



"[The Zula Patrol is] Sesame Street in outer space."

—The New York Times

# Dear Family,

In school, your child has been studying **Sky-High Science**. Inspired by the award-winning public television program *The Zula Patrol*, this program helps your child:

- build important **science, language arts, and math** skills
- observe and track science in the sky

On the next page is a fun and interactive activity to help build these skills at home. We encourage you to do this activity with your child!



## Tune In to *The Zula Patrol*

Check your local listings for the groundbreaking program that has been described as "a space odyssey for kids that blends science education with comic characters" (*Nick Jr. Family Magazine*).

To learn how to contact your local PBS station with questions or feedback about the program, check out [www.pbs.org](http://www.pbs.org).

### Meet the Cast:

#### Bula

The fearless captain who is good at solving problems

#### Zeeter

Smart and talented, she works hard and learns through trial and error

#### Multo

An avid reader who believes in learning through books

#### Gorga

A spirited and loyal space pet who loves to investigate and collect data

#### Wizzy and Wigg

Two high-flying explorers who love learning new vocabulary

Visit [zula.com](http://zula.com) for more great educational activities, games, and lessons.



Bula



Zeeter



Multo



Gorga

#### Wizzy and Wigg





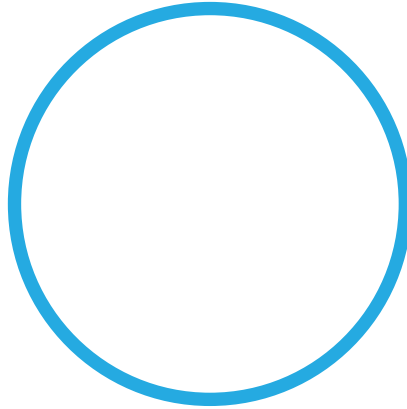
# The Changing Moon



From Earth, we always see the same side of the moon. When we see the moon on different nights, the side that we see appears to change shape. That's because as the moon orbits, or travels around, Earth, the amount of sunlight reflected off the moon's surface changes. So we see different parts of the surface of the moon on different nights depending on how much light is being reflected from the sun. The different parts or shapes of the moon that we see are called *phases*. Complete the following activity to *observe* and *predict* the phases of the changing moon!

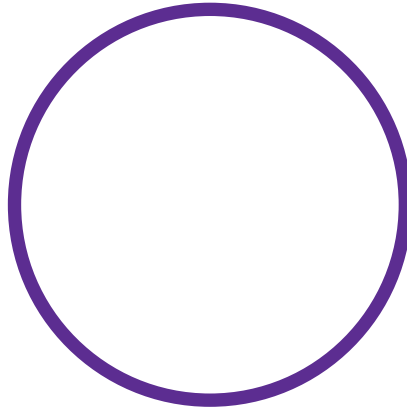
## Step 1: Observe

On a clear night, observe the moon with your child. Guide your child to draw a picture of the moon as it appears.



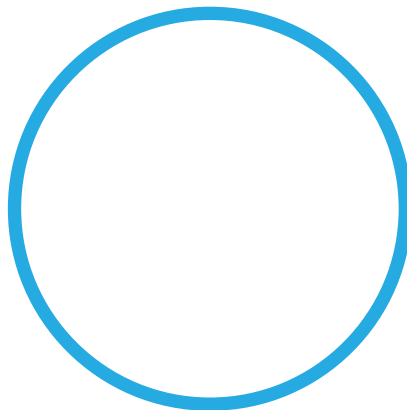
## Step 2: Predict

Look together at the "Moon Phases" chart to the right. Find the phase that looks most like the moon your child drew. Now guide your child to draw how the moon will look in its **next** phase.



