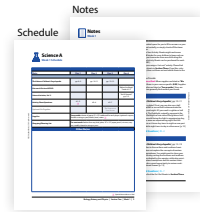


# Instructor's Guide Quick Start

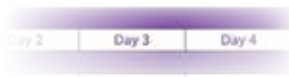
The BookShark™ Instructor's Guide (IG) is designed to make your educational experience as easy as possible. We have carefully organized the materials to help you and your children get the most out of the subjects covered. If you need help reading your schedule, see "How to Use the Schedule" in **Section Four**.

This IG includes a 36-week schedule, notes, assignments, readings, and other educational activities. For specific organizational tips, topics and skills addressed and other suggestions for the parent/teacher see **Section Three**. Here are some helpful features that you can expect from your IG.



## Easy to use

Everything you need is located right after the schedule each week. If a note appears about a concept in a book, it's easy to find it right after the schedule based on the day the relevant reading is scheduled.



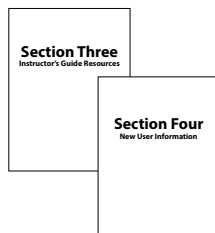
## 4-Day Schedule

Designed to save one day a week for music lessons, sports, field trips, co-ops, or other extra-curricular activities.

## Notes

When relevant, you'll find notes about specific books to help you know why we've selected a particular resource and what we hope your children will learn from reading it. Keep an eye on these notes to also provide you with insights on more difficult concepts or content (look for "Note to Mom or Dad").

**Note:** What are the two kinds of poisonous lizards? The book only lists one – the Gila monster (*Heloderma suspectum*) native to the southwestern United States. The other kind is known as a beaded lizard (*Heloderma horridum*) and is found in Mexico and Guatemala. [p. 35]

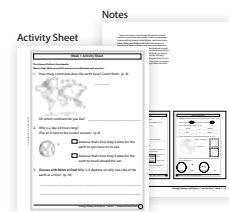


## Instructor's Guide Resources and New User Information

Don't forget to familiarize yourself with some of the great helps in **Section Three** and **Section Four** so you'll know what's there and can turn to it when needed.

## Activity Sheets and Answer Keys

Activity Sheets follow each week's notes and are customized for each lesson to emphasize important points in fun ways. They are designed with different skills and interests in mind. You may want to file them in a separate binder for your student's use. Corresponding Answer Keys have been included within your weekly Notes.



# How to Use the Schedule

## More notes with important information about specific books.

The **N** symbol provides you with a heads-up about difficult content. We tell you what to expect and often suggest how to talk about it with your kids.

## 4-Day Schedule:

This entire schedule is for a 4-Day program. Designed to save one day a week for music lessons, sports, field trips, co-ops and other activities.

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Find the Activity Sheets for students directly after the Notes. Students should complete only the questions assigned.

We schedule optional assignments to be used if desired.

Find all the supplies needed for this week as well as the supplies needed for next week here.

Additional space for writing extra assignments, activities, or notes.



## Science A Week 1 Schedule

Date:	Day 1	Day 2	Day 3	Day 4
<i>The Usborne Children's Encyclopedia</i>	pp. 8-9	pp. 10-11	pp. 12-13	
<i>Discover &amp; Do Level K DVD</i>				"Before You Begin" Tracks #1-3
<i>Science Activities, Vol. 2</i>				"Air All Around" pp. 2-3
<b>Activity Sheet Questions</b>	#1-2 <b>N</b>	#3-4	#5-7	
<b>Optional: Do Together</b>			The Seasons at Your House	
<b>Supplies</b>	<b>You provide:</b> sheets of paper, 8" x 10" cardboard for each player (optional: crayons, thread or string or yarn) bottle, bowl, water. <b>N</b>			
<b>Shopping/Planning List</b>	<b>For next week:</b> feather from any bird, plate, 10" x 10" paper, pencil, scissors, crayons, needle, thread or string or yarn.			

### Other Notes

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**N** Special Note to Mom or Dad



Biology, Botany, and Physics | Section Two | Week 1 | 1



# Science E

## Week 1 Schedule

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Date:	Day 1	Day 2	Day 3	Day 4	Day 5
<i>Mysteries and Marvels of Nature</i>	pp. 6–9	pp. 10–13	pp. 14–17		
Activity Sheet Questions	#1–5 	#6–12	#13–16		
Optional: Do Together	Bubble Net Feeding	Dinner Time!			
<i>Usborne Illustrated Elementary Science Dictionary</i>				pp. 110–112	
<i>BookShark Science Experiments Book</i>				How Does It Taste?	
Supplies	<b>We provide (4SK):</b> iodine, eyedropper <b>You provide:</b> 1 Tablespoon cornstarch, water, 1" cube of potato, 1" cube of carrot, a small piece of bread, 1 leaf of lettuce (chopped), knife, 6 small bowls 				
Shopping/Planning List	<b>For next week:</b> 3 small bowls, marker, 4 Tablespoons water, 2 Tablespoons lemon juice, 1 Tablespoon baking soda				
Other Notes					

### Day 1

**Mysteries and Marvels of Nature** | pp. 6–9

#### Activity Sheet Questions | #1–5


**Note:** Find each week's Activity Sheets immediately after the notes and have your students answer the questions assigned on the schedule page. Each Activity Sheet has a corresponding Answer Key page at the end of each week's notes.

