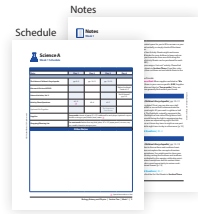


# Instructor's Guide Quick Start

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 students 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.



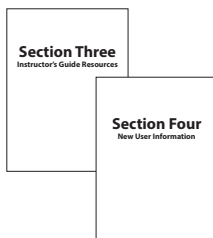
## 4-Day Schedule

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. **Notes** in pink indicate information a parent or teacher should read before beginning the lesson.

**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]

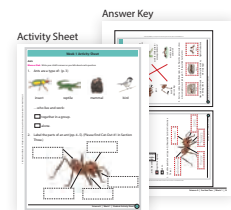


## Instructor's Guide Resources and New User Information

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.			
<b>Other Notes</b>				


N Special Note to Mom or Dad  
 Biology, Botany, and Physics | Section Two | Week 1 | 1



# Science A

## Week 1 Schedule

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Date:	Day 1	Day 2	Day 3	Day 4	Day 5
<b>Weather</b>	pp. 3–5	pp. 6–7	pp. 8–9		
<b>Activity Sheet Questions</b>	#1	#2–3	#4		
<b>BookShark Science A Experiments Book</b>				#1 How do Clouds Form? & Weather Journal Part 1	
<b>Optional: Do Together</b>		Water Cycle in a Bag			
<b>Supplies</b>	<p><b>We provide: Supplies Kit</b>— No supplies provided this week.  <b>Paper Packet</b>— Weather Journal (includes Daily Observations, Weather Graph, and Temperature Graph)  <b>You Provide:</b> glass jar with a lid, boiling water, ice, hair spray (or a match), jar lid or paper plate, something to create a dark or black backdrop behind the jar to help you observe clouds forming. </p>				
<b>Shopping/Planning List</b>	<p><b>For next week:</b> cooked oatmeal or cooked cereal at 3 different temperatures, ice, water, hot water or tea, freezer, stove, bed, car, empty lightweight plastic bottle with a lid, 2 bowls a little bigger than the plastic bottle.</p>				

### Other Notes

 Special Note to Teachers



### Day 1

#### **Weather** | pp. 3–5

It's an exaggeration to state, as the book does, that "Every kind of weather is happening somewhere in the world right now." In a broad sense this is true, in that there is sun, rain, wind, and snow, but in a more specific sense this is not true, as, for example, hurricanes aren't always occurring. Just make sure your children get the bigger picture—different kinds of weather happen regularly in the world. Even though it may be a sunny day where you and your children live, across the world, someone else may be experiencing very different weather. [p. 3]

How do we know what Earth looks like? Up until the time of rockets, spaceships, and satellites, we didn't know, but we could guess. Nowadays, we have photographs of Earth taken from space, so we know what it looks like. Doesn't it look wonderful? [p. 5]

#### **Activity Sheet Question** | #1

**Note:** Throughout the year, you will see some Activity Sheet questions marked as **Challenge** or as **Critical Thinking**. These are questions whose answers are not necessarily in the book. While we believe the material covered in the challenge questions is worthwhile for your children to know, it may not be specifically explained in their reading assignment. As always, if you think any question is too difficult for your children, please feel free to skip.

For **Challenge** questions, you and your student will need to complete outside research to answer the question. If you choose to do your research online, please review "Tips When Using the Internet" found in **Section Four** of our guide for precautions on surfing the web.

For **Critical Thinking** questions, the answer may be inspired by information that you learned that day or may be a statement of opinion. Encourage your student to take some time to write their best answer.

#### **Supplies** | You Provide

**Note to Teachers:** When supplies are listed as "**We provide:**", find them in your course-specific (**KSKB**) Science A Supplies Kit or (**ASKP**) Science A Experiments Paper Packet. When supplies are listed as "**You provide:**", they are materials you can generally find around your home.

