Have you ever seen a bird catch a worm or a chipmunk stuff their cheeks? How do they do it? Animals have **evolved** some amazing grippers and grabbers over time.

A heron’s beak grips delicately and precisely – like chopsticks!

**Heron beaks** grip and poke

**Sharp, flexible talons**

**Tools & Traits**

A **tool** is an object that helps us complete a task. A hammer tap-taps nails into place, while a toothbrush freshens our mouths. Animals are born with their own tools, physical **traits** that help to hunt, fly and survive. These traits are passed on from parent to child and are unique to each **species**, or type, of critter.

1. **Match the Chameleon’s Unique Physical Traits:**
   - Camouflaged Skin
   - Gripping Feet
   - Flexible Tail
**Simple Machines:** a device that provides a force.

- Inclined Plane
- Wedge
- Lever
- Screw

**Compound Machines:** a device consisting of two or more simple machines. Scissors, wheelbarrows and your Reacher are types of compound machines.

2. **Match the Scissors to the Simple Machine Labels**

- Lever
- Wheel & Axle
- Fulcrum (Screw)
What work have you done today? We don’t mean homework. **Work** occurs when a **force** applied to an object causes the object to move.

**Work** = **Force** \( \times \) **Distance**

How can you work, better? Using **simple machines** to trade a smaller amount of **force** over a greater **distance** creates a **mechanical advantage**, and makes your work more **efficient** (faster and easier)!

**... Now You Try!**

Change the **fulcrum** (pivot point) on your Reacher to make a **long handle**.

Change the **fulcrum** (pivot point) on your Reacher to make a **short handle**.

Use your **Reacher** to pick up an object (e.g. marshmallow) in each position. Which one made your work easier? Why?

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Adult supervision required for children under 12.
Think of **tools** and **traits** in life and nature.

How would you design your Reacher to:

4. ... grab or clut [ch]?

5. ... scrunch?

6. ... grip and lift?