

Pre-Show

WEATHER

ABOUT THE SHOW

Weather is a phenomenon that we all experience every day. Yet we rarely pause to think about how our day-to-day weather is caused by amazingly complex interactions between the Sun's energy and the Earth's air and water. We rarely notice the energy transfer between Sun, ground and atmosphere that produces the changes in air pressure that we feel as wind. We seldom consider how the water cycle manifests itself through harmless puffs of cumulus cloud and the torrential rains of a thunderstorm.

Our Traveling Scientists will introduce students to the building blocks of weather. We will explore how a star, 93 million miles away, is the impetus for both sunny days and snowy nights. The forces behind our weather will be brought to life as clouds, precipitation, and maybe even a tornado sweep through your classroom! By bringing together the deceptively simple elements of heat, air and water, the Weather show will reveal the inner workings of nature at its best – and worst.

We have provided the following activities to help students preview some of the major concepts covered in our show. Please remember to use appropriate safety measures for all activities. Adults should always supervise students during experiments.

**Thank you for scheduling a
Franklin Institute Traveling
Science Show. We are excited
to visit you soon!**



WEATHER JOURNAL

FOR GRADES 1-8

A weather journal invests students in meteorology, as well as develops their observation and data recording skills. By keeping a weather journal throughout the year, students will discover patterns and trends. Younger students can draw pictures of the weather, while older students can make charts and graphs of the data they collect. During the show, we'll find out what causes the wind, clouds, and storms that students observe.

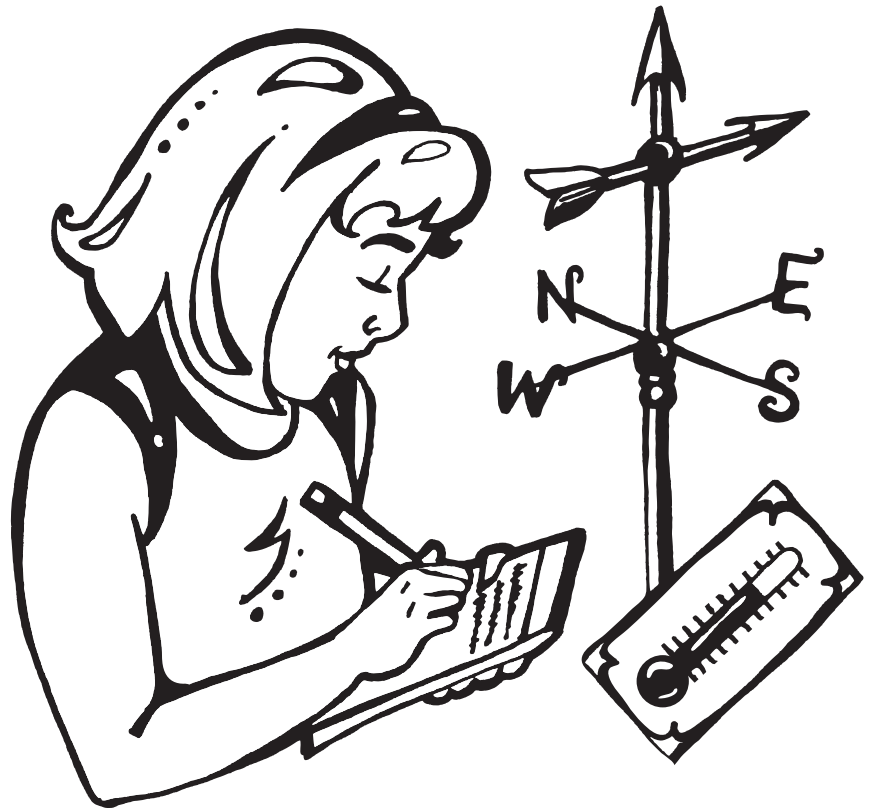
EQUIPMENT

Paper

Pencils

PROCEDURE

1. Brainstorm reasons we might want to predict weather.
What activities or choices are affected by the weather?
2. Explain that meteorologists track weather data and look for patterns, which they use to predict the weather in the future. Ask, "If we wanted to track the weather, what information could we record?"
Through discussion, lead students to focus on a few variables, such as: temperature, cloud cover, wind, humidity, and precipitation.
3. Create a weather journal (one for each student or a class journal) with room to record data for each variable.
4. Encourage children to make daily observations. If possible, use thermometers, rain gauges, and wind vanes (anemometers).
5. Look for patterns in the weather over time. For example, how does the temperature change from day to day, or month to month? Older students might construct graphs to look for patterns – for instance, which month had the most rain?



