Teachers should provide students opportunities to share	Use the strategy to support students with making connections and understanding the driving question (DQ).	Materials leaves "Leaf Sort" handout	is designed to be projected or copied onto chart paper for a shared and interactive reading experience. More advanced	claim-evidence-reasoning poster with the students				
observations and develop questions. The teacher should	Visualizing the Driving	pencils large plastic craft needles	students may benefit from following along on a paper					

record students' observations on chart paper and refer back to initial student ideas throughout the week.

# Inquiry Activity (10-15 minutes)

### **SEP Teacher Tip:**

To support students with the science and engineering practices for this week, follow the guidance in this protocol:

<u>Developing model construction</u> questions

Provide constructive feedback for building a model

Student back pocket questions
Sort Leaves

**Objective:** Students will construct a simple argument with evidence.

**Materials:** 8-10 leaves per group

**Procedure:** Pair up students. Provide each pair with 8-10 leaves.

Discuss and choose sorting features (e.g., shape, size, color). Have pairs sort the leaves into piles according to the chosen feature. Each pair explains their sorting criteria and results to the class.

### \*\*TEACHER NOTE:

Use previously collected leaves or ensure students have the opportunity to gather leaves at

### Question

Click here to access <u>question</u> words reference chart

The process can be recorded on chart paper with the students or the teacher can complete the graphic organizer.

Be sure to create a reference for students to have throughout the week.

\*\*TEACHER NOTE: Students should not answer the driving question at this time. Students will need to collect information, data and understanding from the phenomenon strategy, inquiry activity, investigation, text or video protocol and vocabulary strategy to develop a response in the claim-evidence-reasoning format.

# Claim-Evidence-Reasoning (CER) (10-12 minutes)

Objective: Expose students to claim-evidence-reasoning (CER) student samples below to review and understand their peers' thoughts on the topic, initiating the process of developing skills for effective argumentation.

The teacher should state the following to students:

"Claim-Evidence-Reasoning or CER is a way of writing that helps students understand and explain what they learn in science investigations and string made from jute or other highly-textured string

# Investigation Facilitation (30-35 minutes)

### **SEP Teacher Tip:**

To support students with the science and engineering practices for this week, follow the guidance in this protocol:

<u>Developing model construction</u> questions

Provide constructive feedback for building a model

Student back pocket questions What Do My Garlands Show?

**Procedure**: Give each pair a copy of the <u>"Leaf Sort"</u> handout.

Help partners complete the sentence, "Leaves can be sorted by \_\_\_\_" with their chosen feature (e.g., size, shape, vein pattern, color).

Assist them in filling out, "These leaves are \_\_\_\_" (e.g., small, large, pointy, smooth).

Tape their leaf garlands at the bottom of the page to show their evidence.

### \*\*TEACHER NOTE:

Use the leaves collected on Monday or ensure students have the opportunity to gather leaves at school or home. Leaf Garlands- Distribute a

Leaf Garlands- Distribute a large craft needle and 18 inches of jute string to each student. Assist them in tying a double

copy.

View the following facilitation directions: The text is designed to be projected or copied onto chart paper for a shared and interactive reading experience.

The teacher should facilitate the following process. Have the students follow the text protocol facilitation directions provided in the following strategy:

■ K-2 Text Annotation Prot...

Students should complete the following student handout as they work through the text annotation protocol:

K-2 Text Annotation Student Document (editable)

■ K-2 Text Annotation Stu...

During the teacher-led discussion, the teacher should ask the following questions:

How were the rose and the hot pink flowering plant different? The smell, thorns, leaves How is an apple tree different from the other plants? It has a trunk.

What is a greenhouse? It is a place to buy plants.
Where does this story mainly take place? In a greenhouse

\*\*TEACHER NOTE: Read and review the annotation protocol prior to providing this lesson to students. Students will need to be placed in groups or have an understanding of how the groups will change to limit time

\*\*TEACHER NOTE: Provide students with sentence starters by sharing on the board:

■ K-2 Claim-Evidence-Rea...

Have students write their claim-evidence-reasoning

### writing a claim

Have students develop a claim which is their answer to the driving question. Students should use all their knowledge from the phenomenon, inquiry activity, investigation, and information analysis protocol to develop an answer to the question.

### writing evidence

Students should provide observational or numerical data as their evidence from their investigation and write a short caption or brief description of the data they provide to support their claim.