### Day 2

#### **Weather** | pp. 6–7

#### **Activity Sheet Question** | #2-3

#### **Optional: Do Together** | Water Cycle in a Bag

The water cycle may be a bit difficult to comprehend, because we can only see half of it. Let's explore how water cycles through our atmosphere through a smaller model where we can see water change from one form to another.

##### Activity

Today you will put water into a plastic sandwich bag then tape it to a window to see how sunlight helps water keep going through the water cycle.

##### What You'll Need

- A zip-top sandwich-size plastic bag.
  - 1 cup of water.
  - Window-safe tape such as masking or painter's tape.
  - Permanent marker. (Adult use only.)
  - Optional: blue food coloring.
1. Add 1 cup of water and a few drops of food coloring into the plastic bag. Close the bag tightly.
  2. Tape the bag to a sunny window, where the students can easily observe it.
  3. Have an adult use the marker to draw a line where the water ends. This water represents the ocean.
  4. Check the bag periodically throughout the day.

As the Sun warms the water up, notice tiny water droplets forming near the top of the bag. This is water vapor getting stuck to the plastic. As more and more water vapor evaporates and sticks to the plastic, it will turn into larger droplets. When a droplet gets large enough, it drips or "rains" back into the ocean.

##### Bonus

Use the marker to draw clouds and rain on the bag where you see the water vapor collect and drip.



## Day 3

**Weather** | pp. 8–9

In addition to the four types of clouds listed on these pages, *Weather* also mentions a lenticular cloud on page 26.

**Activity Sheet Question** | #4

## Day 4

**BookShark Science A Experiments Book** | #1 How do Clouds Form? & Weather Journal Part 1 ■

### Week 1 Activity Sheet

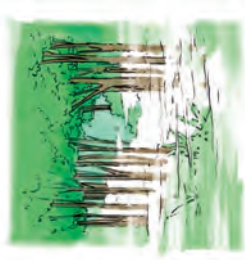
4. Fog is like \_\_\_\_\_ that is close to the ground. Circle one. (p. 9)

a tree

a breeze

rain

a cloud

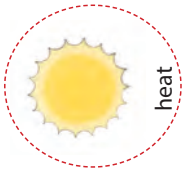


### Week 1 Activity Sheet

#### Weather

Teachers: Write your students' answers as you talk about each question.

1. What three things cause weather? Circle them. (p. 4)



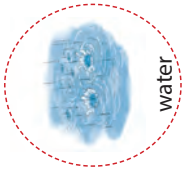
heat



clouds



air



water

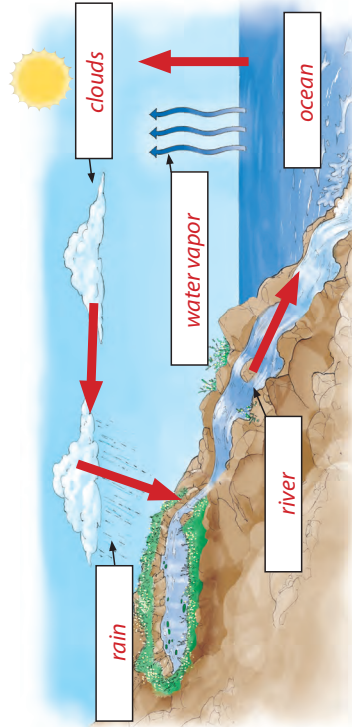
2. Circle the correct answer. **True** or **False**: You can always see water. (p. 6)

True

False

3. Label the parts of the water cycle using the words in the box below. Then draw arrows to show the journey water makes in the water cycle. (pp. 6-7)

water vapor   clouds   ocean   rain   river



# Week 1 Activity Sheet

## Weather

**Teachers:** Write your students' answers as you talk about each question.

1. What three things cause weather? Circle them. (p. 4)



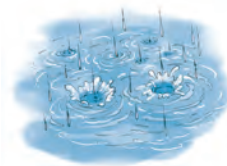
heat



clouds



air



water

2. Circle the correct answer. **True** or **False**: You can always see water. (p. 6)

3. Label the parts of the water cycle using the words in the box below. Then draw arrows to show the journey water makes in the water cycle. (pp. 6-7)