Your students do not have to do every question on the Activity Sheet. Feel free to adjust and/or omit activities to

meet the needs of your students. We cover the same concepts repeatedly throughout the year (and years to come!) to enable students to learn "naturally" through repetition and practice over time.

We have provided a variety of activities to interest and challenge your students. Feel free to let your students do those activities that they enjoy and simply talk through others.

Any question marked **Challenge** or **Critical Thinking** will be just that—a challenge for your students or a chance for them to think beyond the page. While we believe the material covered in the challenge questions is worthwhile

 Special Note to Mom or Dad



# Notes

## Week 1

for your students to know, it may not be specifically explained in their reading assignment. As always, if you think any question is too difficult for your students, please feel free to skip it.

**Remember:** This program is designed for you to use to meet your students' needs. It is not meant to use you!

**Suggestion:** Your Activity Sheets might work more easily in a small binder for your students to keep and use as assigned. If you have more than one child using this program, extra Activity Sheets can be purchased for each child (Item #4SB1).

### Optional: Do Together | Bubble Net Feeding

Use your favorite search engine to look up the phrase, "bubble net feeding." You should be able to find some great videos about this feeding method. Watch them with your students and discuss how this feeding method differs from that of other ocean dwellers, such as the great white shark. Feel free to search the phrases, "great white sharks feeding" and "frogfish feeding." There's nothing quite like bringing a lesson to life by watching the animals in action! 📺

### Supplies

**Note:** When supplies are listed as "**We provide:**" they are materials found in your Science D Supplies Kit (4SK). When supplies are listed as "**You provide:**" they are materials you can generally find around your home.

## Day 2

### *Mysteries and Marvels of Nature* | pp. 10–13

Along with the chameleon's unique tongue, this amazing animal has another feature that no other animal has—eyes that move independently of each other so that they can see in two different directions at once—a full 360-degree view. Chameleons also have the ability to zoom in on objects quickly, like a camera lens. Although some animated films depict chameleons as having the ability to make wildly colorful skin changes that blend in with elaborate, patterned backgrounds, they are actually limited in color. Their colors change in response to emotions, changes in light, temperature, or humidity. On a smaller scale, humans' skin can change color too, but chameleons have more interesting color options. [p. 11]

### Activity Sheet Questions | #6–12

### Optional: Do Together | Dinner Time!

In the past, people had to catch dinner, much like the animals discussed in your students' book. So how did they do it?

Discuss with your students the ways in which people have caught their dinner in the past (and possibly still today!). Some examples: hunting or trapping wildlife, fishing, gathering berries, growing vegetables, etc.

## Day 3

### *Mysteries and Marvels of Nature* | pp. 14–17

The authors point out on page 15 that giraffes are designed to reach the higher parts of trees that most animals cannot. Eyelash vipers can survive up to a year between meals (p. 10), chameleons have a tongue that can extend longer than its body (p. 11), owls have such good hearing that they can detect the rustle of a mouse on the ground from a treetop (p. 13), giraffes have tongues that are up to 20 inches long (p. 15), and tigers can leap up to 20 feet! (p. 15). After reflecting on the unique and amazing features of these animals, name some special aspects that can be seen in your favorite animals, your family, and your friends.

### Activity Sheet Questions | #13–16

## Day 4

### *Usborne Illustrated Elementary Science Dictionary* | pp. 110–112

### *BookShark Science E Experiments Book* | How Does It Taste? ■

## Week 1 Activity Sheet

### Mysteries and Marvels of Nature

1. How do the following animal-eating plants lure new victims? (pp. 6-7)

Venus fly trap 1) (colors)  
 pitcher plant 2) (scent)  
 sundew 3) (promise of food)



2. How does a bladderwort know when to expand one of its bladders to suck food? (p. 7)

(bladders expand and suck in water and food when a small creature swims past and touches sensitive hairs)

3. How many rows of teeth do sharks use? (Circle the correct answer.) (p. 8)

1      2      3      4

4. Circle the animal that works in teams to catch food. (p. 9)

whale  
 shark  
 starfish  
 crab



5. Describe how the frogfish catches a meal. Use numbers to place the sentences below in order. (p. 9)

(2) When a fish comes near, the frogfish suddenly opens its mouth.  
 (1) The frogfish hides in the coral and wiggles its lure.  
 (4) The fish is sucked inside the frogfish's mouth.  
 (3) Water rushes into the frogfish's mouth.