#### writing the reasoning

Students will use textual evidence from the "text annotation graphic organizer" to generate the reasoning or justification in the CER format.

Have students use the following template to write their claim-evidence-reasoning (CER)

K-2 Student Writing Template (editable)
K-2 Student Writing Template (pdf)

\*\*TEACHER NOTE: Have students review the student

school or home. Students will collaboratively sort 8-10 leaves into two or three groups based on specific features such as shape, size, or color, and explain the reasoning behind their sorting criteria.

Can you sort your leaves by color? How many colors do you have?

Can you sort your leaves by size? Which pile has the most leaves?

Can you find leaves that are the same shape and put them together?

Can you group the leaves by how they feel (smooth, rough, etc.)?

science ideas."

Review the <u>claim-evidence-reasoning poster</u> with students.

As a class or in student groups, provide students with this week's claim-evidence-reasoning sample.

# Organisms week 4 work samples

The teacher or students should read over student sample(s) to analyze claim-evidence-reasoning protocol. Ask students to use the CER observations chart to complete the following analysis protocol:

Claim-Evidence-Reasoning
Record Observations Document
(google doc)

- Claim-Evidence-Reasoni... (PDF)
- 1. Identify the student's claim in the sample and have the teacher or students write their observations or questions.
- 2. Identify the student's evidence in the sample and have the teacher or students write their observations or questions.
- 3. Identify the student's reasoning in the sample and have the teacher or students write their observations or questions.

Ask the following questions to students as they analyze the student samples:

knot at one end of the string and threading the other end through the needle. They will push the needle through each leaf in one of their groups, spacing them out to create a garland. Their partner will do the same with the second group of leaves.

used for transitioning.

### Vocabulary Words species, features

# Vocabulary Strategy: (10-15 minutes)

#### Four Square

Provide students with the graphic organizer (editable) or pdf handout, explaining its four sections: word, meaning, picture, and sentence.

Use a Think Aloud to demonstrate how to use the graphic organizer with one of the provided vocabulary words.

Allow students to work in collaborative groups. Actively monitor and facilitate small group discussions and review various artifacts (pictures, images, primary sources, charts) to build knowledge of the term.

Have students collaborate to complete the four square strategy for the other vocabulary terms.

Monitor student progress, sharing new ideas for class discussion, and help students distinguish essential from non-essential characteristics.

Allow groups to share their thinking through academic dialogue and compare their completed task with members of other groups.

sample(s) of claim-evidence-reasoning on Day 2. Have students compare their writing to those students' samples. Ask the following questions:

How are your thoughts or understanding similar to another writer on the topic? How are your thoughts or understanding different to another writer on the topic? What would you like to learn more about? Why?

**TEACHI students rev samples, the or read voca continue a r questions or vocabulary.	ER NOTE: As riew the student by will begin to see abulary. Begin or eference chart of robservations about Students will arn vocabulary on	
Day 4.		

	Week 5						
GSE:SKL2c			very similar to, but not exactly like offspring is the young of an organi				
Learning Target	Learning Target  The students will ask questions and make observations to identify the similarities and differences between offspring, their parents, an other members of the same species						
Lab Safety Protocol and Materials	<b>™</b> General Safety Practices for	the Elementary Science Classroo	m- TOC.docx				
Phenomenon: Follow the Mama			<b>DQ:</b> What are some similarities and differences among the parents and offspring?				
Day 1: Opening	Day 2 : Guided Practice/ Transition	Day 3: Independent Practice	Day 4: Independent Practice	Day 5: Assessment / Summary			
Phenomenon Introduction (5-7 minutes)  Show students the phenomenon	Introduce the Driving Question: (7-10 minutes)	Graphic Organizer (2-3 minutes for students to access) Students will need and will use	Text Annotation Strategy (30-45 minutes)  Have students read and	Claim-Evidence-Reasoning (15-25 minutes) Students will write a response to			
card : Follow the Mama  After introducing the	Have students review the driving question:	the student lab sheet for "What do young plants look like?" provided in their consumable	annotate the following text:  The Farm	the following driving question in the CER format.			
phenomenon, show the students the following <u>video</u> .	What are some similarities and differences among	book or the access to the student handout for "What do young	The text for this week's lesson can be found <u>here</u> .	What are some similarities and differences among			

Use the <u>see, think wonder</u> <u>strategy</u> to guide student thinking.