CYCLE IN A JAR

FOR GRADES 3-6

As we will discuss in the show, the water cycle is a major factor in weather and climate. As solar energy interacts with water, we see everything from drought to floods, from warm rain to frozen snow. In this activity, students will construct a simple model of the water cycle and observe the processes of evaporation and condensation.

EQUIPMENT

2 jars

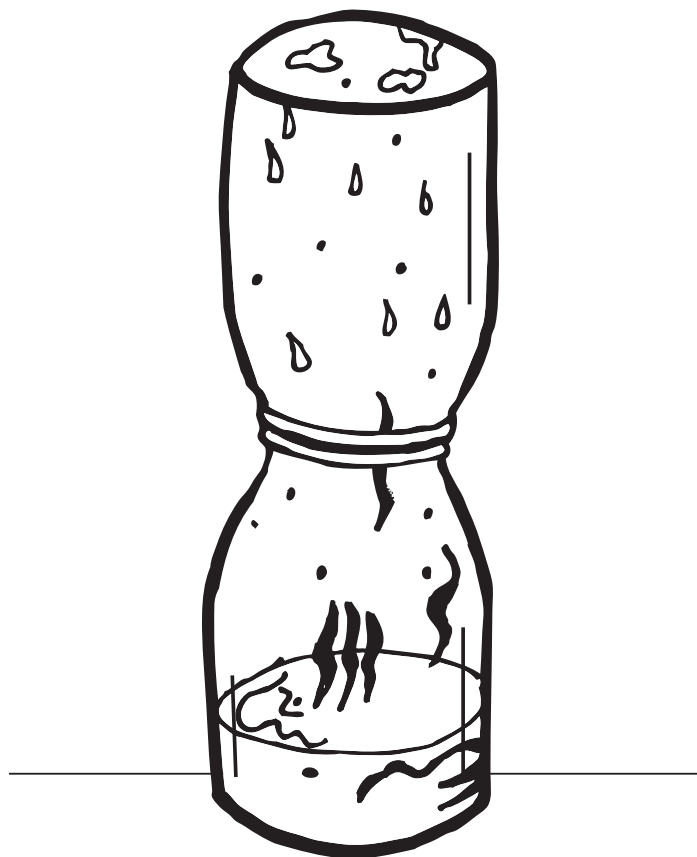
Tape

Water

Ruler

PROCEDURE


1. Take the lids off the jars. Put some water in the bottom of one jar. Turn the other jar upside down and set it on top of the first jar. Tape together the open ends of the two jars.
2. Put the jars near a sunny window.
3. Observe the jars several times a day for at least a week. Record your observations. Use a ruler to measure the level of water in the lower jar.
4. Discuss how this models the processes of the water cycle. What time of day does condensation usually appear? How do the temperature and amount of sunlight affect the cycle?



WEATHER WORD SEARCH

FOR GRADES 1-4

During the show, we will explore a variety of weather phenomena. In this activity, students activate their prior knowledge about weather, see what topics are covered in the study of meteorology, and get excited about the upcoming show! Words are written up and down, forwards and backwards, and even on diagonals.



E T O E H R E W O H S
U H E O E I E D I L Y
C U U S A A A C E N W
R N H R T N L E I O D
L D W U R O T A N A D
O E E O M I R S C I O
H R T D C I C M O E O
E A Y H A D D A C R L
D L I G H T N I N G F
Y G O L O R O E T E M
M F E U U S U N N Y D

HURRICANE

FLOOD

SHOWER

SNOW

RAIN

HEAT

SLEET

HUMIDITY

WEATHER

TORNADO

LIGHTNING

THUNDER

ICE

WIND

FOG

SUNNY

STORM

CLOUDY

HAIL

METEOROLOGY