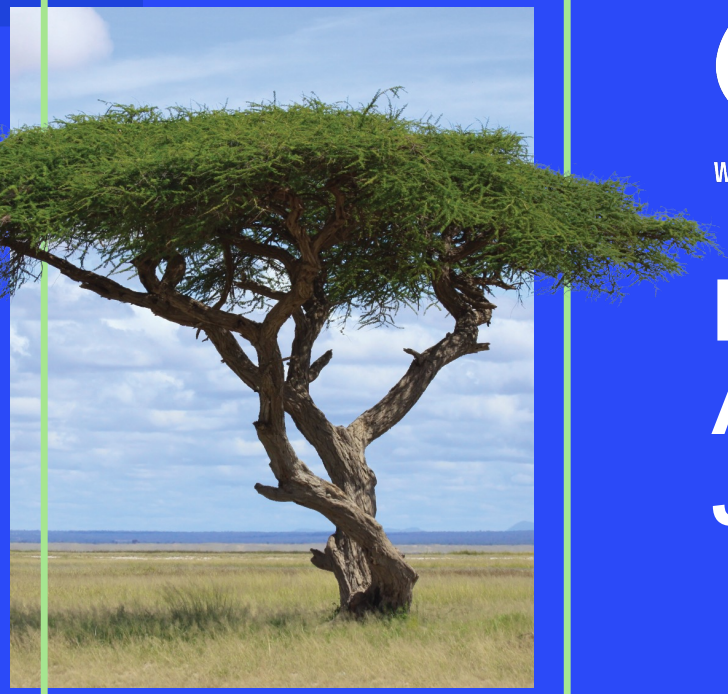
CAROLINA
UNLEASH LEARNING™



SCIX™
Where curiosity leads, learning follows.™

Making Sense of an Acacia Tree: A Curiosity-Driven Learning Journey (K–5)

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PERFORMANCE EXPECTATIONS

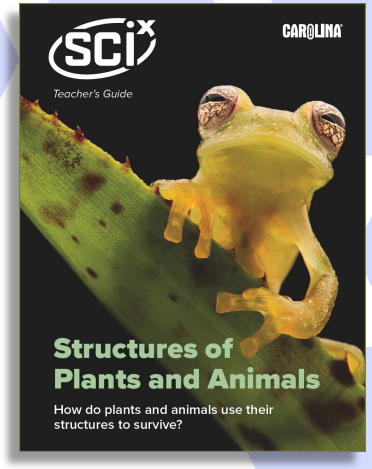
Lesson-Level Performance Expectations (Three-Dimensional Learning Objectives)

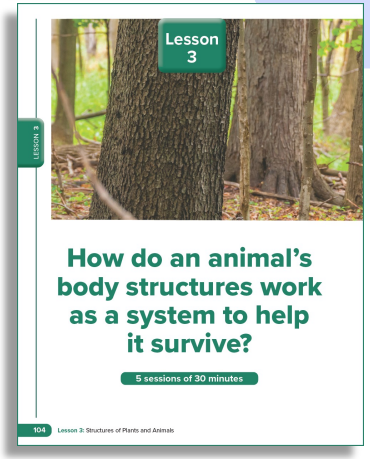
In this lesson, students will:

- Make observations to collect data on the parts of an animal system, their functions, and how they work together to help an animal grow, survive, and reproduce. (Parts B and C)
- Construct an evidence-based argument that describes how structures work as a system to help an animal grow, survive, and reproduce. (Part D)

Building Toward NGSS Performance Expectations

- **4-LS1-1:** Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.[1]





1. NGSS Lead States, *Next Generation Science Standards: For States, By States* (Washington, DC: The National Academies Press, 2013), retrieved from www.nextgenscience.org or ngss.nsta.org.

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PERFORMANCE EXPECTATIONS

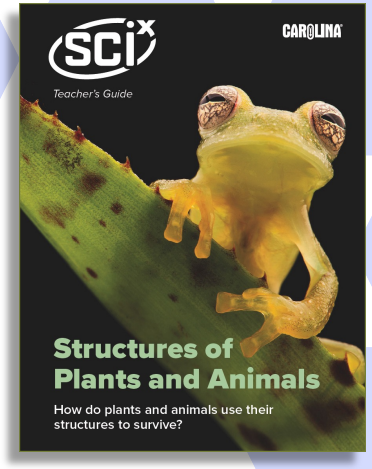
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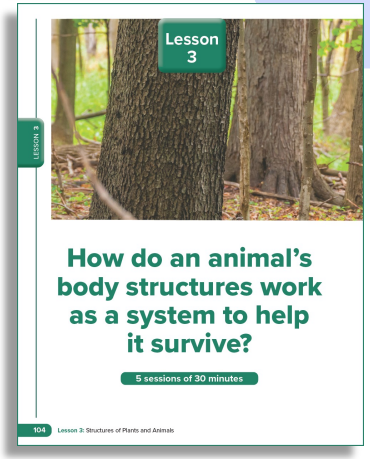
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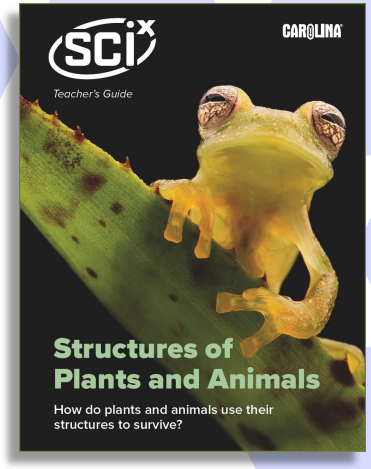
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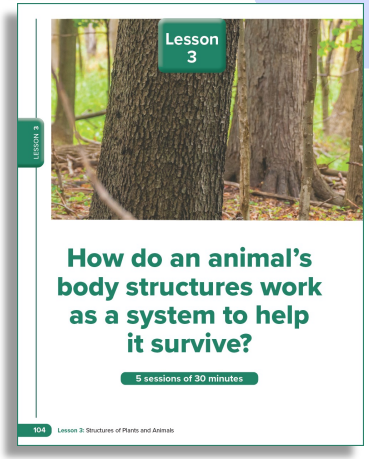
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Building Toward NGSS Performance Expectations