Teachers should provide students opportunities to share observations and develop questions. The teacher should record students' observations on chart paper and refer back to initial student ideas throughout the week.

# **Inquiry Activity** (10-15 minutes)

### **SEP Teacher Tip:**

To support students with the science and engineering practices for this week, follow the guidance in this protocol:

<u>Developing model construction</u> <u>questions</u>

Provide constructive feedback for building a model

Student back pocket questions Headband Activity

**Objective:** Students will identify and compare young and adult plants or animals.

Materials: Set of <u>Picture Cards</u>: Who Is My Parent, 1 Sentence strip/paper clip (per student)

**Procedure:** Distribute one headband to each student. Have them study the <u>picture</u> on their headband before putting it on.

the parents and offspring?

Use the strategy to support students with making connections and understanding the driving question (DQ).

Visualizing the Driving Question

Click here to access <u>question</u> words reference chart

The process can be recorded on chart paper with the students or the teacher can complete the graphic organizer.

Be sure to create a reference for students to have throughout the week.

\*\*TEACHER NOTE: Students should not answer the driving question at this time. Students will need to collect information, data and understanding from the phenomenon strategy, inquiry activity, investigation, text or video protocol and vocabulary strategy to develop a response in the claim-evidence-reasoning format.

# Claim-Evidence-Reasoning (CER) (10-12 minutes)

Objective: Expose students to claim-evidence-reasoning (CER) student samples below to review and understand their peers' thoughts on the topic, initiating the process of developing skills for effective argumentation.

plants look like?"

Materials: paper, crayon, <u>lab</u> placemat

**Investigation Facilitation** (30-35 minutes)

### **SEP Teacher Tip:**

To support students with the science and engineering practices for this week, follow the guidance in this protocol:

<u>Developing model construction</u> <u>questions</u>

Provide constructive feedback for building a model

Student back pocket questions uInvestigation lab

What do young plants look like?

**Objective:** Students will observe a parent plant and make inferences about the young plant looks like

**Procedure:** Students will need to work in partner pairs. The teacher should assign partners prior to the beginning of the lesson.

There are additional guided inquiry steps that the teacher may follow to support students in this lab.

\*\*TEACHER NOTE: In this lab, students observe the photo if an adult and then, bases on

The teacher should facilitate the following process. Have the students follow the text protocol facilitation directions provided in the following strategy:

■ K-2 Text Annotation Prot...

Students should complete the following student handout as they work through the text annotation protocol:

K-2 Text Annotation Student Document (editable)

■ K-2 Text Annotation Stu...

During the teacher-led discussion, the teacher should ask the following questions:

Where does the story take place? The farm How does a baby duckling change? Its feathers change color.

What can the reader tell about springtime on the farm? The farm is busy.

\*\*TEACHER NOTE: Read and review the annotation protocol prior to providing this lesson to students. Students will need to be placed in groups or have an understanding of how the groups will change to limit time used for transitioning.

Vocabulary Words offspring, parent

Vocabulary Strategy: (10-15 minutes)

the parents and offspring?

Review the <u>claim-evidence-reasoning poster</u> with the students

\*\*TEACHER NOTE: Provide students with sentence starters by sharing on the board:

■ K-2 Claim-Evidence-Rea...

Have students write their claim-evidence-reasoning

### writing a claim

Have students develop a claim which is their answer to the driving question. Students should use all their knowledge from the phenomenon, inquiry activity, investigation, and information analysis protocol to develop an answer to the question.

### writing evidence

Students should provide observational or numerical data as their evidence from their investigation and write a short caption or brief description of the data they provide to support their claim.

### writing the reasoning

Students will use textual evidence from the "text annotation graphic organizer" to generate the reasoning or justification in the CER format. Have students use the following template to write their claim-evidence-reasoning (CER)

K-2 Student Writing Template (editable)

Ask each student to decide if the picture shows a young or adult plant or animal. Have students find their matching partner (young or adult counterpart).

### \*\*TEACHER NOTE:

Partners discuss:

How are they alike? Different? Which one is the young (offspring)?

Which one is the adult? Redistribute headbands and repeat until all students have participated. Lead a discussion with these questions:

How did you find your partner? What plant parts did you use to help match?

Can the shape of a leaf help identify a plant's offspring? Can the color of a flower help find a plant's offspring? Do all offspring look like their parents?