6. True or False? Reptiles must eat daily to avoid getting hungry. (p. 10)

True      False

## Week 1 Activity Sheet

7. What is similar about the way the eyelash viper, snapping turtle, and crocodile all get their food? (pp. 10-11)

☐ they all chase down their food  
☒ they all lurk and wait for food to come  
☐ they all shop at the same grocery store  
☐ they all use poison to catch their food

8. How does a snake eat food larger than itself? (p. 11)

(the snake unhinges its jaw and swallows the food whole)



9. A chameleon's tongue forms a \_\_\_\_\_ at the end which sticks to its prey. (p. 11)

Handle      Lever      Sticker      Suction Cup

10. Circle two body parts that birds use to catch food. (p. 12)

(Beaks and feet)



11. Use the word bank to complete the sentences about owls. (p. 13)







Front      Hearing      Ears

Owls have a very strong sense of (hearing). Even though their (ears) are on the sides of their heads, they face to the (front), and dish shapes on their faces help channel sounds.



## Week 1 Activity Sheet





12. Birds use their beaks to collect food. Match the following beaks to the correct function. (pp. 12–13)

	<b>Pelican</b>		Tear food apart
	<b>Green heron</b>		Scoop up fish
	<b>Owl</b>		Spear fish on pointed end

13. Mammals have \_\_\_\_\_ (hair) on their bodies and feed their babies \_\_\_\_\_ (milk). (p. 14)



14. Match each animal below to its special tool that helps it find food. (pp. 14–15)

<b>Vampire bat</b>		Curved claw to dig out bugs.
<b>Giraffe</b>		Excellent hearing, vision and sense of smell.
<b>Aye-aye</b>		Long, sharp front teeth.
<b>Tiger</b>		Long tongue.

15. Which is stronger? (Circle the correct answer) (p. 16) **spider's silk** **steel wire of the same thickness**









16. **True or False?** Insects eat both plants and animals. (p. 17)

**True**



## Week 1 Activity Sheet

17. Match each insect to the picture that describes its type of mouth. (p. 17)

	moth		housefly		cicada		beetle
	bite, chew, break apart		mop up food		uncurl to suck nectar		suck up juices

## Week 1 Activity Sheet

### *Mysteries and Marvels of Nature*

1. How do the following animal-eating plants lure new victims? (pp. 6–7)

<b>Venus fly trap</b>	1) _____
<b>pitcher plant</b>	2) _____
<b>sundew</b>	3) _____



2. How does a bladderwort know when to expand one of its bladders to suck food? (p. 7)

---

---

3. How many rows of teeth do sharks use? (Circle the correct answer.) (p. 8)

1                      2                      3                      4

4. Circle the animal that works in teams to catch food. (p. 9)

**whale**  
**shark**  
**starfish**  
**crab**



5. Describe how the frogfish catches a meal. Use numbers to place the sentences below in order. (p. 9)

\_\_\_\_\_ When a fish comes near, the frogfish suddenly opens its mouth.  
\_\_\_\_\_ The frogfish hides in the coral and wiggles its lure.  
\_\_\_\_\_ The fish is sucked inside the frogfish's mouth.  
\_\_\_\_\_ Water rushes into the frogfish's mouth.

6. **True or False?** Reptiles must eat daily to avoid getting hungry. (p. 10)

**True**

**False**

## Week 1 Activity Sheet

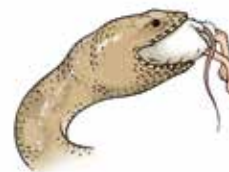
7. What is similar about the way the eyelash viper, snapping turtle, and crocodile all get their food? (pp. 10–11)

- ☐ they all chase down their food
- ☐ they all lurk and wait for food to come
- ☐ they all shop at the same grocery store
- ☐ they all use poison to catch their food

8. How does a snake eat food larger than itself? (p. 11)

---

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9. A chameleon's tongue forms a \_\_\_\_\_ at the end which sticks to its prey. (p. 11)

**Handle**

**Lever**

**Sticker**

**Suction Cup**

10. Circle two body parts that birds use to catch food. (p. 12)



11. Use the word bank to complete the sentences about owls. (p. 13)

**Front**

**Hearing**

**Ears**



Owls have a very strong sense of \_\_\_\_\_. Even though their \_\_\_\_\_ are on the sides of their heads, they face to the \_\_\_\_\_, and dish shapes on their faces help channel sounds.