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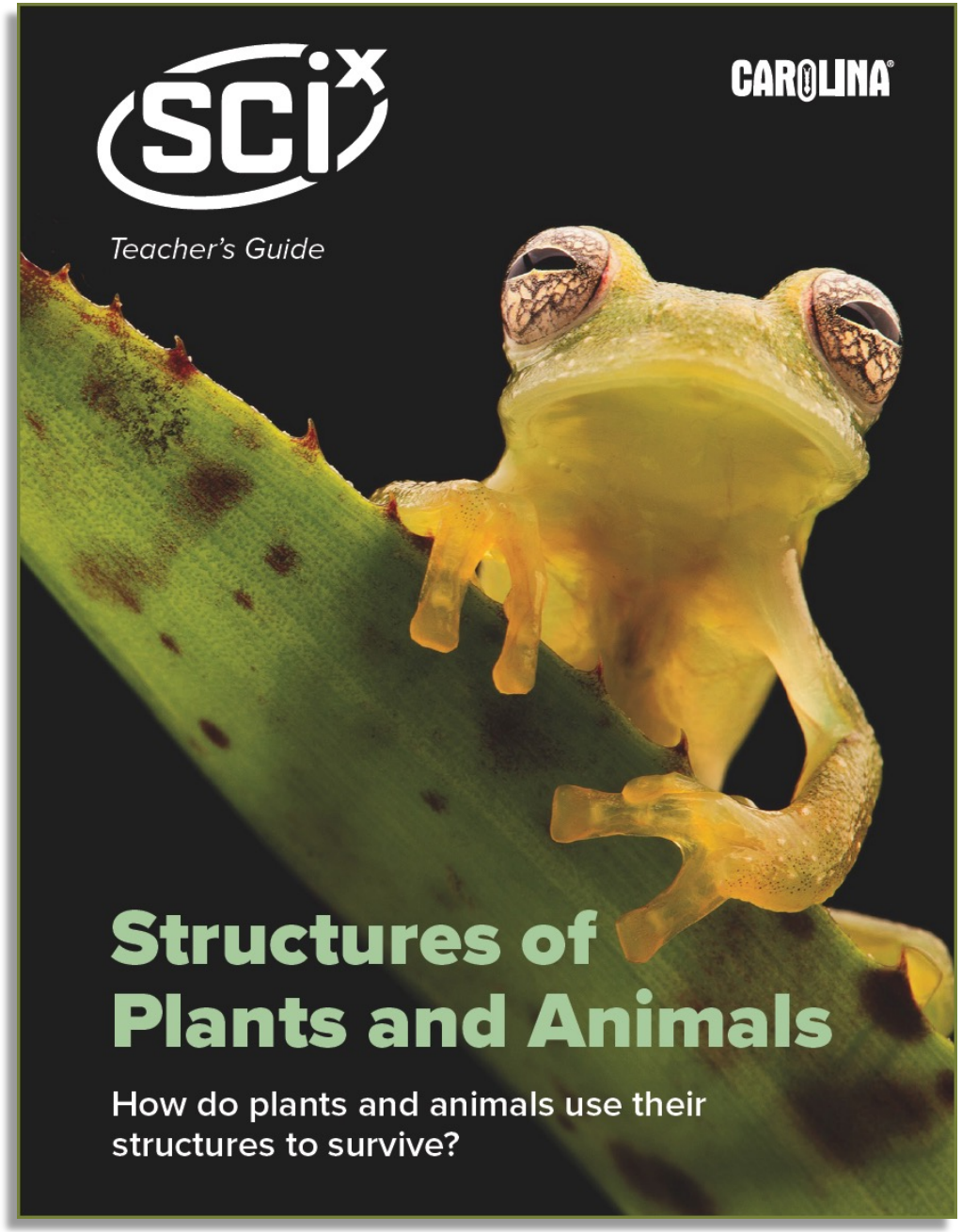




1. NGSS Lead States, *Next Generation Science Standards: For States, By States* (Washington, DC: The National Academies Press, 2013), retrieved from www.nextgenscience.org or ngss.nsta.org.

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Where curiosity leads, learning follows.™

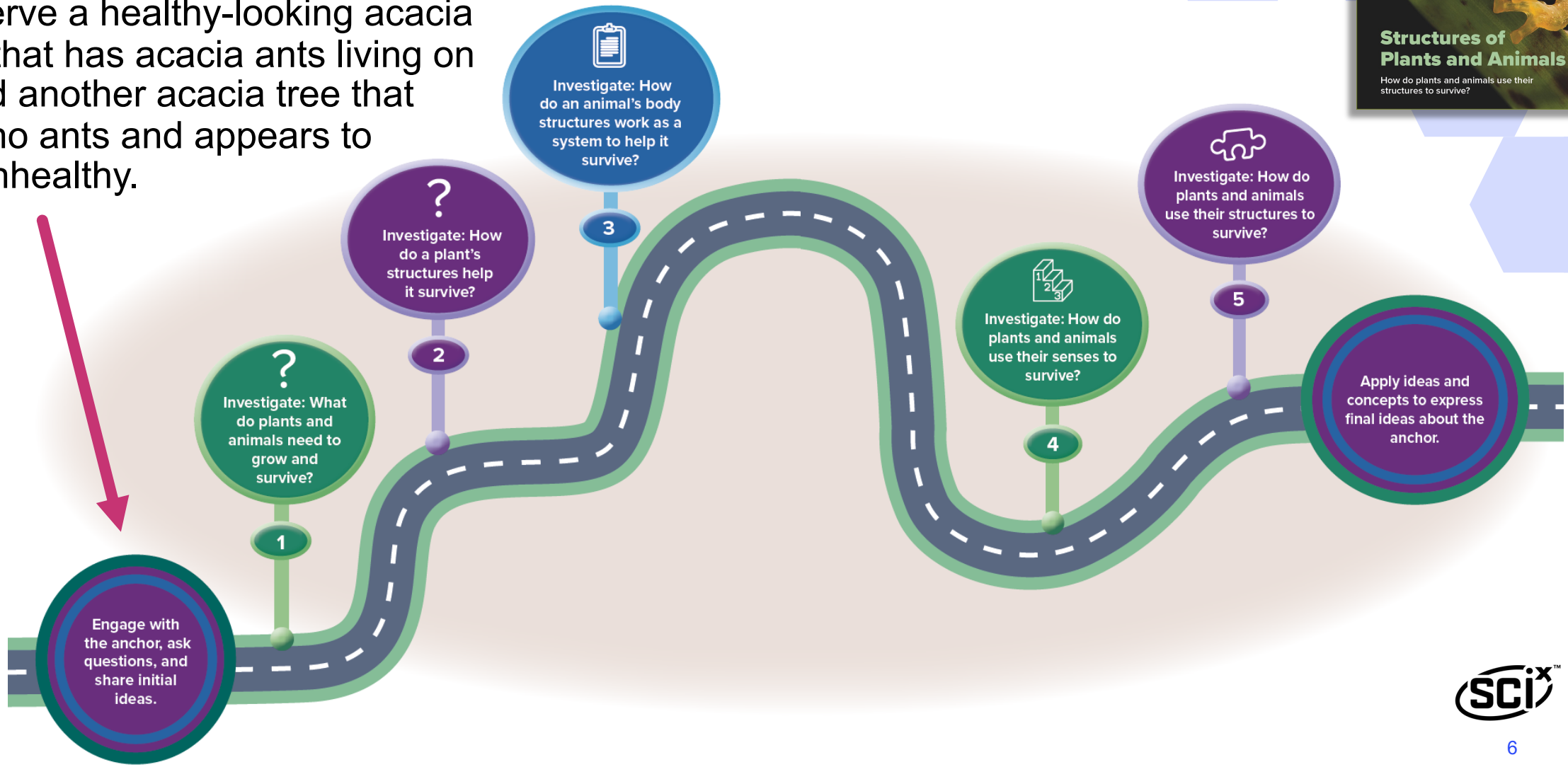


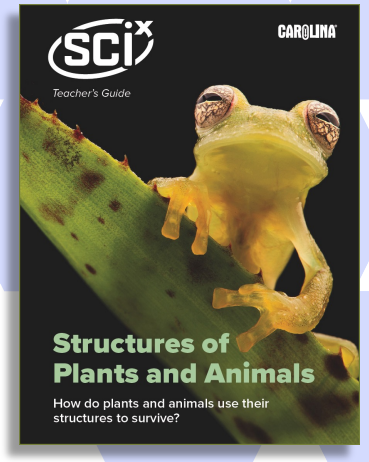
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Anchoring Phenomenon

Observe a healthy-looking acacia tree that has acacia ants living on it and another acacia tree that has no ants and appears to be unhealthy.





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Anchoring Phenomenon

Observe a healthy-looking acacia tree that has acacia ants living on it and another acacia tree that has no ants and appears to be unhealthy.



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Anchoring Phenomenon

Observe a healthy-looking acacia tree that has acacia ants living on it and another acacia tree that has no ants and appears to be unhealthy.