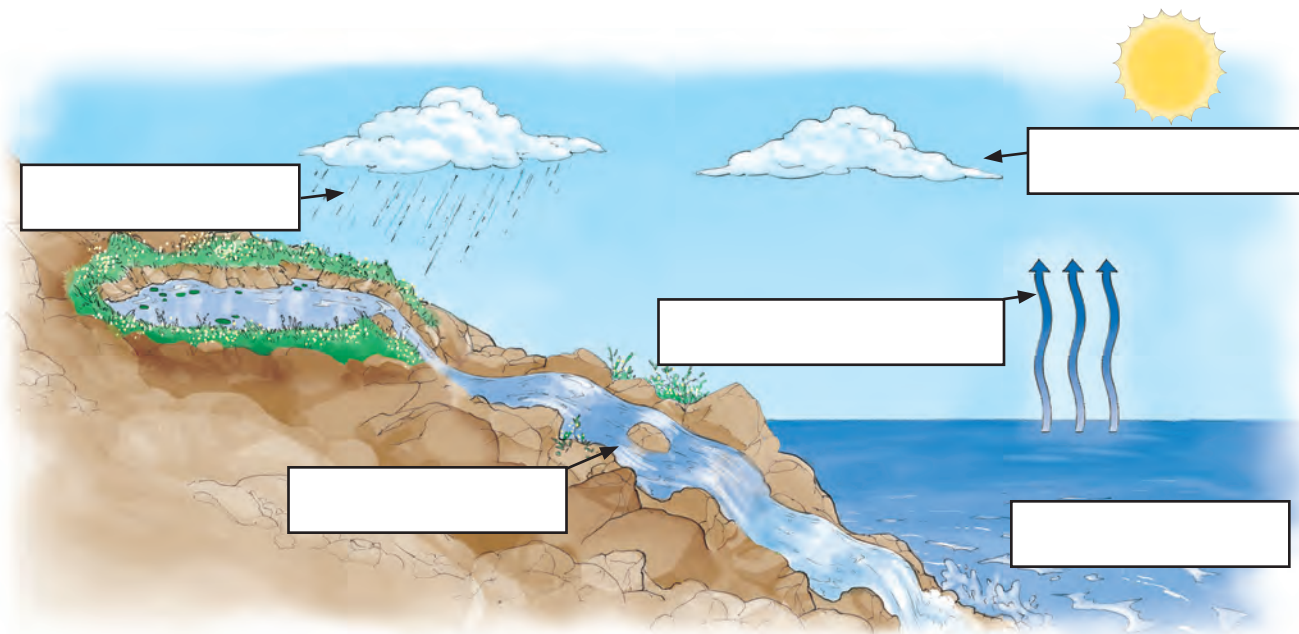
water vapor

clouds

ocean

rain

river



## Week 1 Activity Sheet

4. Fog is like \_\_\_\_\_ that is close to the ground. Circle one. (p. 9)

**a tree**

**a breeze**

**rain**

**a cloud**








# Science A

## Week 2 Schedule

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Date:	Day 1	Day 2	Day 3	Day 4	Day 5
<b>Weather</b>	pp. 10–11	pp. 12–13	pp. 14–15		
<b>Activity Sheet Questions</b>	#1–2	#3–4	#5		
<b>BookShark Science A Experiments Book</b>				#2 How Do You Measure Temperature? 	
<b>Optional: Do Together</b>	Snowflakes		Layers of Hailstone		
<b>Supplies</b>	<b>We provide:</b> KSKB— thermometer. <b>Paper Packet</b> — How Do You Measure Temperature? Experiment Sheet #2 <b>You Provide:</b> cooked oatmeal or cooked cereal at 3 different temperatures, ice, water, hot water or tea, freezer, stove, bed, car, empty lightweight plastic bottle with a lid, 2 bowls a little bigger than the plastic bottle.				
<b>Shopping/Planning List</b>	<b>For next week:</b> scissors, 2 wooden pencils, at least one with an attached eraser, hairdryer (optional).				

