Ask An Anthropologist
activity for classroom and home

by **Amy Peterson**

Thumbs up!

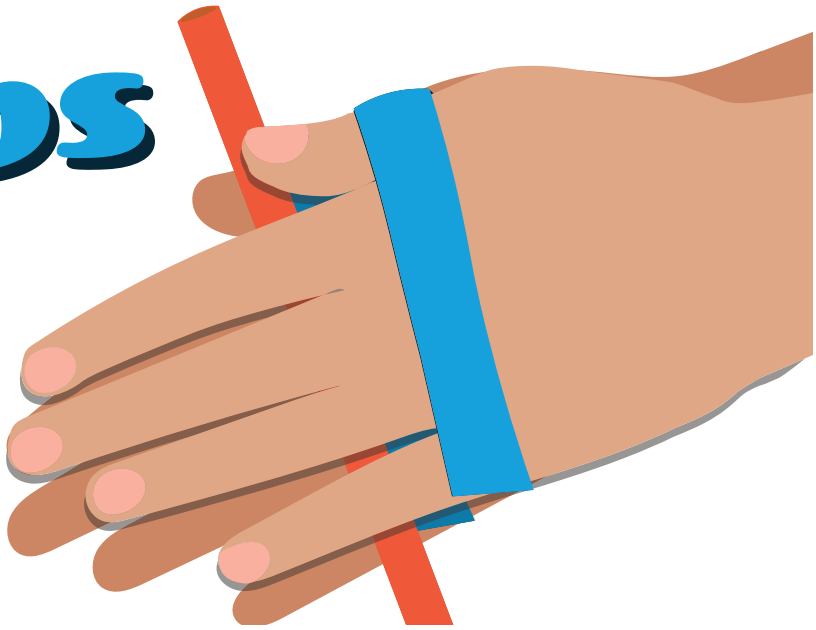

Table of Contents

About the Author

Amy Peterson is a graduate student with the Institute of Human Origins at Arizona State University. Her research interests include paleoanthropology, functional morphology, and the evolution of the pelvis in early hominins.

Learn More

This is a companion PDF for the online article:

Thumbs Up
askananthropologist.asu.edu/experiments/thumbs

Thumbs up

Can you put the straw in the bottle—without using your thumbs?

Have a helper tape your thumbs to the side of your hands.

Try to use your taped hands to do some simple things. Pick up the straw. Can you put it in the bottle? Now, can you pick up the bottle?

Finally, take the straw out and try to put the cap on the bottle. Would it be easier if your thumbs weren't taped down? Take the tape off and see!

Human hands are adapted to let us do many things.

Our opposable thumbs let us grasp and manipulate objects. When you taped down your thumb, you got a sense of how hard it would be to do many things if our hands were shaped differently. Even a simple task like placing a straw in a bottle becomes difficult!

Our closest living relatives, chimpanzees, have hands that are similar to ours. Their hands allow them to use some simple tools, like using a stick to get ants out of anthills. But they don't have a brain like ours, so they can't plan out complex tools to produce, and they don't improve on the design of their tools over time.

Humans can touch all four fingers with our thumbs. Image credit: Øyvind Holmstad via Wikimedia

All living things have evolved through time in response to their environment. Many millions of years ago, the ancestor to all living primates developed an opposable digit on its hands and feet, which allowed it to cling to branches in the trees where it lived. This trait became beneficial to survival, and was passed to all the descendants of that ancestor species.

Colobus monkeys have a very small thumb, making it easier for them to swing in trees. Image via Wikimedia

The opposable digit has evolved differently for different species. For example, like most primates, chimps retained their "thumbs" on both their hands and feet. Colobus monkeys have greatly reduced the thumbs on their hands, because these monkeys no longer needed an opposable digit for how they move. Humans have a thumb on our hands, but we no longer have an opposable big toe.

Facilitator Guide

Learning objectives

1. Human hands are adapted to let us do many things.
2. Our opposable thumbs let us grasp and manipulate objects.
3. The human body has evolved through time in response to our environment.

Materials

- Painter's tape
- Drinking straw
- Empty plastic bottle with cap
- Trash container
- This info sheet

Safety

Tape the thumbs so they are close to the hands without a gap, but not bound too tightly. Peel the tape off carefully and dispose of it immediately (balled up tape could present a choking hazard for young visitors).

Credits and rights