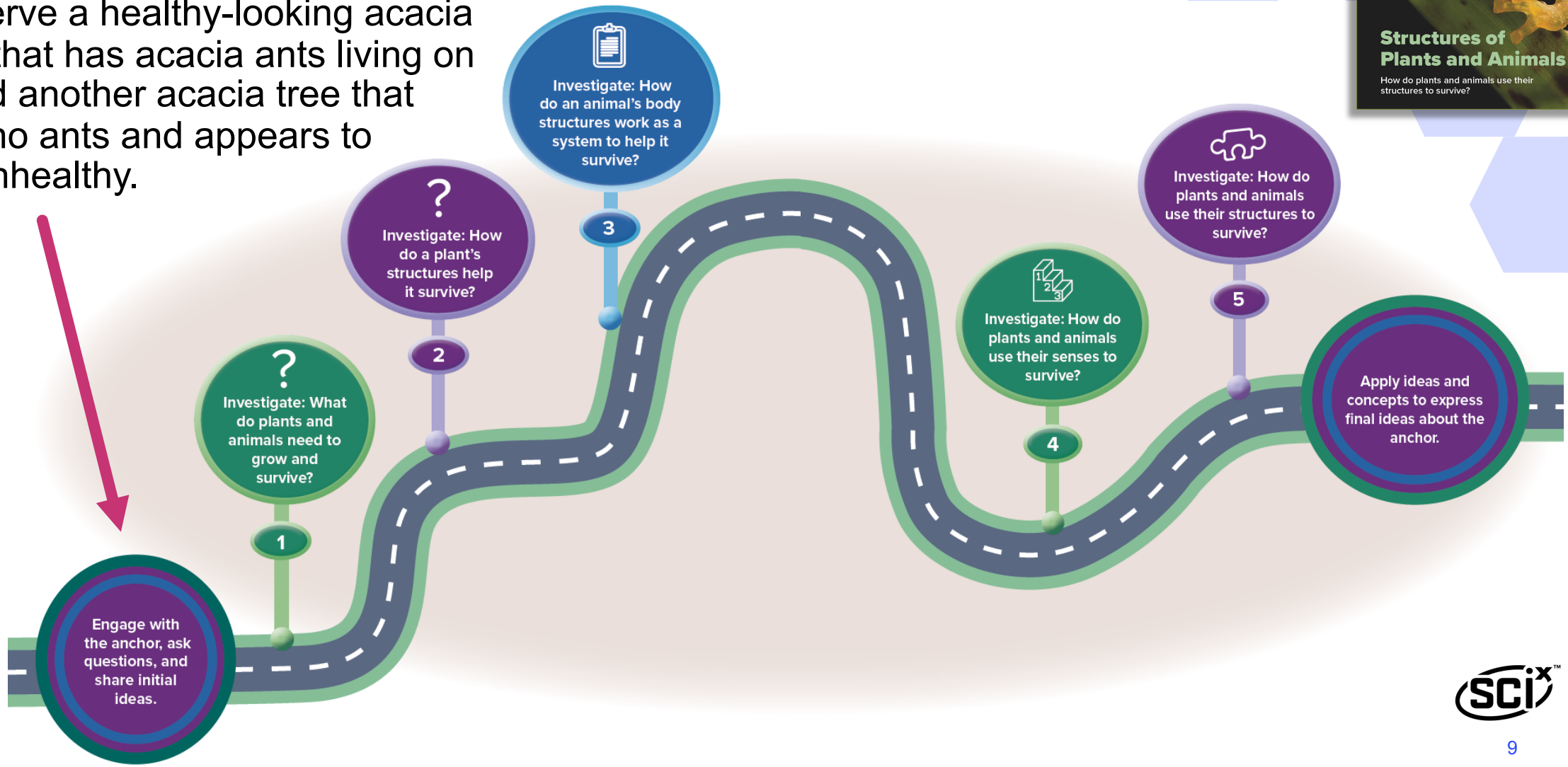
NOTICE	WONDER
Tree with ants: • Has big colorful thorns • Ants crawl in and out of thorns • Has a lot of leaves • Leaves have yellow/orange things on the tips • Ants look like they are eating/drinking out of holes/bumps in the tree **Tree without ants:** • Thorns are dried/split open • Bugs are living in the thorns • The trunk has holes in it • Missing most of its leaves • Leaves are ripped or chewed • Looks sick/unhealthy	• Is the tree without ants dying? • Why does the tree without ants look unhealthy? • I wonder why the unhealthy tree didn't have ants but did have other bugs • Do ants eat the acacia tree leaves? Is that why there are no ants on the unhealthy tree? • What are those yellow/orange things on the leaves of the tree? Are they only on healthy trees? • Are the ants eating/drinking from the holes in the tree? • Why are ants crawling in and out of the thorns? • Did the ants hurt the tree?

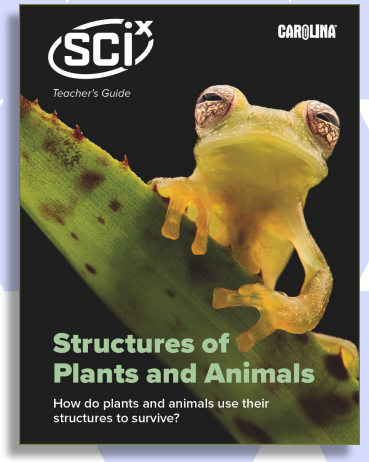
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Anchoring Phenomenon

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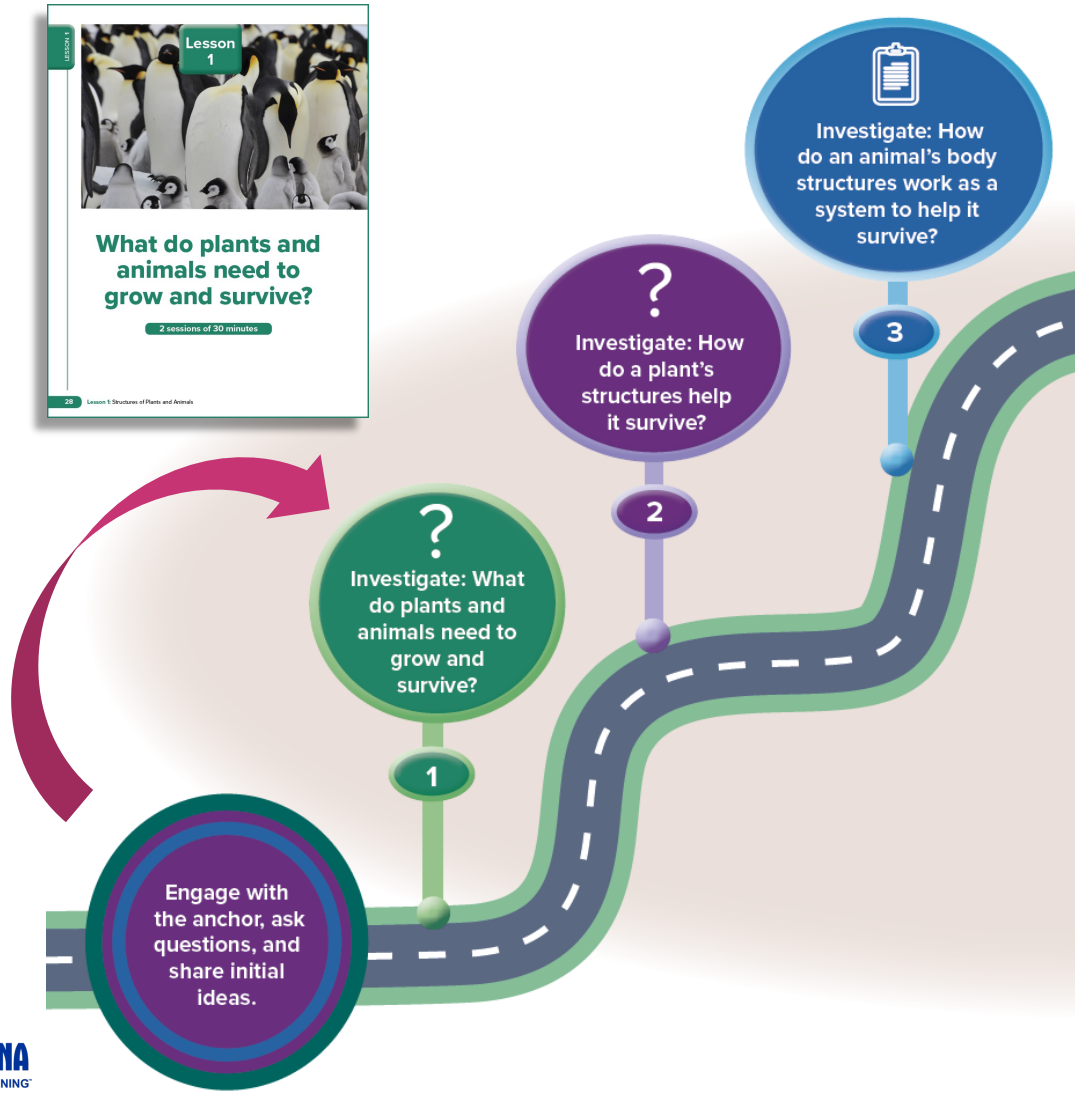




CAROLINA UNLEASH LEARNING

SCIx

Investigate: What do plants and animals need to grow and survive?