## Week 1 Activity Sheet

12. Birds use their beaks to collect food. Match the following beaks to the correct function. (pp. 12–13)



**Pelican**

•

- Tear food apart



**Green heron**

•

- Scoop up fish



**Owl**

•

- Spear fish on pointed end

13. Mammals have \_\_\_\_\_ on their bodies and feed their babies \_\_\_\_\_. (p. 14)



14. Match each animal below to its special tool that helps it find food. (pp. 14–15)

**Vampire bat**

•

- Curved claw to dig out bugs.

**Giraffe**

•

- Excellent hearing, vision and sense of smell.

**Aye-aye**

•

- Long, sharp front teeth.

**Tiger**

•

- Long tongue.

15. Which is stronger? (Circle the correct answer.) (p. 16) **spider's silk** **steel wire of the same thickness**

16. **True** or **False**? Insects eat both plants and animals. (p. 17)

**True**

**False**



## Week 1 Activity Sheet

17. Match each insect to the picture that describes its type of mouth. (p. 17)



moth



housefly



cicada



beetle



bite, chew, break apart



mop up food



uncurl to suck nectar



suck up juices



# Science E

## Week 2 Schedule

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Date:	Day 1	Day 2	Day 3	Day 4	Day 5
<i>Mysteries and Marvels of Nature</i>	pp. 18–21	pp. 22–25	pp. 26–29		
Activity Sheet Questions	#1–6	#7–10	#11–16		
Optional: Do Together	Built to Swim		Flight of the Monarchs		
<i>Usborne Illustrated Elementary Science Dictionary</i>				pp. 113–115	
<i>BookShark Science E Experiments Book</i>				Is it an Acid or a Base?	
Supplies	<b>We provide (4SK):</b> masking tape, litmus paper (3 red & 3 blue) <b>You provide:</b> 3 small bowls, marker, 4 Tablespoons water, 2 Tablespoons lemon juice, 1 Tablespoon baking soda				
Shopping/Planning List	<b>For next week:</b> scissors, fine-toothed comb (optional)				
Other Notes					

### Day 1

#### ***Mysteries and Marvels of Nature*** | pp. 18–21

Researchers from universities around the world teamed up to study the complicated movements of squids. Squids' jet propulsion is not well understood. By studying their complicated movements, researchers are learning about ways to maneuver robots and vehicles in an underwater environment.

A tracking device called the Integrated Tracking of Aquatic Organisms (ITAG) is being used by researchers to track squid and jellyfish that can be difficult to monitor in their environment. They are trying to learn where squid move and why. The tracker measures a list of factors

related to the squid's movement, habitat, and health. It isn't exactly a Squid Fitbit™, but it does have some similar features! [p. 21]

#### **Activity Sheet Questions** | #1–6

#### **Optional: Do Together** | Built to Swim

Today's activity is the perfect activity to do in a pool. So if you get a chance, grab the children and take them to a local pool for a swim. If you can't make it to the pool, a dip in the bathtub will suffice.

 Special Note to Mom or Dad



# Notes

## Week 2

Discuss with your students the specific features of fish and other ocean dwellers that enable them to move about quickly in the water. Compare these features to human beings. Are our arms and legs built mainly for land or water? Why?

What kinds of things can we as humans do to move more quickly in the water? Do some Internet research on competitive swimming if your students are interested. Some ideas: reduce friction by wearing streamlined swimsuits, wear flippers, etc.

### Day 2

#### ***Mysteries and Marvels of Nature*** | pp. 22–25

The design of the gecko has inspired scientists from Stanford University to develop adhesives that mimic the gecko's ability to stick to surfaces. NASA placed these adhesives on Astrobee robots which help astronauts complete tasks aboard the International Space Station! Previously, the robots had limited ability to grasp objects and move them. Scientists in Stanford's labs worked to solve this problem by making adhesives that would stick to objects as well as geckos can. Their research continues with more projects. [p. 23]

#### **Activity Sheet Questions** | #7–10

### Day 3

#### ***Mysteries and Marvels of Nature*** | pp. 26–29

The authors mention "a primitive wing design" in reference to dragonflies. This is because, unlike most other winged creatures, dragonflies lack the ability to fold their wings back over their bodies. They can, however, operate each wing independently, making the dragonfly capable of maneuvers that would put most man-made aircraft to shame.

#### **Activity Sheet Questions** | #11–16

#### **Optional: Do Together** | Flight of the Monarchs

Take some time today to explore with your students the amazing phenomenon that is the migration of the monarch butterfly. A quick Internet search will reveal a multitude of resources to check out.