### Other Notes

 Special Note to Teachers



### Day 1

#### **Weather** | pp. 10–11

While most snowflakes have six points or sides (forming a hexagon), they are unique. Granted, there is no way for people to compare every snowflake that has ever fallen or even will fall. So why do people say they are all different? It's a mathematical guess. Even though there are only a few parts that go into a snowflake—the dust particle at the center, the amount of water in the air, and the temperature—there are so many possibilities that it is highly unlikely that any snowflakes will match.

#### **Activity Sheet Questions** | #1–2

#### **Optional: Do Together** | Snowflakes

Have you ever seen real snow before? It really is amazing. Our book tells us that every snowflake is unique and most have six points.

#### Activity

Today we are going to create our own snowflakes out of paper. Let's see if we can make one that will have six points like most real snowflakes.

#### What You'll Need

- Paper (directions will be given specifically for an 8.5 by 11 piece of paper)
- Kid safe scissors (or with the help of an adult, sharper scissors)

The trick to making your own six pointed snowflakes is how you fold the paper.

1. Take two corners that are opposite of each other and put them together. Fold the paper in half naturally keeping the opposite corners together.
2. With the fold near your belly button take the corner on either side and fold it past the two corners that are at the top. There should be about an inch of space on the edge of the paper between where the original two corners are and where your third corner is going.
3. Fold the last corner over the top so that there is a point where all three of your folds intersect near your belly button.

4. You may choose to fold your paper in half one more time so that the fold will intersect the point near your belly button. You should have only two edges of folds and one point where all those folds come together. You may also choose to start by cutting a straight cut from fold edge to fold edge at the top of your snowflake.
5. We recommend using different triangle cuts along the folds of your paper and along the wider top of the paper. Cutting off the tip where all your folds intersect at an angle will also create a cool shape. To help get six unique points, cut more along the edge that you will see as a single fold rather than the edge where you see multiple fold edges.
6. When you are done cutting shapes, unfold your paper completely.

#### Bonus

Can you find the six points of your snowflake? What else do you notice about your snowflake? How does your snowflake compare to the pictures of snowflakes in the book?

### Day 2

#### **Weather** | pp. 12–13

Lightning is very powerful. But, it exists for a very brief time. And this is why it does not make much sense to try to harness the power of lightning for electricity. While we may still find uses for it in the future, right now it is a bit like trying to use the power of jumping off a tall building to make it to the store. While it is true that gravity will pull you toward the ground with enough force to kill you when you get to the bottom, it's not an efficient way to try to get places. Worse, lightning does not provide enough power to visit someone across town, let alone, the country.

#### **Activity Sheet Questions** | #3–4

### Day 3

#### **Weather** | pp. 14–15

Let your children know that hail is sometimes dangerous. If hailstones are big enough, they can cause damage to cars, homes, and other things. If you live in an area where you might get hail, make sure your children know to be careful around it.



According to *National Geographic News* (August 4, 2003), the largest hailstone on record in the U.S., as noted briefly in the book, was seven inches in diameter with an 18.75-inch circumference, or, “almost as large as a soccer ball.”<sup>1</sup> That’s a big piece of ice! The hailstone is frozen and is kept at the National Center for Atmospheric Research in Boulder, Colorado, which isn’t too far from BookShark’s office in Littleton.

### Activity Sheet Question | #5

#### Optional: Do Together | Layers of Hailstone

Our book compares a hailstone to an onion in the way that it forms layers.

#### Activity

Today, let’s look a bit closer at the layers of an onion.

#### What You’ll Need

- An Onion
- A Knife and Cutting Board

Adult, please cut an onion in half and use it to talk to your children about the different layers.