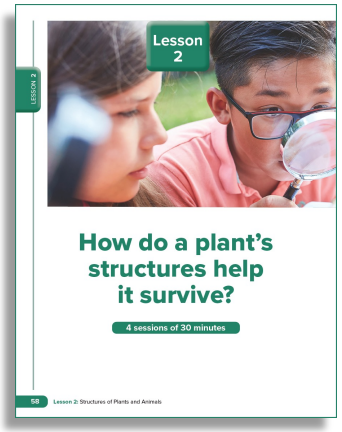


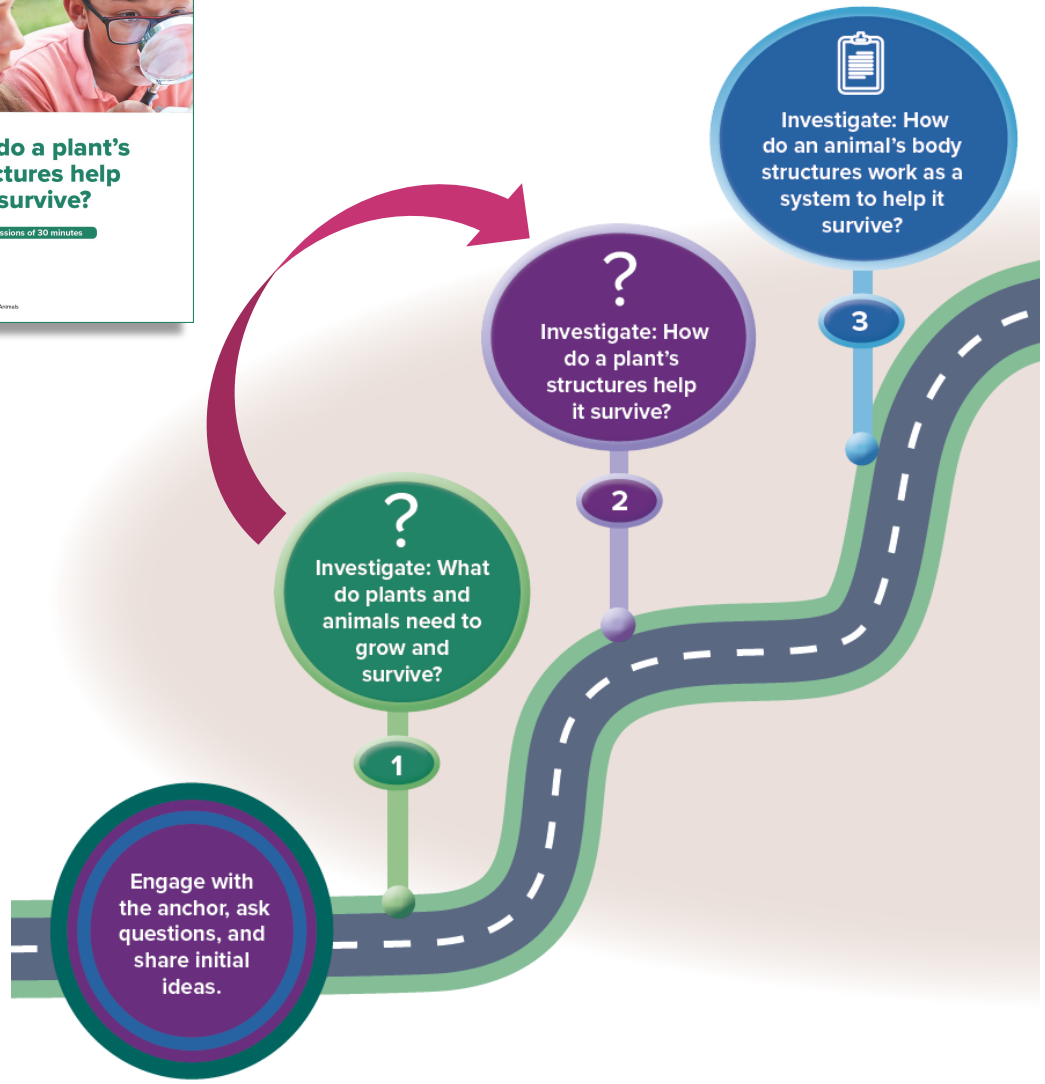
- Connect to Prior Knowledge
- Make Observations
- Ask Questions
- **Identifying the Anchoring Phenomenon:**
  The acacia tree with ants looks healthy, and the acacia tree without ants does not look healthy.
- Develop Initial Ideas
- Earn Words
- Develop Initial Models
- **Identify the Unit-Driving Question:**
  "How do plants and animals use their structures to survive?"

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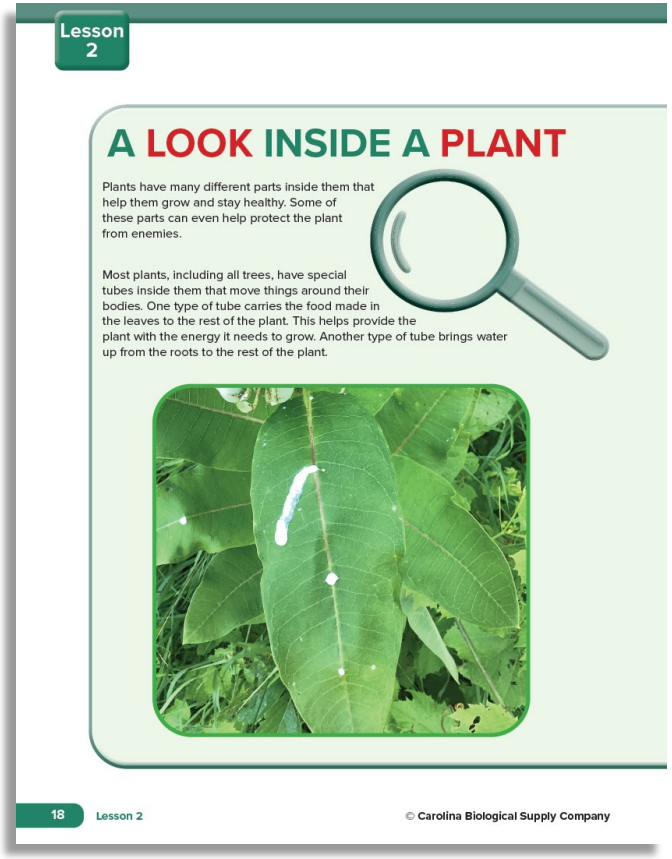
SCIX™

Investigate: How do a plant's structures help it survive?



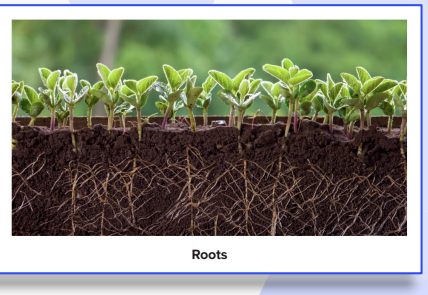


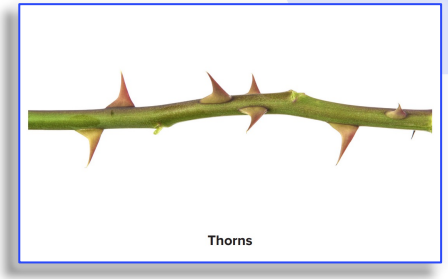
Literacy

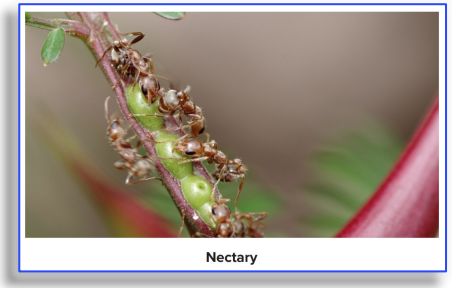


Card Sets





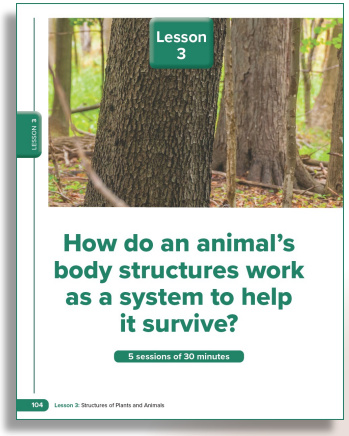




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Investigate: How do an animal's body structures work as a system to help it survive?