If your students could migrate from place to place from time to time, where would they go? Why? If it were up to me, I think I'd spend winter in Florida, springtime in the Virginia mountains, summer in the Colorado Rockies, and fall in Southern Indiana. What about you?

### Day 4

#### ***Usborne Illustrated Elementary Science Dictionary*** | pp. 113–115

#### ***BookShark Science E Experiments Book*** | Is it an Acid or a Base? ■

## Week 2 Activity Sheet

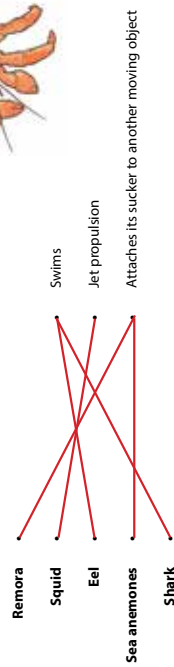
### Mysteries and Marvels of Nature

- Match each term to the correct definition. (p. 18)  
 heliotropism ~~plant movements~~  
 tropism ~~when a plant follows the Sun's movement~~
- Circle the ways seeds move. (p. 18)  
 on the wind    on bicycles    on animal fur    by train
- Critical Thinking:** Why is it important for seeds to travel? (pp. 18–19)  
*(plants survive better if they don't compete with their parent for light, water and nutrients)*

- Why do some sea creatures hitchhike? (Circle all that apply.) (p. 20)  
 To get host's leftovers    To connect with females    To visit other countries  
 To have an anchoring spot    To sightsee    To meet new neighbors  
 To have food pass by    To travel easily



- Match the sea creature below to the way it moves. (pp. 20–21)



- Which fish below cannot swim backwards? (Circle the correct answer.) (p. 21)

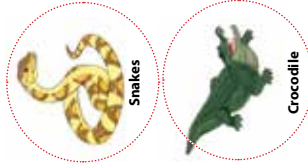
Eel    Parrot fish    Shark

- What feature below helps geckos to jump between trees and to walk on ceilings? (p. 23)

☐ Suction cups    ☒ Tiny hairs    ☐ Sticky slime    ☐ Claws

## Week 2 Activity Sheet

- Circle all the reptiles. (pp. 22–23)



- True or False? All birds fly. (p. 24)

True

False

- What do large birds do to help them take off? (p. 24)

(Run)

- Kangaroos' legs are like ... (Check the box that is true.) (pp. 26–27)

<input checked="" type="checkbox"/> A spring The energy from one jump helps to power the next.	<input type="checkbox"/> An iron Pushes everything into the ground
<input type="checkbox"/> Gasoline Can only run a little while before it runs out.	<input type="checkbox"/> Electricity With increased voltage can go faster

## Week 2 Activity Sheet

12. A cheetah's flexible \_\_\_\_\_ helps it to run at high speeds. (Circle the correct answer.) (p. 27)

legs spine tail head

13. How many legs do all insects have? (Circle the correct answer.) (p. 29)

2 4 6 8



14. How many pairs of wings do most insects have? (Circle the correct answer.) (p. 29)

2 4 6 8

15. Place an "X" in the boxes that describe how most insects move. (p. 29)

<input type="checkbox"/> driving	<input checked="" type="checkbox"/> flying	<input checked="" type="checkbox"/> crawling
<input type="checkbox"/> galloping	<input type="checkbox"/> skipping	<input type="checkbox"/> slithering



16. Name two small creatures that can leap great distances. (pp. 28-29)

1. *(possible: jumping spiders)* 2. *(grasshoppers)*

## Week 2 Activity Sheet

### Mysteries and Marvels of Nature

1. Match each term to the correct definition. (p. 18)

heliotropism	•	•	plant movements
tropism	•	•	when a plant follows the Sun's movement

2. Circle the ways seeds move. (p. 18)

on the wind      on bicycles      on animal fur      by train



3. **Critical Thinking:** Why is it important for seeds to travel? (pp. 18–19)

4. Why do some sea creatures hitchhike? (Circle all that apply.) (p. 20)

To get host's leftovers	To connect with females	To visit other countries
To have an anchoring spot	To sightsee	To meet new neighbors
To have food pass by	To travel easily	

5. Match the sea creature below to the way it moves. (pp. 20–21)

Remora	•	
Squid	•	• Swims
Eel	•	• Jet propulsion
Sea anemones	•	• Attaches its sucker to another moving object
Shark	•	



6. Which fish below cannot swim backwards? (Circle the correct answer.) (p. 21)

Eel      Parrot fish      Shark

7. What feature below helps geckos to jump between trees and to walk on ceilings? (p. 23)

☐ Suction cups      ☐ Tiny hairs      ☐ Sticky slime      ☐ Claws

## Week 2 Activity Sheet

8. Circle all the reptiles. (pp. 22–23)



**Snakes**



**Bats**



**Snails**



**Turtles**



**Crocodile**



**Lizards**



**Spiders**



**Chameleons**

9. **True** or **False**? All birds fly. (p. 24)

**True**

**False**

10. What do large birds do to help them take off? (p. 24)

\_\_\_\_\_



11. Kangaroos' legs are like ... (Check the box that is true.) (pp. 26–27)


☐

**A spring**

The energy from one jump helps to power the next.


