Scientists use a variety of weather factors to determine local fire danger, including temperature, humidity, and wind speed. Many unwanted wildfires are started accidentally due to human activity. Practice predicting fire danger in your area and learn about preventing wildfires!

Note: This activity does NOT involve the use of fire.

MATERIALS

- Science notebook or paper
- Something to write with
- Local weather information—this can be gathered from the newspaper, a cellphone app, weather.gov, or using tools such as a thermometer
- Access to an area outside to observe and collect leaves, sticks, and other fuels

PROCEDURE

- To predict the fire danger level in your area, you will record a few different meteorology data points.
- Find and record the temperature, humidity, and wind speed for your location. You can use tools like a thermometer or use websites (like weather.gov/), a cellphone app, or a newspaper for reference. Use the chart on the next page or copy into your science notebook.
- Next, head to an outside area where you can collect some fallen plant life. Examples might include grass, leaves, sticks, or pieces of bark.
- Plants can serve as fuels for wildfires, and scientists look at the moisture content in these fuels to help them predict fire danger. Analyze your fuels—first draw or write a description in the chart below or your science notebook. Note whether they seem wet, moist, or dry. Which one will burn faster? Which one will burn longer? Which one will dry out faster?
- Read the chart on page 3 for each of the five fire danger levels (low through extreme). Using your weather and fuel data, make a prediction for the current fire danger level in your area.
- Check your prediction against the rating for your area found on weather.gov/fire.

Experiment continued on next page...
FIRE DANGER PREDICTION WORKSHEET

Location: ___________________________ Date: _______________ Time: _______________

Temperature: ___________ Humidity: ___________ Windspeed: ___________

Use this area to draw or write your plant fuels collected from outside. Label whether they were wet, moist, or dry.

Fire danger prediction: ___________________________

Fire danger rating from website: ___________________________

*Experiment continued on next page...*
TRY THIS
Repeat your exploration using weather data from other places in the world. Choose a location: maybe somewhere you’ve visited, or somewhere on another continent. Using your science notebook, look up and record the current temperature, humidity, and wind speed in that location. Make a prediction about fire danger level, and then use weather.gov/fire/ to compare your prediction to the current rating.

WHAT’S HAPPENING?
A wildfire is an unwanted fire that burns fields, grass, brush, or forest. Many are started by people, and by accident. These fires can affect wildlife, watersheds, forests and plants, and personal property.

Weather conditions play a big part in the level of fire danger in an area. High temperatures, low humidity, and strong winds can all increase the likelihood of a fire to start and spread. Scientists use weather data as well as information about fuels and topography to predict fire danger.

Fire scientists use five different color-coded levels to help the public understand fire potential and prevent human–caused wildfires. You may have seen signs at state or national parks displaying that area’s current color-coded fire danger level.

![Wildfire Danger Level Chart](chart-adapted-from-fs.usda.gov)
K–2 GRADE EXPLORATION

- Where have you seen fire before? At a campfire? On TV? In a fireplace?
- What can you remember about fire? What color is it? What do you smell? What do you feel?
- What season is the hottest and driest where you live?
- What things can you do to be fire safe? Think about both inside your home and outside in nature.
- What should you do if your clothes catch fire?
3–5 GRADE EXPLORATION

- Humidity is the level of moisture in the air. How do you think higher or lower humidity will affect fire danger level? What about wind speed?
- A fuel is anything that will catch on fire and burn. Make two columns in your science notebook, one for “Fuels” and one for “Not Fuels”. Using the list below, assign each item to a column. Check your work by talking with an adult in your household—do not test to see if things are fuels!
  - Pine cone
  - Piece of wood
  - Glass bottle
  - coin
  - Cardboard
  - T-shirt
  - Wrench
  - Leaf
  - Paper
  - Rock
- What things can you do to be fire safe? Think about both inside your home and outside in nature.
- What should you do if your clothes catch fire?
6–8 GRADE EXPLORATION

- Humidity is the level of moisture in the air. How do you think humidity levels affect fire danger levels?
- How does wind speed affect fire danger?
- Topography describes the physical features of the land. This can include hills, mountains, rivers, lakes, and valleys. How do you think topography affects fire danger levels?
- Some fires can be beneficial to forest ecosystems. Why do you think this might be? How could a fire help improve forest health?
- What things can you do to be fire safe? Think about both inside your home and outside in nature.
- What should you do if your clothes catch fire?