When an onion grows, it creates one layer and then another layer and then another layer. This is just like a hailstone. One tiny little water droplet freezes. As it is still in the cloud, other bits of water will land on it and then freeze creating a new layer of ice over the small frozen bit of water. The more time the hailstone stays in a cloud before falling to earth, the bigger it will get, adding moisture that freezes quickly over and over again.

To get a better idea of this, you can cut the onion again parallel to the first cut creating rings of onions. Break them apart and then start with the smallest layer. One at a time put more layers back around the smaller layers to create a bigger onion.

There is one important difference between a hailstone and an onion. When onions grow, their new layers actually grow on the inside, unlike a hailstone that gets new layers of ice on the outside.

#### Bonus

Where else do we see layers in nature? Trees have rings that we use to tell the age of the tree. These are really just layers like the onion and the hailstone.

In what other places do we layer things? With clothing, we tend to dress with layers. We will first put on socks before we put on shoes. Or we will put a coat over whatever other clothes we are choosing to wear. On our beds, we first put down the sheets and then a blanket or comforter on top of that. Some cakes are made with layers with a layer of frosting between two or more layers of the cake itself. We do this with other food items as well.

### Day 4

#### BookShark Science A Experiments Book | #2 How Do You Measure Temperature?

**Note to Teachers:** Please thoroughly clean your thermometer before testing the temperature of food. Prepare the oatmeal the evening before and store it in the fridge. Just before the experiment, remove two-thirds of it and divide it into two containers. Heat the two containers for different amounts of time in the microwave to make a “warm” bowl and a “hot” bowl. Additionally, prepare cups of hot water or tea, room-temperature tap water, and ice water. ■

1. [http://news.nationalgeographic.com/news/2003/08/0804\\_030804\\_largesthailstone.html](http://news.nationalgeographic.com/news/2003/08/0804_030804_largesthailstone.html). Accessed June 2008.

## Week 2 Activity Sheet

### Weather

1. How many points do snowflakes have?

Count them. (p. 10) 6



2. Circle the correct words in to finish the sentence (p. 11).

Icicles form when snow on a roof melts in the **warm** / **cool**

sunshine and freezes when it drips into the **warm** / **cool**

shade underneath.

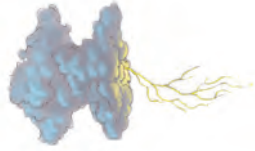


3. Thunder occurs when... (p. 13)

lightning strikes something large

lightning heats the air around it

lightning gets angry



## Week 2 Activity Sheet

4. Why do you see lightning before you hear its thunder? (p. 13)



(because light travels more quickly than sound)

5. Which picture best shows the motion of how hail stones are formed in a cloud? Circle one. (p. 14)



by squeezing



by pulling



by floating



by tumbling

## Week 2 Activity Sheet

### Weather

1. How many points do snowflakes have?

Count them. (p. 10) \_\_\_\_\_



2. Circle the correct words in to finish the sentence (p. 11).

Icicles form when snow on a roof melts in the **warm / cool**

sunshine and freezes when it drips into the **warm / cool**

shade underneath.

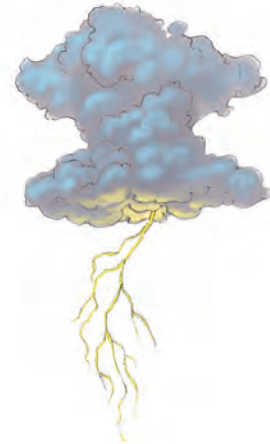


3. Thunder occurs when... (p. 13)

lightning strikes something large

lightning heats the air around it

lightning gets angry



## Week 2 Activity Sheet

4. Why do you see lightning before you hear its thunder? (p. 13)



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5. Which picture best shows the motion of how hail stones are formed in a cloud? Circle one. (p. 14)



