



Table of Contents

Experiment procedures: Clay	2
Experiment procedures: Water	3
Learn about tool use	4
Facilitator information	5

Learn More

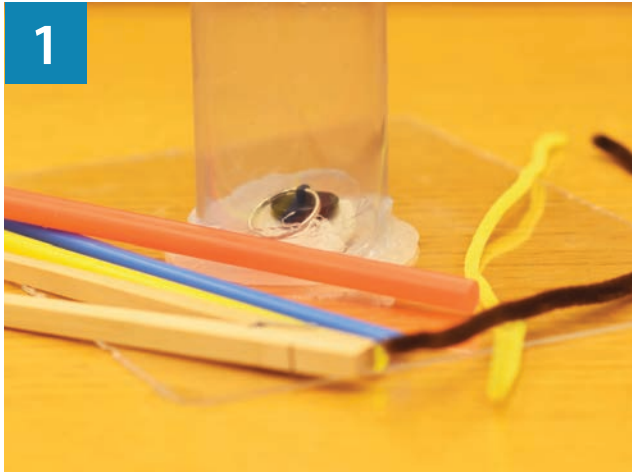
This is a companion PDF from the online article with our partnerwebsite at AskAnAnthropologist.asu.edu

Tool Test

askananthropologist.asu.edu/experiments/tool-test

Tool Test—Clay

Can you get the object out of the tube?



A small object is stuck at the bottom of the tube. Can you get it out? You can use the tools any way you want, but you can't tip the tube!



Hint: If you're having trouble, try combining the tools or modifying them so they work better.



Ready for another challenge? Let's try another object, and take away some of the tools!



When you're done, watch the video to see how a New Caledonian Crow solved this problem!

Video URL:

<https://youtu.be/TtmLVP0HvDg>

Image credit: Andy Reago & Chrissy McClarren via Wikimedia

Tool Test—Water

Can you get the object out of the tube?



A small object is floating in water, out of reach. Can you figure out how to get it? You can use the objects in front of you, but you can't tip the tube!



Hint: If you're having trouble, think about Aesop's Fable *The Crow and the Pitcher*.

How does the crow in the story raise the water level to get a drink?



When you're done, watch the video to see how a New Caledonian Crow solved this problem!

Video URL:

<https://youtu.be/ZerUbHmuY04>

Image credit: Andy Reago & Chrissy McClarren via Wikimedia

Humans are special because we make and use tools to solve problems.



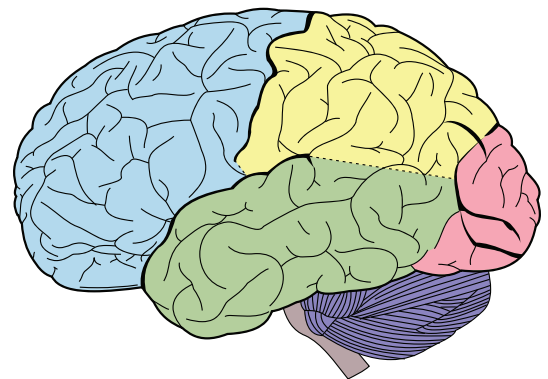
New Caledonian crows use tools to get food. Image credit: Andreas Fischler via Wikimedia

Only a few animals use tools, and fewer still are able to solve complex problems. When you figured out how to get the object out of the tube, you demonstrated some of the traits that make us human. From drinking straws to airplanes, people make tools to address challenges big and small.

All animals rely on their bodies to survive, and their bodies are adapted to increase the odds of their survival. Butterflies use their proboscis (a feeding organ, like a straw) to drink nectar and their wings to fly. Their bodies have adapted to the type of food and movement that they specialize in.

Some animals can use tools, and can be quite clever about problem-solving. For example, New Caledonian crows use twigs to get tasty beetle larvae out of dead trees, and chimpanzees use sticks to get ants out of anthills.

Humans use technologies to adapt to our physical environment. This allows people to live in every climate on Earth. Compared to other animals, people have more kinds of tools and our tools are more specialized. We also improve our tools over time, learning from what others have done.



Human brains are big compared to our body size! Our brains have a very big neocortex, which helps us solve problems, use tools, and communicate.

Facilitator Guide

Learning objectives

1. Humans are special because we make and use tools to solve problems.
2. Only a few animals use tools, and fewer still are able to solve complex problems.
3. Humans use technologies to adapt to our physical environment.

Materials

Clay challenge

- Acrylic tube
- Modeling clay
- Assorted objects (buttons, small toys, beads)
- Assorted tools (tweezers, chop sticks, wire)
- Activity guide
- Crow video (optional)
- Info sheet
- Table sign

Water challenge

- Acrylic tube
- Pitcher of water
- Floating objects (corks, small rubber duckies)
- Blocks (two material types)
- Activity guide
- Crow video (optional)
- Info sheet
- Table sign

• Advanced preparation and notes to presenter

Clay challenge

The shorter tubes are for the clay challenge. Stick a piece of modeling clay at the bottom of the tube. For each challenge, you can add different objects for participants to fish out. Some objects are easier to remove than others, and some tools are easier (or require less modification). For younger participants, you might start with easier challenges, while older children enjoy more difficult challenges. After one success, you can offer additional challenges (harder objects to retrieve, or a more limited set of tools to use).

Water challenge

The taller tubes are for the water challenge. Fill the tubes about halfway with water, and add the floating object. The blocks have two different densities: one kind sinks and one kind floats. Participants can experiment with which blocks work best.

Safety

Monitor young children carefully, as some of the objects could present choke hazards. Do not allow anyone to put the objects or tools in their mouths (or drink the water).