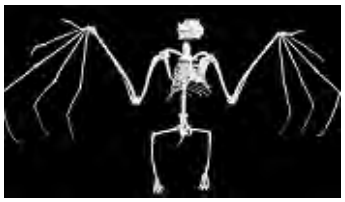
Make a Bat Skeleton Puppet

Discover bat skeletons by making a moveable puppet!



Special adaptations help bats fly, including lightweight arm bones and long finger bones covered with a membrane to form flexible wings.

Left: Bat skeleton. Image: www.earthlife.net.

Materials Needed:

Bat skeleton puppet template, scissors, 8 metal brads, 2 small rubber bands, string. *Optional:* Cardstock or thin cardboard, popsicle stick, glue, small hole punch, binder hole reinforcement stickers.

Instructions:

Prepare your materials: Print the puppet template on cardstock, or glue to a thin piece of cardboard to make it sturdier. Cut out the bat skeleton pieces along the dotted lines. Make small holes on each black dot, with a small hole punch or the tip of a pencil. Be careful not to get too close to the edge! *Optional:* Add binder hole reinforcement stickers on each hole.

Step 1: Turn the wing pieces over to the blank side. Insert a brad through the hole closest to the outer edge on each piece.

Step 2: Turn the wing pieces over and place them so the brads are next to each other. Slide a small rubber band around both brads. Fold the brad legs down over the rubber band to hold it in place (see picture).

Step 3: Repeat steps 1-2 with the leg pieces.

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Step 4: Place the body piece with the printed side up. Insert brads into all the holes, except for the head. Turn the piece over to the blank side, so the brad legs stick up. Don't fold the legs over yet!

Step 5: Insert the wing pieces, with blank side up, over the brads. Do the same with the leg pieces. Fold the brad legs down to secure.

Step 6: Tie a piece of string through the hole near the head to hang up your puppet!

You can stop here, or go on to step 7 to make the wings move.

Optional: **Step 7:** Cut a 12-inch (30-cm) length of string. Tie a knot around the center of the rubber band on the wings. Make sure to tie around both strands of the rubber band. Slide the string under the rubber band on the legs. When you pull on the string, it will move the wings!

Optional: **Step 8:** To reinforce the body of the puppet, glue a popsicle stick along the length of the body piece. Make sure the popsicle stick is underneath the rubber bands.

Extensions:

Experiment with ways to move both the legs and wings. Design your own puppet mechanism!

Place your bat puppet on a piece of paper and imagine the bat body around it. Draw a bat outline around the skeleton.

Bats: The Flying Mammals

Bats are the only mammals who can fly. Other mammals, like the flying squirrel and flying lemur, glide rather than actually fly.

Bat wings. *Image: National Park Service.*

Bats are members of the order *Chiroptera*, which is Greek for "hand wing." Bats have four long fingers and a thumb, connected by a thin layer of skin called a membrane. Their flexible wings and movable joints allow them to change direction quickly in midair. They can fold their wings like way we move our fingers, making bats excellent at maneuvering in the air.

There are more than 1,300 species of bats in the world, making them the second most common group of mammals after rodents. Bat species are incredibly diverse, ranging from the tiny bumblebee bat, weighing less than a penny, to giant flying foxes with six-foot wingspans.