☐

**An iron**

Pushes everything into the ground


☐

**Gasoline**

Can only run a little while before it runs out.


☐

**Electricity**

With increased voltage can go faster



## Week 2 Activity Sheet

12. A cheetah's flexible \_\_\_\_\_ helps it to run at high speeds. (Circle the correct answer.) (p. 27)

**legs**

**spine**

**tail**

**head**

13. How many legs do all insects have? (Circle the correct answer.) (p. 29)

**2**

**4**

**6**

**8**



14. How many pairs of wings do most insects have? (Circle the correct answer.) (p. 29)

**2**

**4**

**6**

**8**

15. Place an "X" in the boxes that describe how most insects move. (p. 29)

☐

driving

☐

flying

☐

crawling

☐

galloping

☐

skipping

☐

slithering

16. Name two small creatures that can leap great distances. (pp. 28–29)



1. \_\_\_\_\_ 2. \_\_\_\_\_

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# Science E

## Week 3 Schedule

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Date:	Day 1	Day 2	Day 3	Day 4	Day 5
<i>Mysteries and Marvels of Nature</i>	pp. 30–33	pp. 34–37	pp. 38–41		
<b>Activity Sheet Questions</b>	#1–5	#6–12	#13–18		
<b>Optional: Do Together</b>			Let’s Fight!		
<i>Usborne Illustrated Elementary Science Dictionary</i>				pp. 116–117	
<i>BookShark Science E Experiments Book</i>				Do You Smell That?	
<b>Supplies</b>	<b>We provide (4SK):</b> Styrofoam cup, 2 cotton balls, 5” balloon, glue dots, 1 teaspoon glitter, cotton round <b>You provide:</b> scissors, fine-toothed comb (optional)				
<b>Shopping/Planning List</b>	<b>For next week:</b> shoe box with lid (at least 6” wide), pencil, ruler, box cutter or knife, thumb tack or pin, scissors, lighter or match				
<b>Other Notes</b>					

### Day 1

#### **Mysteries and Marvels of Nature** | pp. 30–33

Although this may seem obvious, you may wish to point out to your students that a jellyfish is not really a fish. A jellyfish has no backbone, making it an invertebrate. In fact, a jellyfish doesn't have a skeleton at all. But what about the "jelly" part of its name? It is called that because of a jelly-like substance that is found between the layers of jellyfish skin. [p. 32]


#### **Activity Sheet Question** | #1–5

### Day 2

#### **Mysteries and Marvels of Nature** | pp. 34–37

What are the two kinds of poisonous lizards? The book only lists one—the Gila monster (*Heloderma suspectum*) native to the southwestern United States. The other kind is known as a beaded lizard (*Heloderma horridum*) and is found in Mexico and Guatemala. [p. 35]

#### **Activity Sheet Questions** | #6–12

 Special Note to Mom or Dad



# Notes

## Week 3

### Day 3

***Mysteries and Marvels of Nature*** | pp. 38–41

**Activity Sheet Questions** | #13–18

**Optional: Do Together** | Let's Fight!

Most students find it fascinating to study the peculiar defense mechanisms that many animals possess. Who wouldn't be intrigued by the poisonous spurs of the duck-billed platypus? Or the vicious tusks of the Arctic walrus?

But what about us humans? Do we have any special defense mechanisms? We don't mean guns and knives either! Ask your students to brainstorm about what they might use to defend themselves in the wild.

After they've thought about it for a while, challenge them to either (1) write a short story, (2) draw a picture, or (3) give a brief oral report that highlights at least two human defense mechanisms. Some candidates: teeth, hands (fists), fingers (nails, claws!), feet (kicking), etc.