by squeezing



by pulling



by floating



by tumbling



# Science A

## Week 3 Schedule

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Date:	Day 1	Day 2	Day 3	Day 4	Day 5
<b>Weather</b>	pp. 16–17	pp. 18–19	pp. 20–21		
<b>Activity Sheet Questions</b>	#1	#2	#3		
<b>BookShark Science A Experiments Book</b>				#3 Can You Catch the Wind?	
<b>Optional: Do Together</b>		Air Pickup			
<b>Supplies</b>	<b>We provide: KSKB</b> — push pin with a ball on the end, 12 inches of ribbon. <b>Paper Packet</b> — Pinwheel Template, Can You Catch the Wind? Experiment Sheet #3 <b>You Provide:</b> scissors, 2 wooden pencils, at least one with an attached eraser, hairdryer (optional).				
<b>Shopping/Planning List</b>	<b>For next week:</b> sport-top water bottle or spray bottle with water in it, jar or large cup of water, 1/2 cup baking soda and 1/4 tsp water to make Fake Snow, whisk, extra large bowl or plastic box/tub, weather-related clothing samples (optional)—for ideas, see Which Clothes Are Best? on the Experiment Sheet.				

### Other Notes

 Special Note to Teachers



### Day 1

**Weather** | pp. 16–17

The book notes, “Ancient Greeks believed that the wind was the breath of the Gods.” In Greek mythology, several gods are associated with wind, including Aeolus, Boreas (or Aquilo), Eurus, Favonius (or Zephyrus), and Notus (or Auster).

**Activity Sheet Question** | #1

### Day 2

**Weather** | pp. 18–19

We are still learning what makes a tornado, but several factors are needed, including a storm, a place where warm and cool air meet, and the right amount of moisture in the air. The warm air from the ground rises — we will explore this more later this year — but the wind of the storm causes it to start spinning. Then it spins faster as the spin tightens. You can see this for yourself if you take a spin on a merry-go-round. Have someone push you while you sit on the outer edge. Then scoot inside when they stop. You will speed up!

**Activity Sheet Question** | #2

**Optional: Do Together** | Air Pickup

We learned that tornadoes use air to pick things up, even fish and frogs out of a pond. A tornado does this only by using air, which we see in the form of very strong winds.

Activity

We are going to see if we can use air to move light objects from one place to another.

What You'll Need

- Straw
- Pieces of paper about the size of a playing card

Place a few pieces of paper in one location. This can be done on the ground or a short table that your students can easily access by standing on the ground. Using the straw, pull air into your body near a piece of paper. The pieces of paper should stick to the end of the straw. Then, move to another place while still pulling air in. When you reach another location, simply stop pulling the air into your body and the paper will fall.

Bonus

The book also mentions that a tornado works like a vacuum cleaner. If you have some small food like cereal that will get picked up by your vacuum, put some on the floor and then vacuum them up. If you can then look in the container that stores everything that is taken up by the vacuum, you may find that the pieces of cereal may have damage by the whole process that will more accurately reflect how powerful a tornado actually is. Why do you think we need to take precautions when tornadoes happen? What can we do to stay as safe as possible?

### Day 3

**Weather** | pp. 20–21

Yesterday we talked about how we are still learning about all the complex conditions that make a tornado. But that is just one kind of weather event. There are many more conditions to consider when predicting the weather. All of that information needs to be compared to come up with a guess. As computers get more powerful and we can test our models more, we are only now getting even closer to accurate guessing the weather a week from now.

**Activity Sheet Question** | #3

### Day 4

**BookShark Science A Experiments Book** | #3 Can You Catch the Wind? ■



### Week 3 Activity Sheet

#### Weather

1. Circle the correct words to complete the statement. (p. 16).

Wind is created when **hot** / **cold** air rises and

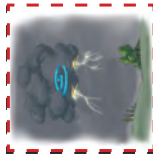
**hot** / **cold** air rushes in to take its place.



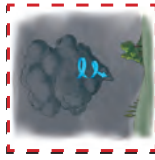
### Week 3 Activity Sheet

2. Place the pictures in order to show how a tornado forms (p. 19).  
(Please find Cut-Out #1 in Section Three of this Guide).

