

Duck Feather Activity



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Duck Feather Activity



Supplies Needed

- Feathers {craft or natural}
- Plastic Gloves
- Scissors
- Magnifying Glass
- Microscope {optional}
- Paper Towels
- Water
- Cooking Oil
- Pipettes
- Dish Detergent

Feathers are crucial to a bird's survival. They keep birds warm and allow them to fly. Their hollow shaft gives structure without weighing them down. Each shaft is made up of a vane with many barbs coming out. The barbs have tiny barbules that cling together.

In this experiment, you will explore how duck feathers are perfectly designed to keep them protected, help them fly, and allow them to dry quickly.

Then, you'll experiment to see what happens when ducks swim in polluted ponds or get oil on their wings.

Observe your feather and draw what it looks like in the boxes below.
{You can use your magnifying glass and your microscope if you want to.}

Draw your feather.

Brush backwards against the barbs of your feather and draw what your feather looks like.

Smooth the barbs back out. Draw what it looks like now.

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Feathers are light and strong, and need to be able to push against the air to help a bird fly. When the feather is smoothed, it creates a solid wall to push against the air. When the barbs are messed up, there are holes for the air to come through, making it tough for a duck to fly.

When oil gets on a duck's feathers, they can't do their job either. Oil seeps into the feathers so that they can't keep duck warm anymore. It also weighs them down, making it hard for them to float on the water or fly in the air.

They have trouble getting to their food or escaping from predators. Since ducks preen {or clean} themselves often, they end up swallowing the oil. This makes them sick and can eventually cause them to die.

In this part of the activity, you'll see the effect of oil on duck feathers for yourself.

Study your feather carefully. Look at it under the microscope or magnifying glass and notice how the barbs overlap. This provides a waterproofing effect for the duck.

Dip your feather in a glass of water. Pull it out and look carefully. What happened? Did the water soak in? Bead up? Roll off?

Dry your feather by pulling it through a paper towel gently. How quickly did it dry?

Dictate/draw your observations below.

Now, use a pipette to add a few drops of oil to the water. Put on your gloves and dip your feather again. Pull it out and look carefully. What happened? What did the oil do to the surface of the feather?

Dry your feather by pulling it through a paper towel gently. Does the oil come off?

Dictate/draw your observations below.

Now, try to find the best way to clean oily feathers. Dip two more feathers in oil.

Clean one with cold water, one with hot water, and one in soapy water.

Which cleaned the best? Why do you think that?

Dictate/draw your observations below.