- Why are plants considered systems?
- Could the same be true for animals?

OUR IDEAS ABOUT ANIMAL SURVIVAL

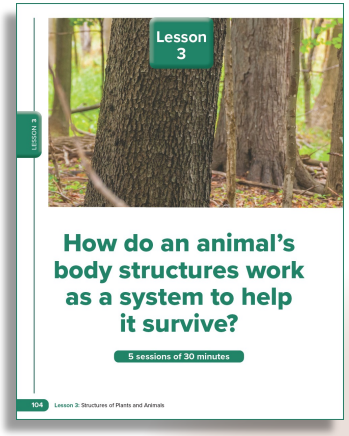
Legs G,P,R
Antennae P,R?
Eyes G,P,R
Mouth G,P
Stinger P
Fur P
Blubber P
Claws P

Wings G,P,R
Fins G,P,R
Tails P,R

CAROLINA UNLEASH LEARNING

SCI

Investigate: How do an animal's body structures work as a system to help it survive?



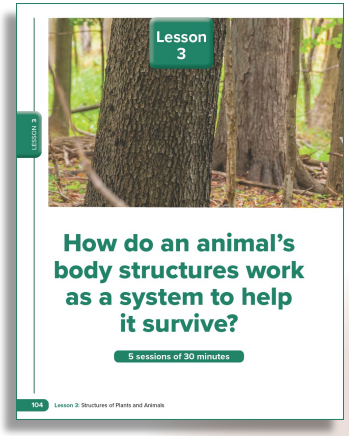
Animal Structures **Interactive**



CAROLINA UNLEASH LEARNING

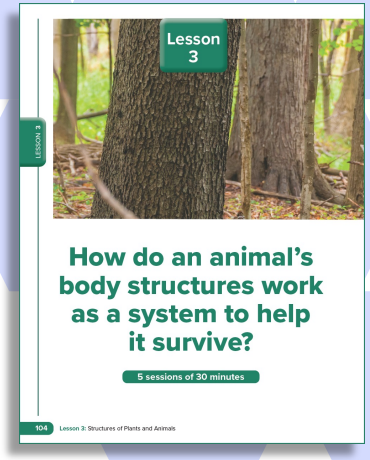
SCIX

Investigate: How do an animal's body structures work as a system to help it survive?



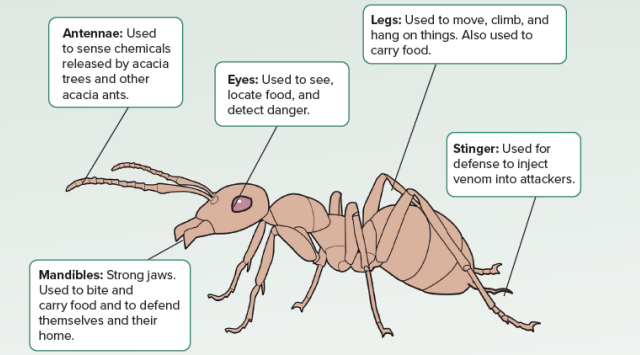
How can we observe a specimen to investigate how an animal's structures work as a system to help it survive?

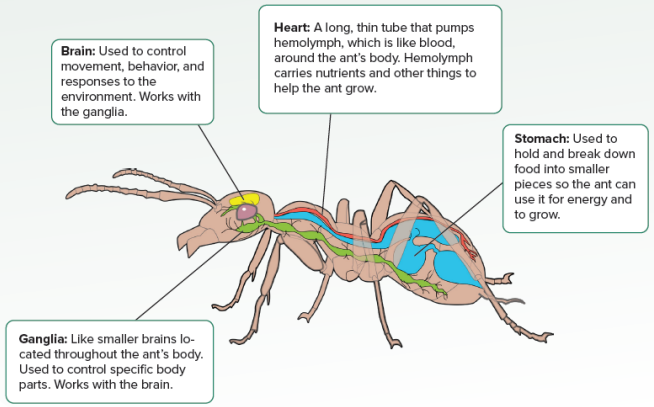
How can we observe a specimen to investigate how an animal's structures work as a system to help it survive?



Date: _____

ALL ABOUT ACACIA ANTS!





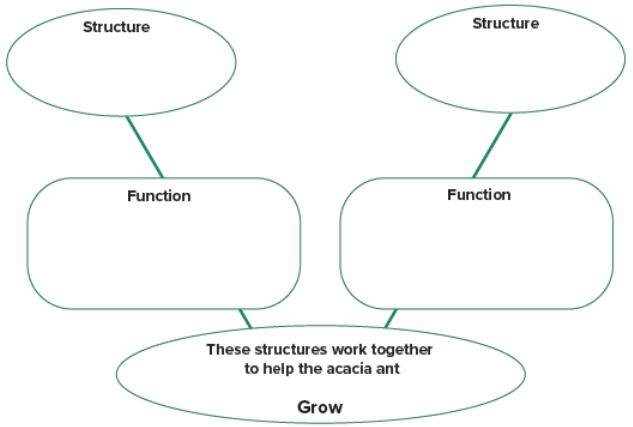
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Lesson 3

Date: _____

ACACIA ANT SYSTEM

1. Complete the graphic organizer to show how the acacia ant's structures work together to help it grow.



How do these structures work together?

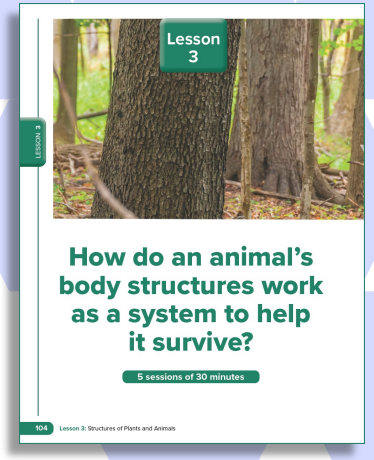
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Notebook
Infographic

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How can we observe a specimen to investigate how an animal's structures work as a system to help it survive?

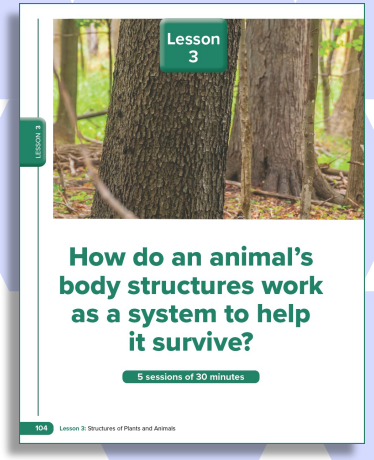




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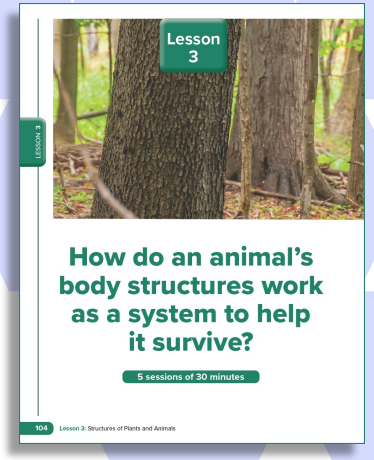