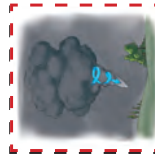
1) The air inside a thunderhead begins to circle.



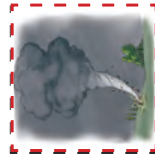
2) The air moves more quickly and the cloud begins to change shape.



3) Warm air is sucked into the cloud and it begins to look like a funnel.

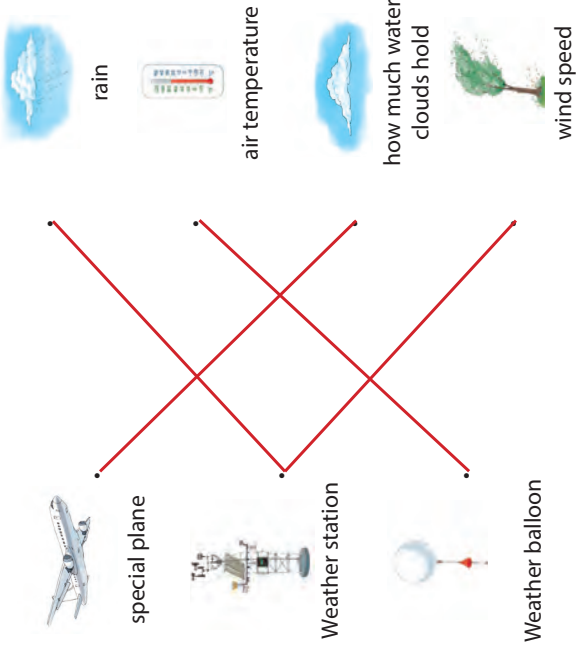


4) As the cloud moves, the tornado destroys anything it touches.



### Week 3 Activity Sheet

3. Draw a line to show the tool scientists use to measure each part of weather (Hint: one tool measures two things). (pp. 20-21)



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## Week 3 Activity Sheet

### Weather

1. Circle the correct words to complete the statement. (p. 16).

Wind is created when **hot / cold** air rises and

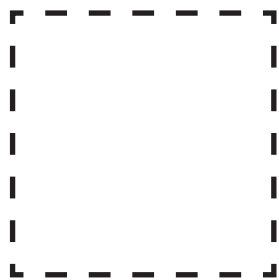
**hot / cold** air rushes in to take its place.



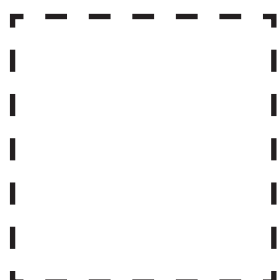
## Week 3 Activity Sheet

2. Place the pictures in order to show how a tornado forms (p. 19).

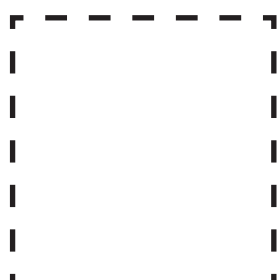
(Please find Cut-Out #1 in Section Three of this Guide).



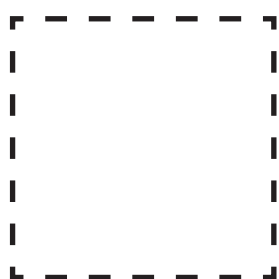
1) The air inside a thunderhead begins to circle.



2) The air moves more quickly and the cloud begins to change shape.



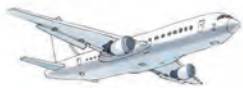
3) Warm air is sucked into the cloud and it begins to look like a funnel.



4) As the cloud moves, the tornado destroys anything it touches.

## Week 3 Activity Sheet

3. Draw a line to show the tool scientists use to measure each part of weather (Hint: one tool measures two things). (pp. 20-21)



special plane



Weather station



Weather balloon



rain



air temperature



how much water  
clouds hold



wind speed

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