

# Evolution

Running Time: 26 Minutes

## Nifty questions in this episode:

- For how many years have living things on earth been changing?
- What is the process of change called?
- What is deoxyribonucleic acid?

## Awesome answers:

- Living things have been changing for over 3 billion years.
- Evolution.
- DNA, a molecule containing the genetic message.

## Experiment shown on the video:

### SHAKE-IT-UP MOSS

**Objective: To show that mosses have evolved to survive in a variety of habitats.**

- Collect some green moss from a park or wooded area. Put a fist-sized clump of moss in a blender and add about 2 cups of milk. Turn on the blender and process the moss/milk mixture. Remember, whatever you do: DON'T DRINK IT!
- Pour the contents in various outdoor locations that you will have regular access to: around walkways, among rocks, along a brick path, or in cracks in the sidewalk or driveway.
- Check the locations every few days. Watch as moss begins to grow; it will look very similar to the original moss you placed into the blender.

## More interesting stuff to do:

### FOSSILS FOR YOU

**Objective: To create a "fossil" imprint.**

Fossils provide a record of what living creatures looked like long ago, allowing biologists to track evolutionary changes that have occurred over time. Make your own fossil and compare the imprint with the original organism.


- Obtain a small container, plaster of Paris, petroleum jelly, modeling clay, and a small natural object such as a leaf or shell.
- Apply petroleum jelly to the outside of your object, then gently press the shell or leaf well into the modeling clay. Carefully remove the object from the clay, leaving an imprint. (Keep your object handy.)
- In your container, make a thick paste by mixing the plaster of Paris with a little water. Pour the plaster into the imprint in the clay and let it harden for about 30 minutes. Remove the clay from the plaster.
- Look at the plaster cast of your object. How is it similar to the original? How is it different? Draw and label pictures to illustrate the similarities and differences.

### SURVIVAL OF THE HIDDENEST

**Objective: To demonstrate the adaptive value of camouflage.**

- Enlist the help of a partner; he or she is the predator in this experiment. Obtain eight 12-inch pipe cleaners, each of a different color. Cut each one into 1/2-inch lengths. You will have 24 pieces of each color. This is your prey.
- Find an area of lawn where you can use string and small stakes to map out a square that is 7 yards to a side. Have your partner close his or her eyes while you scatter the pieces of pipe cleaner randomly in your grassy square.
- While you slowly count to 100, your partner picks up as many pieces of pipe cleaner as possible.
- How many pieces of each color did your partner find? Which colors were easier to see? If your partner were a predator and the pipe cleaners were prey, which colors would be most likely to survive and have a chance to reproduce? If the colors were hereditary, how would that affect the color distribution of the next generation?

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 closed-captioned



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