## Step 3: Observe (four days later)

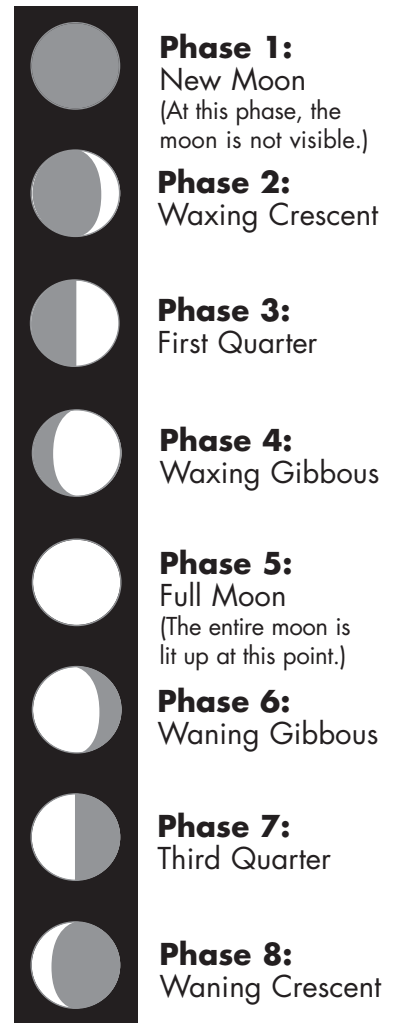
About four days later, draw the moon again. How close is this picture to your prediction in Step 2?

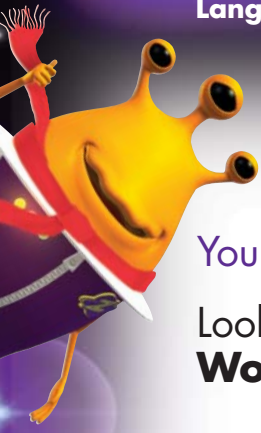


## Step 4:

On separate paper, make a chart to observe and predict the different phases of the moon you see over a month. Every four days, draw a picture of the moon that you see, and then predict what will come next!

## Moon Phases



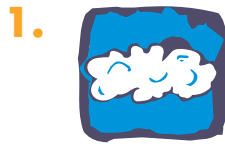


# Sky-High Crossword

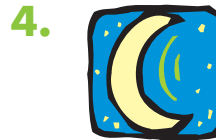
Your Name: \_\_\_\_\_

Look at each picture clue below. Then choose words from the **Word Box** to fill in the crossword puzzle.

## Across

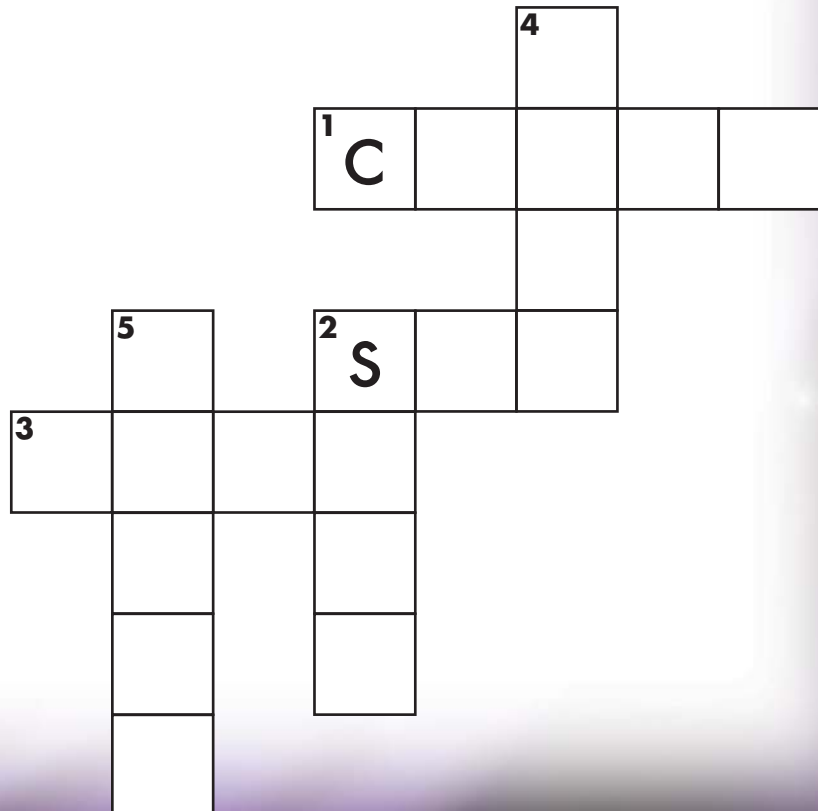


## Down



### Word Box

- cloud
- Earth
- moon
- rain
- snow
- sun





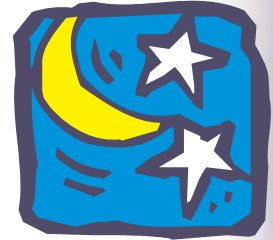
# The Changing Sky

Your Name: \_\_\_\_\_

The **events** in a story take place in a certain order. This is called the **sequence** of the story.