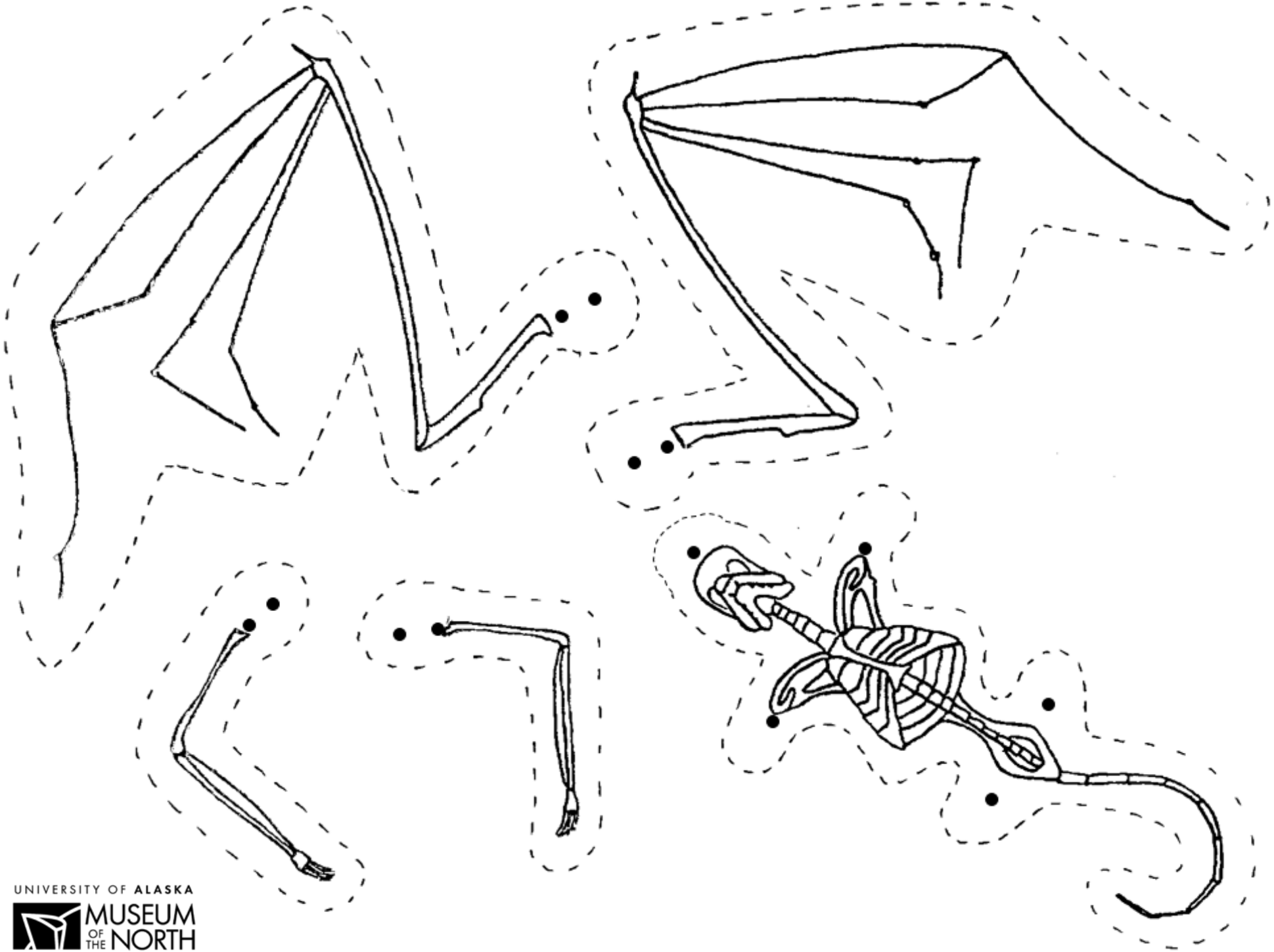
Seven species of bats live in Alaska. The most common is the little brown bat (*Myotis lucifugus*), which lives in the interior, southcentral, and southeast parts of the state. They are 3 to 4.5 inches (7.5 to 11 cm) in length. Little brown bats are generally nocturnal, and eat insects such as moths, mosquitoes, and beetles. They can eat up to 1,500 insects every night, which is about 50% of their body weight!

Little brown bat. *Image: Alaska Department of Fish & Game.*

In the cold Alaska winters, there are few insects for bats to eat. So bats hibernate for the winter, lowering their body temperature, metabolism, and breathing rate to reduce the amount of energy they need.

Scientists are working to learn more about bats in Alaska, so we can help them survive. You can get involved by reporting when you see a bat, or monitoring their roosts. Learn more at:
www.adfg.alaska.gov/index.cfm?adfg=wildlifediversity.citizenscience&project=bats

Bat Skeleton Puppet Template: Print and cut along the dotted lines. Punch small holes on the black dots.



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