

# Climates

Running Time: 26 Minutes

## Nifty questions in this episode:

- What is climate?
- How does water end up in the atmosphere?
- What is the Continental Divide?
- What holds heat on Earth?

## Awesome answers:

- "Climate" refers to how warm and wet a place is, overall.
- The sun's energy evaporates water into the atmosphere.
- The Continental Divide separates a continent into two climate regions.
- Carbon dioxide holds heat on Earth.

## Experiments shown on the video:

### MAKE SOME RAIN!

**Objective:** To demonstrate the formation of condensation on hot and cold surfaces.

- Cut a 2-liter bottle in half.
- Pour hot water in the bottom of the bottle; add 3 drops blue food coloring.
- Now put the top half of the bottle inside the colored hot water; fill with ice.
- Condensation will form and drip down the inside and the outside of the bottle.
- What happens to the blue-colored water?

## More interesting stuff to do:

### ON CLOUD NINE

**Objective:** To make a cloud with fine, solid particles (smoke) added to cool, moist air.

- Collect two baby food jars or similar jars.
- Put 50 milliliters cold water into one baby food jar.
- Place a plastic bag containing two ice cubes into the jar below the neck; observe for 2 minutes.
- Repeat the above procedure, using hot water in the second jar; observe for 1 minute.
- Have your teacher light two matches; let them burn 2 to 3 seconds.
- Remove the plastic bag from the jar.
- Blow the matches out and drop them quickly into the second jar.
- Quickly place the bag with ice cubes back into the second jar; observe for 1 minute.
- Do you see a cloud mist form? Cold air with particles and moisture can cause clouds to form ("how warm and wet a place is overall").

### UP, UP, AND AWAY!

**Objective:** To illustrate the way hot air rises.

- Use a long, clear, plastic dry-cleaning bag.
- Twist the closed end and tie a knot in it.
- Using flexible straws, make a chain and form a hoop by inserting one straw into another.
- Fold the bottom (open) edge of the bag around the straw "hoop" and tape it to the straws.
- Have the teacher hold the opening of the bag above a lighted alcohol burner while the rest of the bag rests on ground, or use a high-powered hot hair dryer for heat source.
- Be careful not to burn the bag!
- The rising hot air will lift the bag.

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closed-captioned



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