Read the following story and then answer the questions about the order of events.

Tommy and Tammy went on a trip to a cabin with their family. When they arrived, the sky was full of dark clouds. Soon, it started raining. Everyone had to stay inside! But later in the day, the sun came out. Tommy and Tammy went on a great hike in the woods. At night, they ate dinner outside. They looked up at the big, bright moon and the many stars. They both wished that this vacation could last forever!



Circle the word or words that answer each question.

**1. What did Tommy and Tammy first see in the sky?**

rainbows      clouds      sun      snow

**2. What did they see after it stopped raining?**

rainbows      clouds      sun      snow

**3. What activity did they do next?**

biking      swimming      hiking      sleeping

**4. What two things did they see while they ate dinner?**

stars      birds      moon      rain

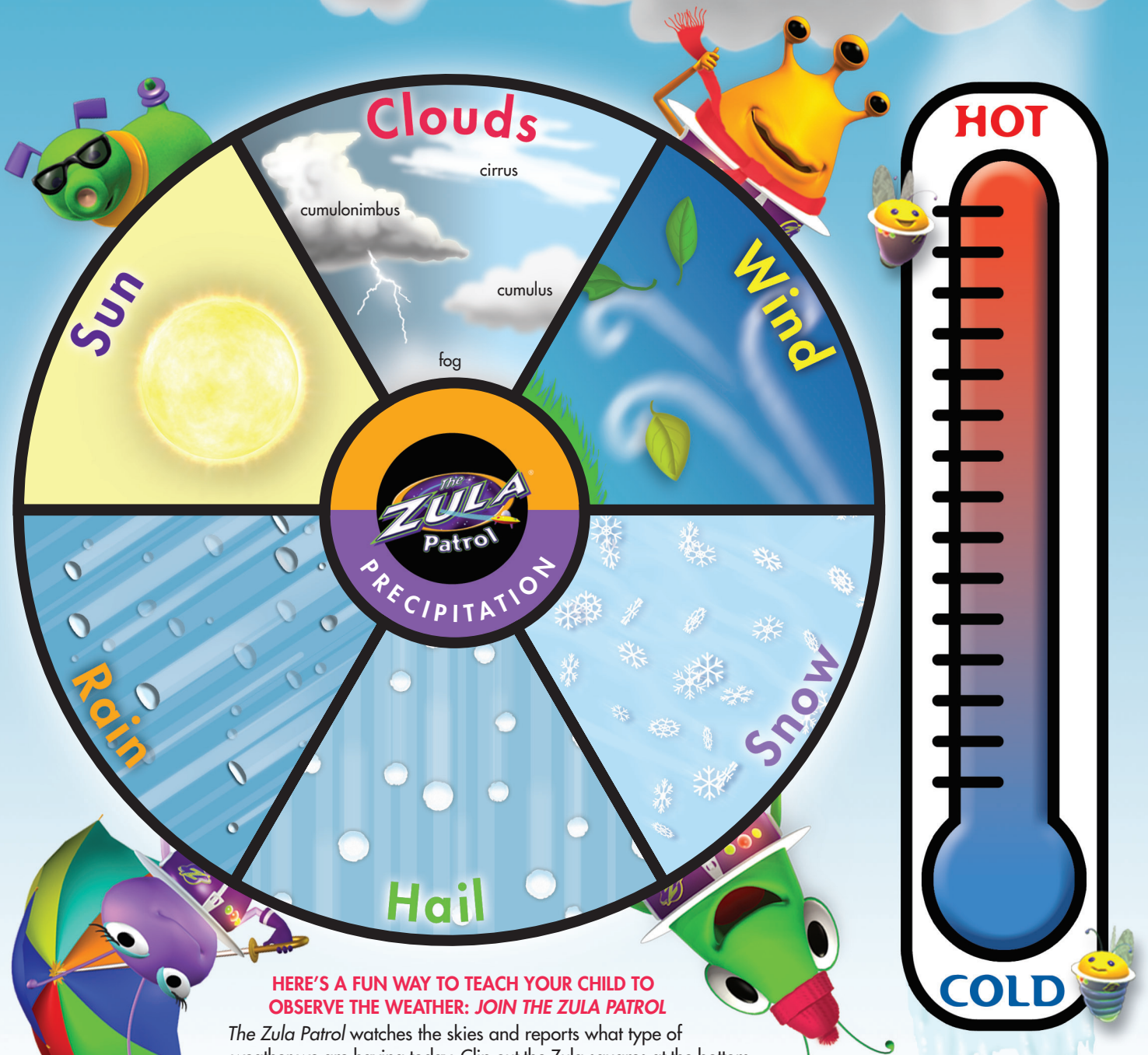


## Now try this!

Think about a favorite time that you had outside in the weather. On a separate piece of paper, write four sentences that describe or tell what happened.