The teacher should state the following to students:

"Claim-Evidence-Reasoning or CER is a way of writing that helps students understand and explain what they learn in science investigations and science ideas."

Review the <u>claim-evidence-reasoning poster</u> with students.

As a class or in student groups, provide students with this week's claim-evidence-reasoning sample.

The teacher will select samples of student work from weeks 1-4 for the class to analyze.

The teacher or students should read over student sample(s) to analyze claim-evidence-reasoning protocol. Ask students to use the CER observations chart to complete the following analysis protocol:

<u>Claim-Evidence-Reasoning</u> <u>Record Observations Document</u> (google doc)

- Claim-Evidence-Reasoni... (PDF)
- 1. Identify the student's claim in the sample and have the teacher or students write their observations or questions.
- 2. Identify the student's evidence in the sample and have the teacher or students write their observations or questions.

those careful observations, decide what a young plant might look like. If your students need more direction on this lab, use the following procedure.

- 1. Choose one of the parent plants.
- 2. Draw the plant on a piece of paper.
- 3. Look at the parent plant. Observe the size, shape, leaves, and color.
- 4. Think about what the young plant would look like. Draw it. Make sure students understand the basic difference between these two trees. The tree on the left has leaves and the tree on the right has needles.

Have students organize their thinking using the provided placemat sheet.

### Four Square

Provide students with the graphic organizer (editable) or pdf handout, explaining its four sections: word, meaning, picture, and sentence.

Use a Think Aloud to demonstrate how to use the graphic organizer with one of the provided vocabulary words.

Allow students to work in collaborative groups. Actively monitor and facilitate small group discussions and review various artifacts (pictures, images, primary sources, charts) to build knowledge of the term.

Have students collaborate to complete the four square strategy for the other vocabulary terms.

Monitor student progress, sharing new ideas for class discussion, and help students distinguish essential from non-essential characteristics.

Allow groups to share their thinking through academic dialogue and compare their completed task with members of other groups. K-2 Student Writing Template (pdf)

\*\*TEACHER NOTE: Have students review the student sample(s) of claim-evidence-reasoning on Day 2. Have students compare their writing to those students' samples. Ask the following questions:

How are your thoughts or understanding similar to another writer on the topic? How are your thoughts or understanding different to another writer on the topic? What would you like to learn more about? Why?

3. Identify the student's reasoning in the sample and have the teacher or students write their observations or questions. Ask the following questions to students as they analyze the student samples: ■ Claim-Evidence-Reasoni... \*\*TEACHER NOTE: As students review the student samples, they will begin to see or read vocabulary. Begin or continue a reference chart of questions or observations about vocabulary. Students will

### Assessment Prep

Prepare students for assessment by reviewing the following Assessment Prep Presentation.

explicitly learn vocabulary on

Provide the following guidance:

Ask the students to use what they know about the tasks completed to answer the provided assessment prep question.

- What is the question asking you?
- What do you know about the vocabulary or concept in the question?

Day 4.

- Is this question similar to any investigations or tasks we've completed?
- How can what you've done help you answer this question?
- Just view the assessment question: What is the question asking you?

Guide students to think about how their experience connects to the question.

Using the answer choices provided, ask the students the following:

- Identify a wrong answer: How do I know this answer is incorrect?
- Identify the right answer: How do we know this answer is correct?

Allow the students time to discuss in collaborative groups.

**TEACHER NOTE:** If students struggle with the question, review it the next day. Do not rush to the next question; instructional time is the only time they have to prepare for the end-of-year assessment.

		Labs / Investigations				
	Mandatory Labs	Explore Learning Gizmo	Mystery Science			
Animal Role-Playing and Sorting Activity How do I sort animals by their features How do I sort plants by their features Leaf Sort What do young plants look like?		Science 4 Us Plants Module Science 4 Us Animals Module	Animal Traits & Survival Plant Traits & Survival			
		Additional- Resources/Tasks				
Supplemental Labs	Organisms Animal Role-Playing and Sorting Activity Leaf Sort					
Culminating Performance Task	In what ways could you sort these animals to create groups based on similar physical features? CER task In what ways could you sort these plants to create groups based on similar physical features? CER task What are some similarities and differences among the parents and offspring? CER task					
STEM Activities	uDemonstrate- How do living things change as they grow?					