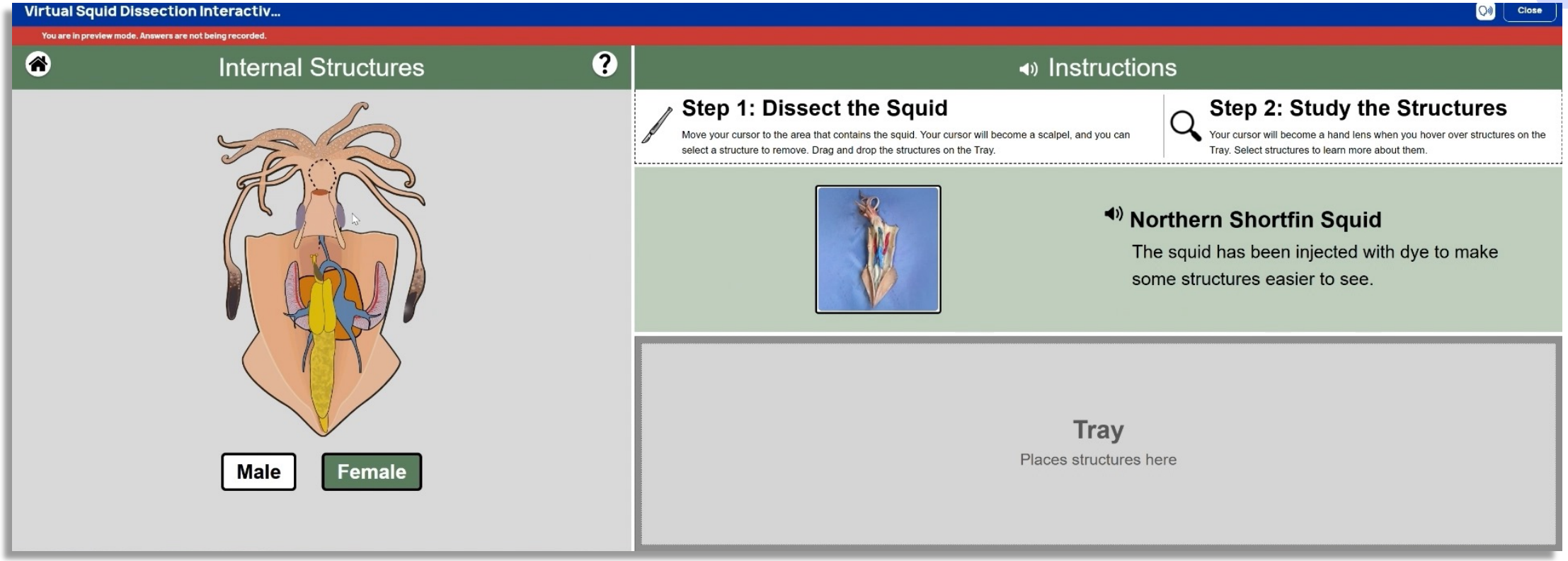
Video

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How can we observe a specimen to investigate how an animal's structures work as a system to help it survive?

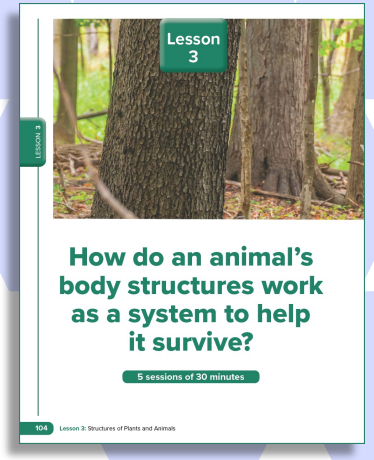


Simulation



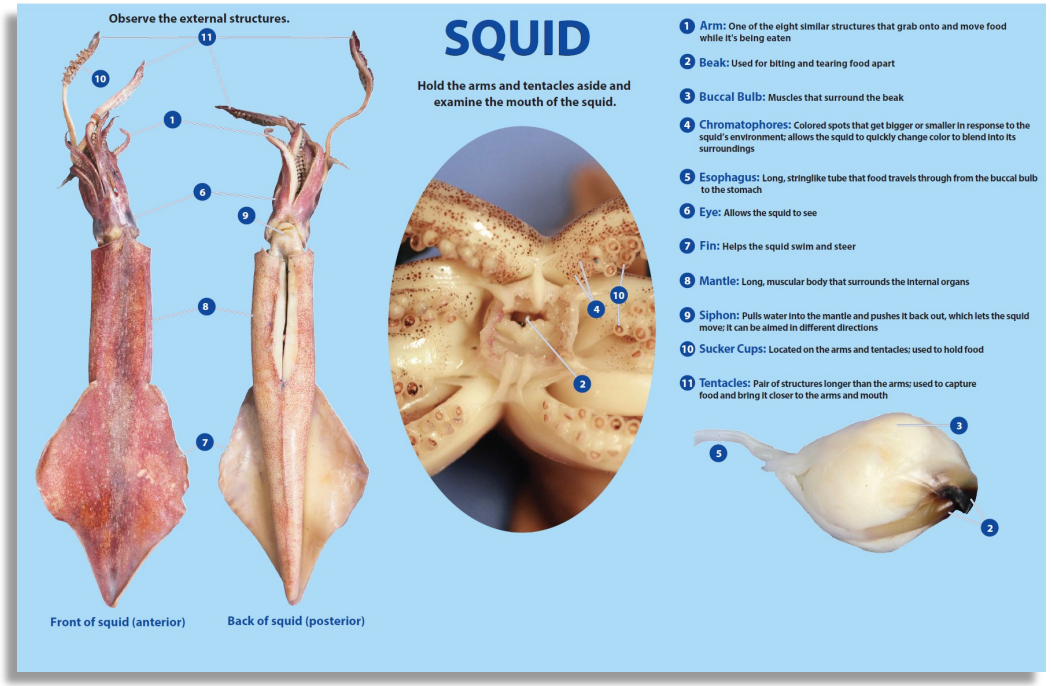
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How can we observe a specimen to investigate how an animal's structures work as a system to help it survive?



Hands-on!

Dissection Mats

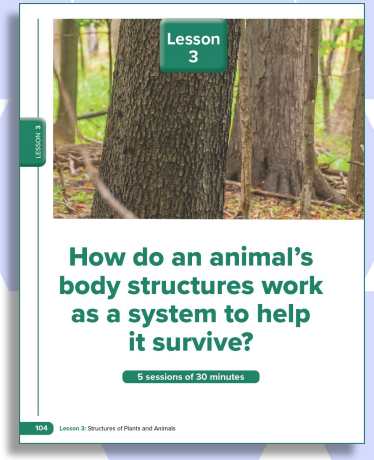


Dissection Kit



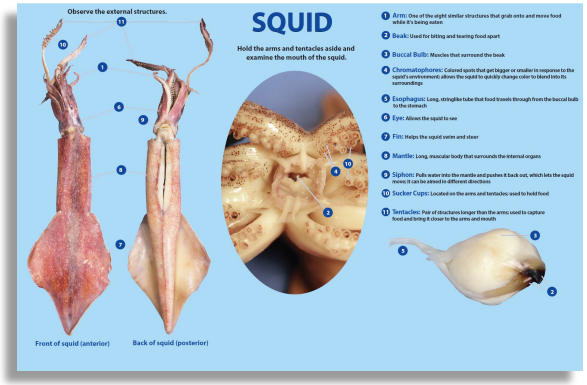
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How can we observe a specimen to investigate how an animal's structures work as a system to help it survive?



Hands-on!

Dissection Mats



You need:

- 1 Hand lens
- 1 Lab Apron
- 1 Pair of gloves
- 1 Pair of goggles

Your group needs:

- 1 Squid Dissection Mat
- 1 Squid tray

Put on your safety equipment.

Dissection Kit



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Connect to the Anchoring Phenomenon

- What evidence do we have to show that an acacia tree and the acacia ant might also be systems?