### Day 4

***Usborne Illustrated Elementary Science Dictionary*** | pp. 116–117

***BookShark Science E Experiments Book*** | Do You Smell That? ■

## Week 3 Activity Sheet

### Mysteries and Marvels of Nature

1. What are four ways plants protect themselves? Use the pictures to help you. (pp. 30–31)



(spines)



(poison)



(poison comes from roots)



(thorns)

2. Why don't giraffes have to compete with other animals for acacias as a source of food? (p. 30)

- ☒ only giraffes have tough enough mouths  
☐ only giraffes can stand the smell  
☐ only giraffes can reach that high  
☐ only giraffes like the taste

3. Draw a line to connect each word to the correct definition. (pp. 30–31)

- |               |   |
|---------------|---|
| creosote bush | <del>small spines on the prickly pear cactus that break off easily</del>        |
| glochids      | <del>waxy leaves help them to not lose too much water</del>                     |
| acacia        | <del>the most poisonous mushroom in the world that happens to look edible</del> |
| death cap     | has two types of thorns to protect the plant from different animals             |

4. Why do some birds build their nests inside cacti stems? (p. 31)

(because the spines provide protection from predators)



5. True or False? Poisonous sea creatures don't hurt people. (p. 32)

True

6. A snake's poison is called \_\_\_\_\_ (p. 34)

(venom)



## Week 3 Activity Sheet

7. What body part makes a poison dart frog poisonous? (p. 34)

- ☒ Their skin  
☐ Their feet

- ☐ The little darts they carry  
☐ Their tongue



8. How do the strawberry poison dart frogs warn others that they're dangerous? (Circle the correct answer.) (p. 34)

Bright colors

Act aggressively

Make a shrill noise

9. Name two ways snakes kill their prey. (pp. 34–35)

(Use muscles to crush and suffocate.)

(Use venom to stun and poison.)

10. What two types of territories do birds fight over? (p. 36)

1) (Breeding territories)

2) (Feeding territories)



11. Critical Thinking: Why do you think birds defend these territories?

(To breed successfully, birds need a safe place to build their nests, freedom from disturbances, and a good supply of food.)

12. Circle the ways birds keep others away from their territory. (pp. 36–37)



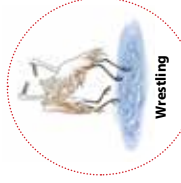
Tapping



Eating all the food



Singing



Wrestling



Bringing them flowers



Bribing them with fish

Week 3 Activity Sheet







13. How do many mammals impress their mates? (Circle the correct answer.) (p. 38)

A) By fighting with each other

B) By their plumage

C) By their smell







14. Match each animal below with the "weapon" it uses to win a mate or territory. (pp. 38–39)

		
Walrus	Moose	Platypus
		
Spur	Tusks	Antlers

15. Critical Thinking: Circle the correct answer to complete the sentences. (p. 39)

Antlers or Horns are shed each year and regrown. (Hint: a bull moose has these!)

Antlers or Horns are permanent.

16. What causes the loud bang when a bombardier beetle sprays an attacker? (p. 40)

When the two chemicals the beetle sprays react with each other they make a loud noise and generate heat.

Week 3 Activity Sheet

17. A beetle uses its antennae to sense its surroundings by (p. 40)

touch and smell

18. Check ways other animals have learned to get around the beetle's spray defense. (p. 41)

☒

eat the insect before it can spray

☐

use an umbrella

☒

push the dangerous end into the ground

☐

jump out of the way of the spray

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5. **True or False?** Poisonous sea creatures don't hurt people. (p. 32)

**True**

**False**

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The little darts they carry

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**Bright colors**

**Act aggressively**

**Make a shrill noise**

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1) \_\_\_\_\_

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11. **Critical Thinking:** Why do you think birds defend these territories?

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\_\_\_\_\_

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**Tapping**



**Eating all the food**



**Wrestling**



**Bribing them with fish**



**Singing**



**Bringing them flowers**



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A) **By fighting with each other**

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14. Match each animal below with the “weapon” it uses to win a mate or territory: (pp. 38–39)



**Walrus** •

• **Spur**



**Moose** •

• **Tusks**



**Platypus** •

• **Antlers**



15. **Critical Thinking:** Circle the correct answer to complete the sentences. (p. 39)

**Antlers** or **Horns** are shed each year and regrown. (**Hint:** a bull moose has these!)

**Antlers** or **Horns** are permanent.



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\_\_\_\_\_ and \_\_\_\_\_.



