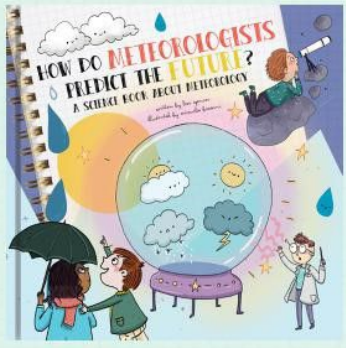
Teacher Guide

# HOW DO METEOROLOGISTS PREDICT THE FUTURE?

Have you ever wondered how meteorologists on TV predict the weather? A basic explanation of weather instruments, forecasting, and so much more is explored through diagrams, illustrations, and informative and engaging text in **How Do Meteorologists Predict the Future? A Science Book About Meteorology.**


**LISA SPENCER**
Lisa Spencer is a long-time broadcast meteorologist at WSMV in Nashville, Tennessee. She earned her master's degree in geography with a concentration in atmospheric science from the University of Memphis as well as a bachelor's degree in broadcast communications. She also obtained a certificate in meteorology from Mississippi State University. Lisa has been recognized nationally by the American Meteorological Society and the National Weather Association. Her career has taken her from TV stations in Memphis, TN, and Raleigh, NC, to The Weather Channel. Lisa and her husband Brady have two grown children and a dog. To learn more about Lisa, visit www.lisaspencer.com.

**SRIMALIE BASSANI**
Srimalie Bassani lives and works in Mantova, Italy. Her mother has always encouraged her artistic expression, and she is the inspiration for her passion. Her work is full of surprises. She always tries to diversify her style based on every story she illustrates. It's almost impossible to remove her from her writing desk, where she keeps a stack of books and teacups of many colors.



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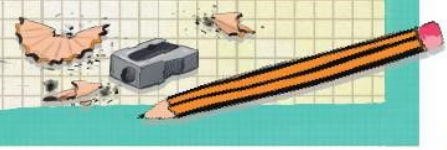
## THE HOW DO? SERIES

The How Do? series is a fully-illustrated nonfiction picture book series that introduces various STEM topics to readers interested in learning more about the world around them. Each title includes facts and figures, simple diagrams, and hilarious illustrations and is written in a question-and-answer format to encourage readers to ask questions and guess the answers, before exploring the science behind the correct solution.



# DISCUSSION QUESTIONS

1. Meteorologists are scientists that study the atmosphere. How do we interact with them on a daily basis?
2. How do meteorologists predict the weather forecast? Where and what do they look at?
3. Meteorologists use tools to assist them in forecasting the weather! Name five tools they use and what those tools do.
4. The National Oceanic and Atmospheric Administration monitors what three types of satellites? What do those satellites tell us?
5. Christian Doppler and Christian Hulsmeyer created two key technologies that help meteorologists today. What are they and how do they work together?
6. What makes a thunderstorm severe according to meteorologists?

# ACTIVITY: MAKE YOUR OWN THUNDERSTORM

Become a meteorologist at home and watch a storm form before your eyes!

## What you'll need:

- An ice cube tray
- Food coloring (red and blue)
- A clear plastic container

## Steps:

1. Fill the ice cube tray with water.
2. Put a few drops of food coloring in each and mix. Freeze for four hours or until frozen.
3. Fill the clear plastic container until it's about ¾ of the way full.
4. At the same time, put three or four drops of red food coloring onto the left side of the container and place 4 blue ice cubes on the right side.
5. Watch how the blue cubes begin to sink and melt! This is a lot like a thunderstorm, cold air pushes warm air up, which is how thunderstorms begin.

# ACTIVITY: WORD MATCH

Draw a line to match the word in column one to the correct answer in column two.

| | |
|---|---|
| Air pressure | Automated Surface Observing Systems |
| ASOS | A tool to measure atmospheric pressure |
| Atmosphere | A person who studies the atmosphere and makes predictions about weather events |
| Barometer | Warm air replaced by cold air |
| Meteorologist | A tool that measures wind direction |
| Climate | Weight of the air above earth's surface |
| Cold front | 30 mph |
| Weather vane | An educated guess about upcoming weather |
| Wind speed | The average weather in an area over a few years |
| Forecasting | The gases around the earth where weather happens |