# What's the Weather Today?



**HERE'S A FUN WAY TO TEACH YOUR CHILD TO OBSERVE THE WEATHER: JOIN THE ZULA PATROL**

The Zula Patrol watches the skies and reports what type of weather we are having today. Clip out the Zula squares at the bottom left of this page to use as markers. Ask your child to look up at the sky and observe the weather conditions. Now, using the Weather Wheel, have your child place a marker on the space that best describes today's weather. Be sure to let your child know that more than one description might apply; for instance, it may be Sunny and Windy, or it may be Cloudy with Rain. It may even be Cloudy and Windy with Snow. Point out to your child the conditions shown at the BOTTOM of the Weather Wheel are all PRECIPITATION conditions, meaning that rain or hail or snow is falling from the sky.

Clip out the arrow square (bottom left) to use as marker. Ask your child to tell how the weather feels today. Does it feel hot? Really hot? Or does it feel cold? Really cold? Now, using the thermometer on the right, have your child place the arrow at the point that best describes today's temperature.



[zula.com](http://zula.com)

# More What's the Weather Activities

Try these activities with your little scientist!

## Collect & Measure Rainfall – Make a Rain Gauge

You'll need: rainy day or forecast for rain, tall, clear plastic bottle with flat bottom (e.g., a personal-sized water bottle), sharp scissors, ruler, pencil, and paper or Weather Journal.

1. Look up in the sky and observe. **Ask your child:** What's the weather like today? Is it wet or dry? How much do you think it will rain – a little – a lot? Let's find out by making a tool to measure the rain!
2. Very carefully cut off the top of the bottle about 4–5 inches from the top. (The top of the bottle is your funnel. The bottom is your collection container.)
3. Place the top part of the bottle upside-down inside the lower part.
4. Put your rain gauge in an open area away from trees or structures. Secure it so it won't tip (e.g., dig a shallow hole the size of the bottom or surround with stones).
5. Use a ruler to measure the rain that falls.
6. Record results on a chart or in your Weather Journal.



## Keep a Weather Journal



Turn a notebook (or stapled scrap paper) into a Weather Journal! Record your findings in your journal.

## Observe and Record Clouds – Create a Cloud Chart

You'll need: clouds, paper/posterboard, calendar, or Weather Journal. Divide the page into columns for Date, Cloud Picture (leave blank if clear), Cloud Name, and Other Weather Conditions.

1. Look up in the sky and observe. **Ask your child:** Is it cloudy or not cloudy? How do the clouds look? What color and shape are they? Show child the cloud chart or Weather Journal cloud-charting page. Invite your child to draw a picture of the clouds she or he observes in the sky. Record your child's observations in the columns.
2. Check the clouds in the sky over a period of time. Make connections between the clouds you see and the other weather conditions. (For example, if there are dark cumulonimbus clouds in the sky and it is raining, point out that the rain is coming from those clouds.)



## Test & Compare Temperatures – Experiment with Ice Cubes

You'll need: two ice cubes (same size), two (identical) bowls.

Optional: thermostat and/or outdoor thermometer

1. Go outside and observe. **Ask your child:** How does the outside temperature feel? Is it warm, hot, cool, cold?
2. Go inside. **Ask your child:** How does the inside temperature feel? Is it warm, hot, cool, cold? Is it cooler or warmer inside or outside? Let's perform an experiment to compare the temperatures inside and outside!
3. Get two ice cubes and two bowls. Have your child place one ice cube in each bowl. Place one bowl inside your home and the other outside. Check the ice cubes frequently. **Ask your child:** What's happening to the ice cube inside? Is it different than what is happening to the ice cube that's outside? Why? Make the connection between the state of the ice cube and the temperature in each location.
4. Observe the temperatures on the thermostat/thermometer. Record them in your Weather Journal.