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One Cohesive Science Experience | Hands-On + Print + Digital

Hands-on materials

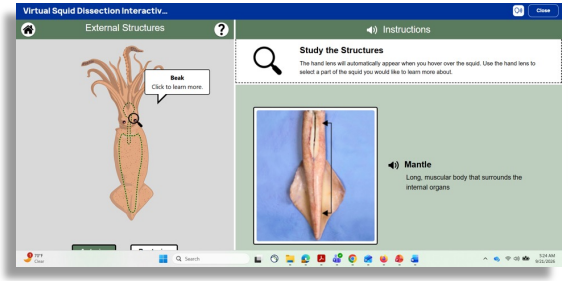


Digital

Simulations



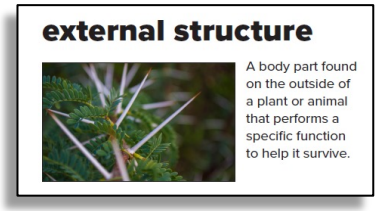
Interactives



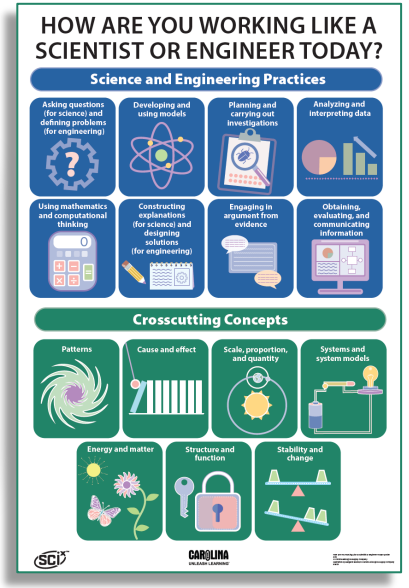
Videos



Earned Word Cards



Posters



Card Sets

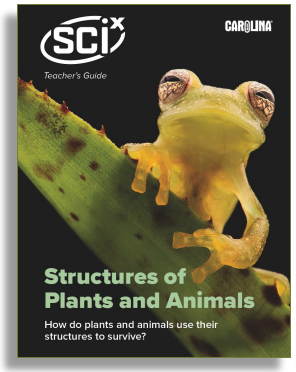


Nonfiction Magazines

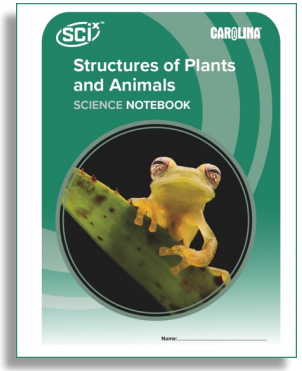


Print

Teacher's Guide



Notebook & Reader



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Grades K–5

- **Intentionally sequenced within and across grades**
- **100% coverage of NGSS Performance Expectations!**

Life science units | Physical science units | Earth science units

Grade K	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Pushes and Pulls *K-PS2-1, K-PS2-2*	Patterns in the Sky *1-ESS1-1, 1-ESS1-2*	Relationships in a Habitat *2-LS2-1, 2-LS2-2, 2-LS4-1*	Weather and Climate *3-ESS2-1, 3-ESS2-2, 3-ESS3-1, 3-5-ETS 1-1, 3-5-ETS1-3*	Structures of Plants and Animals *4-LS1-1, 4-LS1-2*	Physical and Chemical Changes to Matter *5-PS1-2, 5-PS1-3, 5-PS1-4*
Needs of Plants and Animals *K-LS1-1, K-ESS2-2, K-ESS3-1*	Sound *1-PS4-1, 1-PS4-4, K-2-ETS1-3*	Water on Earth *2-ESS2-2, 2-ESS2-3*	Traits of Plants and Animals *3-LS1-1, 3-LS3-1, 3-LS3-2*	Perception and Memory *4-LS1-2, 4-PS4-2, 3-5-ETS1-1*	Movement of Water on Earth *5-PS1-1, 5-PS2-1, 5-ESS2-1, 5-ESS2-2*
Human Impact *K-ESS3-1, K-ESS3-3*	Light *1-PS4-2, 1-PS4-3*	Changes on Earth *2-ESS1-1, 2-ESS2-1, K-2-ETS1-3*	Plant and Animal Survival *3-LS2-1, 3-LS4-2, 3-LS4-3, 3-LS4-4*	Energy Transfer *4-PS3-1, 4-PS3-2, 4-PS3-3*	Matter and Energy in Plants *5-LS1-1, 5-LS2-1, 5-PS3-1*
Weather *K-ESS2-1, K-ESS3-2*	Characteristics of Plants and Animals *1-LS1-1, K-2-ETS1-1, K-2-ETS1-2*	Properties of Matter *2-PS1-1, 2-PS1-2, K-2-ETS1-2*	Fossils *3-LS4-1*	Electrical Energy and Communication *4-PS3-4, 4-PS4-3, 3-5-ETS1-3*	Matter and Energy in Ecosystems *5-PS3-1, 5-LS2-1, 5-ESS3-1, 3-5-ETS1-2*
Sunlight *K-PS3-1, K-PS3-2, K-ETS1-3*	Parents and Their Young *1-LS1-2, 1-LS3-1*	Changes to Matter *2-PS1-1, 2-PS1-3, 2-PS1-4*	Forces and Motion *3-PS2-1, 3-PS2-2*	Erosion and Weathering *4-ESS1-1, 4-ESS2-1, 4-ESS3-1*	Earth in Space *5-ESS1-1, 5-ESS1-2*
			Electric and Magnetic Forces *3-PS2-3, 3-PS2-4*	Natural Hazards *4-ESS2-2, 4-ESS3-2, 4-PS4-1, 3-5-ETS1-2*	