18. Check ways other animals have learned to get around the beetle's spray defense. (p. 41)

☐

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☐

push the dangerous end into the ground

☐

use an umbrella

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## Science E—Weekly Subject List

Week	Subject	Skills
1	How plants and animals eat; Plant and animal traits	Planning and Carrying Out Investigations; Analyzing and Interpreting Data
2	How plants and animals move; Plant and animal traits	Planning and Carrying Out Investigations; Asking Questions and Defining Problems
3	How plants and animals protect themselves; Plant and animal traits	Developing and Using Models; Engaging in Argument from Evidence
4	How plants and animals disguise themselves; Plant and animal traits	Asking Questions and Defining Problems; Developing and Using Models
5	Symbiotic relationships found in nature	Planning and Carrying Out Investigations; Engaging in Argument from Evidence
6	Intro to ecosystems; Animal communication	Developing and Using Models; Engaging in Argument from Evidence
7	Plant and animal reproduction; Intro to the life cycle	Planning and Carrying Out Investigations; Asking Questions and Defining Problems
8	Parasitic relationships; Animal homes	Constructing Explanations and Designing Solutions; Obtaining, Evaluating, and Communicating Information
9	How plants and animals survive in harsh climates; Plant and animal traits	Asking Questions and Defining Problems; Engaging in Argument from Evidence
10	Plant traits; Reptiles; Amphibians; Mammals; Birds; Animal traits; Animal sight; Animal survival tactics	Planning and Carrying Out Investigations; Analyzing and Interpreting Data
11	Introduction to computer coding	Constructing Explanations and Designing Solutions; Planning and Carrying Out Investigations
12	Introduction to computer coding; Earth's place in the solar system	Developing and Using Models; Engaging in Argument from Evidence
13	Seasons; Heat from the Sun; Earth's layers; Different rocks on the Earth's crust	Developing and Using Models; Analyzing and Interpreting Data
14	Fossil fuels found in the Earth's crust; Introduction to volcanoes	Developing and Using Models; Obtaining, Evaluating, and Communicating Information
15	Introduction to earthquakes; The atmosphere around the Earth	Asking Questions and Defining Problems; Developing and Using Models
16	Atmosphere to support life; Climates	Asking Questions and Defining Problems; Developing and Using Models
17	Tropical desert climate; Mediterranean climate; Temperate zones; Frigid zones; The affect of mountains on climate	Planning and Carrying Out Investigations; Analyzing and Interpreting Data
18	Introduction to weather	Planning and Carrying Out Investigations; Engaging in Argument from Evidence
19	How to measure and predict weather; How plants and animals eat; Intro to ecosystems	Constructing Explanations and Designing Solutions; Developing and Using Models
20	Population growth; Food production; Weathering	Constructing Explanations and Designing Solutions; Developing and Using Models
21	The affects of water on the formation of Earth and the lives of plant and animals	Developing and Using Models; Analyzing and Interpreting Data
22	The affects of the ocean on land; Introduction to oceans; What makes up a living organism	Planning and Carrying Out Investigations; Developing and Using Models
23	Parts of a plant; Different types of animals; Parts of an animal	Developing and Using Models; Engaging in Argument from Evidence

Week	Subject	Skills
24	Animal movement; Animal senses; How and what animals eat; Digestion and healthy eating; Circulatory system	Developing and Using Models; Engaging in Argument from Evidence
25	Eating and exercising for health; Reproduction; Life cycle; Micro-organisms; Food chain; Ecosystems	Asking Questions and Defining Problems; Analyzing and Interpreting Data
26	Introduction to materials; Characteristics of materials; Uses for materials	Developing and Using Models; Obtaining, Evaluating, and Communicating Information
27	States of matter; Materials and electricity; Materials and water; Earth's atmosphere; Mixing and separating matter; Changing matter	Planning and Carrying Out Investigations; Engaging in Argument from Evidence
28	Introduction to forces; Gravity; Friction; Pressure; Magnetic forces; Elasticity; Buoyancy and density	Asking Questions and Defining Problems; Engaging in Argument from Evidence
29	Simple machines; Types of energy; Kinetic and potential energy; Temperature as energy	Planning and Carrying Out Investigations; Analyzing and Interpreting Data
30	Thermal energy moving; Used energy; Fires; Practical energy uses; Fossil fuels; Energy in the human body	Constructing Explanations and Designing Solutions; Asking Questions and Defining Problems
31	Energy and the human body; The sun and the energy that it produces; How energy is made and used	Planning and Carrying Out Investigations; Engaging in Argument from Evidence
32	Nuclear energy; Solar energy; Geothermal energy; Wind and water energy; Biomass energy; Electricity	Planning and Carrying Out Investigations; Analyzing and Interpreting Data
33	Power plants; Fuels; Utilities; Electricity	Asking Questions and Defining Problems; Engaging in Argument from Evidence
34	Introduction to light; Heat as energy; Introduction to sound; Introduction to waves	Planning and Carrying Out Investigations; Asking Questions and Defining Problems
35	Types and characteristics of waves	Engaging in Argument from Evidence; Analyzing and Interpreting Data
36	More characteristics of waves; Inventions using waves; Hedy Lamarr; Famous scientists	Asking Questions and Defining Problems; Analyzing and Interpreting Data

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