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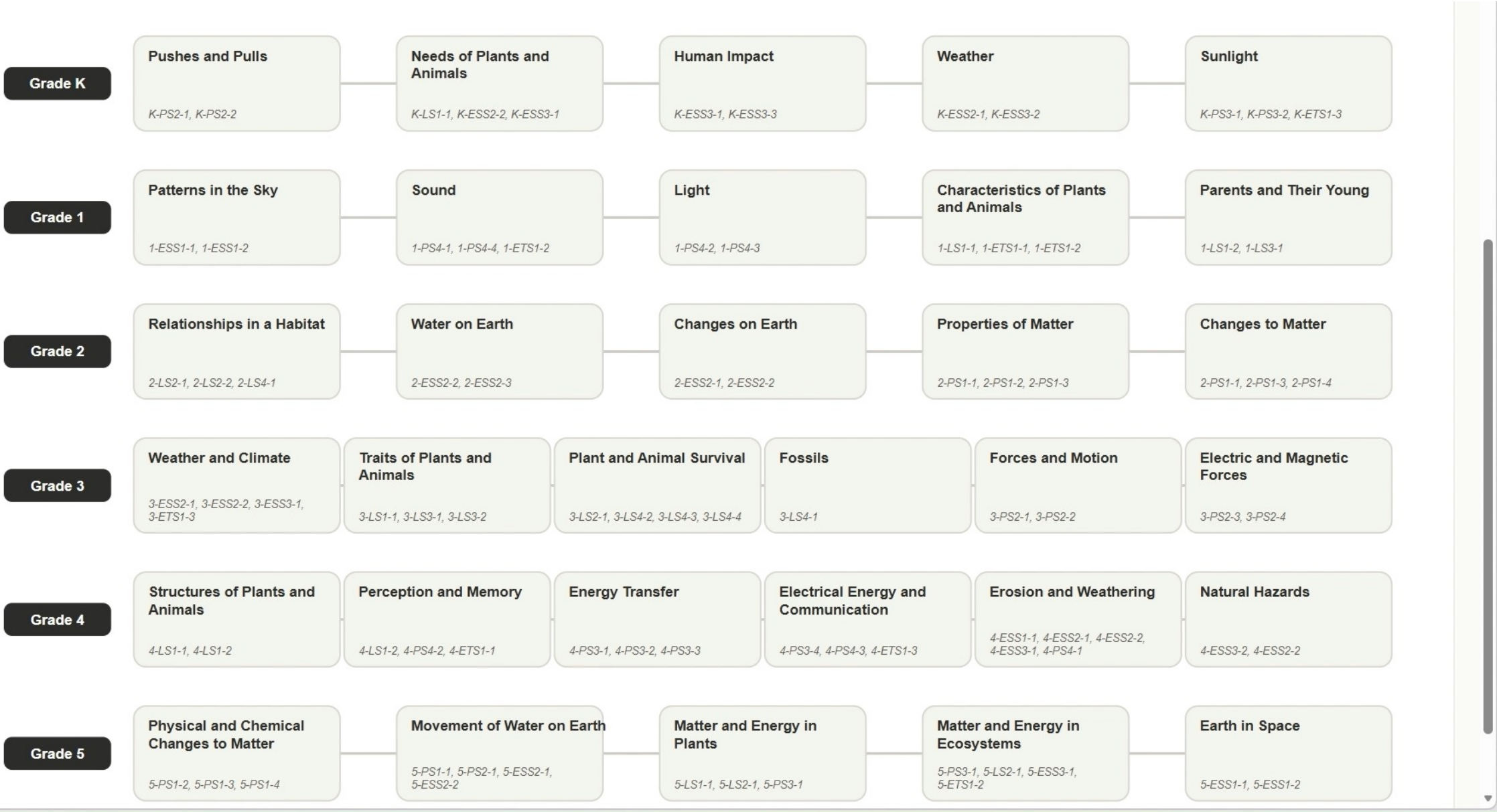
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Grade K	**Pushes and Pulls** *K-PS2-1, K-PS2-2*	**Needs of Plants and Animals** *K-LS1-1, K-ESS2-2, K-ESS3-1*	**Human Impact** *K-ESS3-1, K-ESS3-3*	**Weather** *K-ESS2-1, K-ESS3-2*	**Sunlight** *K-PS3-1, K-PS3-2, K-ETS1-3*
Grade 1	**Patterns in the Sky** *1-ESS1-1, 1-ESS1-2*	**Sound** *1-PS4-1, 1-PS4-4, 1-ETS1-2*	**Light** *1-PS4-2, 1-PS4-3*	**Characteristics of Plants and Animals** *1-LS1-1, 1-ETS1-1, 1-ETS1-2*	**Parents and Their Young** *1-LS1-2, 1-LS3-1*
Grade 2	**Relationships in a Habitat** *2-LS2-1, 2-LS2-2, 2-LS4-1*	**Water on Earth** *2-ESS2-2, 2-ESS2-3*	**Changes on Earth** *2-ESS2-1, 2-ESS2-2*	**Properties of Matter** *2-PS1-1, 2-PS1-2, 2-PS1-3*	**Changes to Matter** *2-PS1-1, 2-PS1-3, 2-PS1-4*
Grade 3	**Weather and Climate** *3-ESS2-1, 3-ESS2-2, 3-ESS3-1, 3-ETS1-3*	**Traits of Plants and Animals** *3-LS1-1, 3-LS3-1, 3-LS3-2*	**Plant and Animal Survival** *3-LS2-1, 3-LS4-2, 3-LS4-3, 3-LS4-4*	**Fossils** *3-LS4-1*	**Forces and Motion** *3-PS2-1, 3-PS2-2*	**Electric and Magnetic Forces** *3-PS2-3, 3-PS2-4*
Grade 4	**Structures of Plants and Animals** *4-LS1-1, 4-LS1-2*	**Perception and Memory** *4-LS1-2, 4-PS4-2, 4-ETS1-1*	**Energy Transfer** *4-PS3-1, 4-PS3-2, 4-PS3-3*	**Electrical Energy and Communication** *4-PS3-4, 4-PS4-3, 4-ETS1-3*	**Erosion and Weathering** *4-ESS1-1, 4-ESS2-1, 4-ESS2-2, 4-ESS3-1, 4-PS4-1*	**Natural Hazards** *4-ESS3-2, 4-ESS2-2*
Grade 5	**Physical and Chemical Changes to Matter** *5-PS1-2, 5-PS1-3, 5-PS1-4*	**Movement of Water on Earth** *5-PS1-1, 5-PS2-1, 5-ESS2-1, 5-ESS2-2*	**Matter and Energy in Plants** *5-LS1-1, 5-LS2-1, 5-PS3-1*	**Matter and Energy in Ecosystems** *5-PS3-1, 5-LS2-1, 5-ESS3-1, 5-ETS1-2*	**Earth in Space** *5-ESS1-1, 5-ESS1-2*

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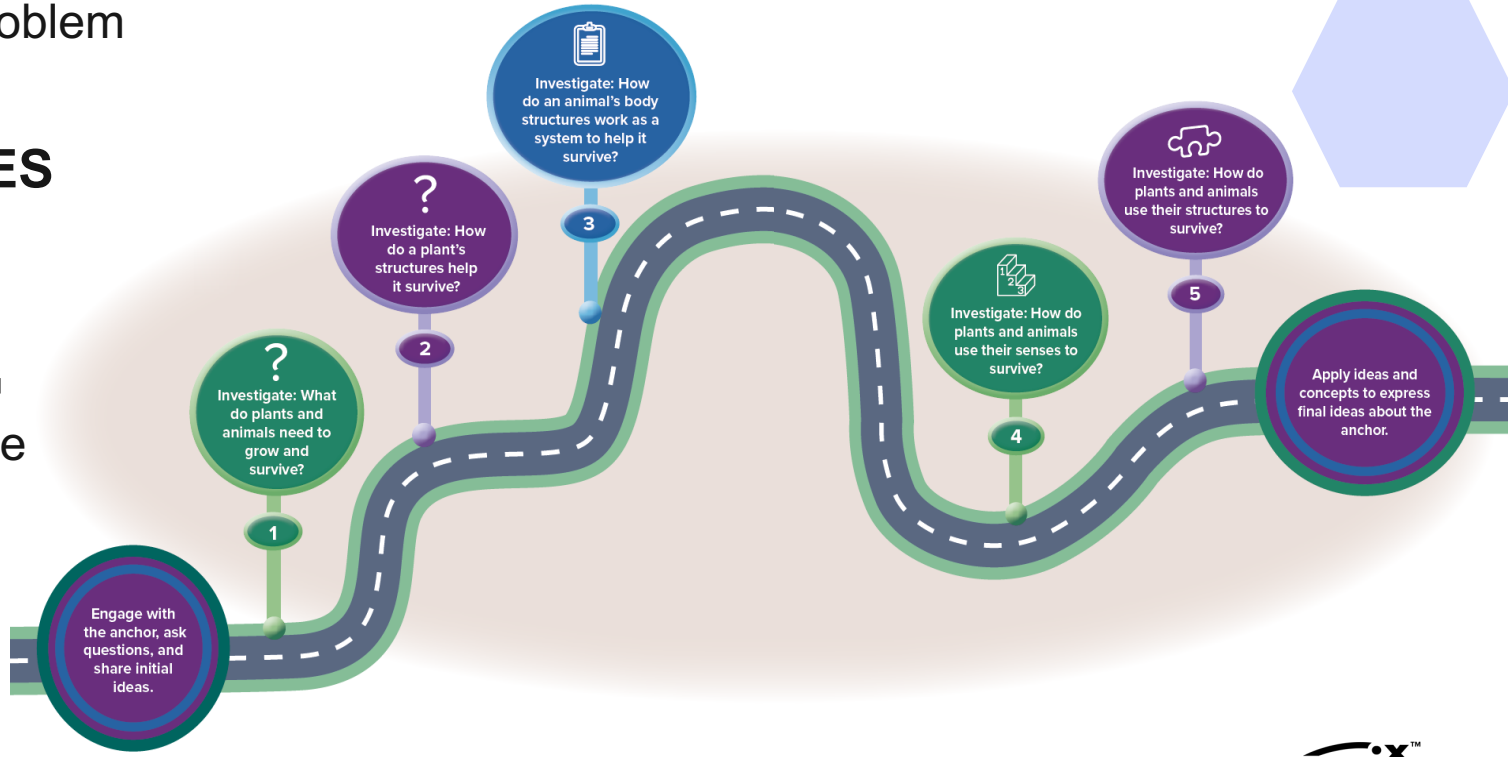
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