

## Lesson 2: Animal Structure

### Getting Started

#### ? Big Ideas

- How do living things survive in their communities?
- How do animals' designs help them to live in their communities?
- How does the environment support the needs of plants and animals?
- What do communities provide for their members?



#### Facts and Definitions

- Animals' body coverings help them to live in their communities.
- An **exoskeleton** is a hard outer covering on the body of an animal.



#### Skills

- Describe the needs of plants and animals (S)
- Explore a wide variety of living things (S)
- Ask and answer questions about organisms (S)
- Sort organisms according to their parts and characteristics (S)
- Compare objects according to attributes (M)
- Identify and sort objects according to attributes (M)
- Create simple graphs (M)



#### Materials

- ✓ red and green pen or marker\* (Activity 2 - Option 1)
- ✓ scissors
- ✓ tape or glue

### Introduction

Explain to your child that an animal's design helps it live and grow in its community. Ask your child to describe any interesting animals that she knows about and how their design helps them to live.

### Activities

#### Activity 1: Body Coverings

Describe the different types of body coverings that animals can have. Explain to your child that animals' body coverings help them to live in their communities. For example, in the arctic region, it is very cold, so the polar bear has very thick fur and a layer of fat to keep warm.

On the sheet called "Body Coverings," ask your child to write the four different body coverings from the word box. (If your child is not familiar with an exoskeleton, look at pictures of animals that have exoskeletons and explain that an exoskeleton is a hard outer covering on the body of an animal like a crab, grasshopper, or ladybug.) Then ask her to think of a word that describes the texture or feel of each covering. Next, ask her to think of an animal that has each covering. Finally, ask her to find an example of an item (living or nonliving) that has a texture that she thinks is similar to each body covering. Provide assistance as needed. She can look inside and outside for examples.

Note: To extend this lesson, let your child go to a craft store and find different materials for the different body coverings. The materials she chooses should feel similar to the body coverings. For example, she might choose cotton balls to simulate

fur. Your child could make a touch-and-feel book. Each page can show an animal and include a piece of the material that has a similar feel to the animal's body covering.

### **Activity 2: Coverings Graph**

In this activity, your child will graph animals according to their body coverings. Choose Option 1 or 2.

#### Option 1

On the "Coverings Graph" (Option 1) page, ask your child to circle the title of the graph in red and the labels in green. On the bottom of the page are pictures of animals that she can cut out and paste on the graph according to their body coverings.

If your child is not familiar with an animal, locate pictures of the animal in books or online and discuss its body covering.

#### Option 2 (Advanced)

On the "Coverings Graph" (Option 2) page, ask your child to record a title for the graph and to label the x- and y-axes. On the bottom of the sheet are names of animals that she can cut out and paste on the graph according to their body coverings. If your child is not familiar with an animal, locate pictures of the animal in books or online and discuss its body covering.

When she has finished, ask her questions about the graph:

- Which body covering had the highest number of animals?
- Which body covering had the least number of animals?
- How many more did \_\_ have than \_\_?
- How many fewer did \_\_ have than \_\_?

Note: Tell your child that animals' body coverings are not limited to those on this list.

### **Activity 3: Animal Body Parts**

Explain to your child that in addition to body coverings, animals' body parts can also help them to live and grow in their communities. Show your child the list of the different body parts on the sheet called "Animal Body Parts." Explain how each body part helps the animal to live in its community habitat. (For example, claws help animals tear apart food in order to eat it, wings help birds fly, gills help fish breathe underwater, and beaks help birds peck worms from the ground and insects out of trees.) It might be helpful to find pictures of animals that have the given body parts and check to see if your child can point to the body parts on the animals.

Ask your child to draw a line from the name of the body part to the illustration of the body part. Then ask her to draw the missing body part on each animal shown at the bottom of the page.

#### Answer Key for Missing Body Parts:

1. beak
2. gills
3. wings
4. fin
5. claws
6. antlers
7. tusks

#### **Activity 4: Using Body Parts**

Discuss the fact that animals' unique body parts help them to live and grow. Sharp teeth indicate that an animal is a meat-eater, and those animals use their teeth to tear apart meat. Flat teeth indicate that an animal is a plant eater, and those animals use their teeth to grind plants.

Say each of the following body parts to your child and let her show how she would use them in the wild:

- wings
- claws
- beak
- gills
- sharp teeth
- flat teeth

You can pretend to put the body part on her or you can even make body parts from different materials in your home. For example, paperclips taped to fingers could be claws, gills could be lines drawn with acrylic paint on your child's side, wings could be dress-up fairy wings, and a beak could be a large craft stick your child holds between her teeth.

#### **Activity 5: Animal Sort**

For this math activity, your child will sort animals according to their body parts. There are three different circles, each containing two different attributes. Ask her to cut out the animal squares from the bottom of the page and paste them in the circles where they belong. Some animals may not work in any circle. Choose one of these options.

##### Option 1

For this option, the animal squares on the "Animal Sort" (Option 1) page include both a drawing of the animal and the animal's name.

##### Option 2 (Advanced)

On the "Animal Sort" (Option 2) page, the animal squares contain only animal names.

#### **Wrapping Up**

Ask your child if she can describe some different ways that animals' bodies help them to live in their communities. Ask her how a bear would be different if it did not have claws or if a bird did not have wings.

# Body Coverings

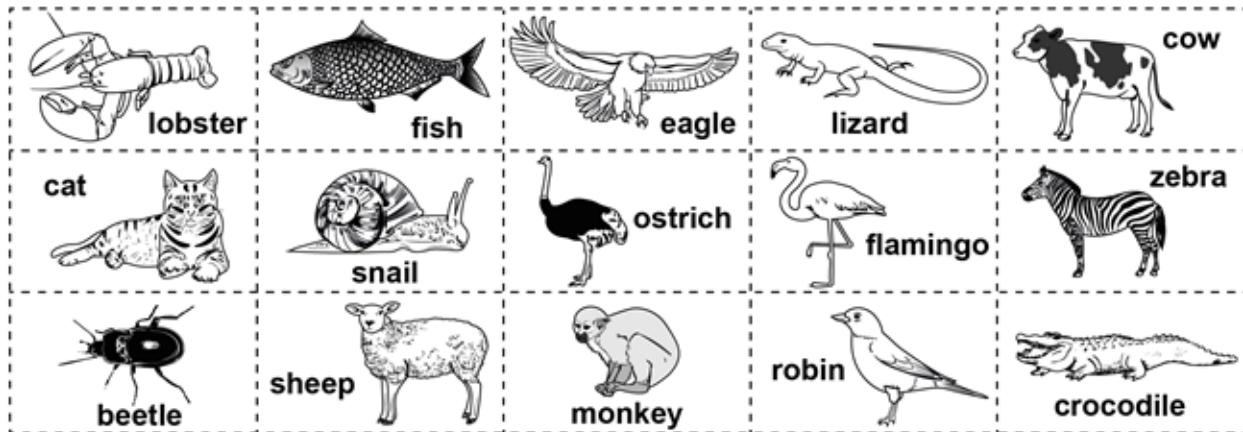
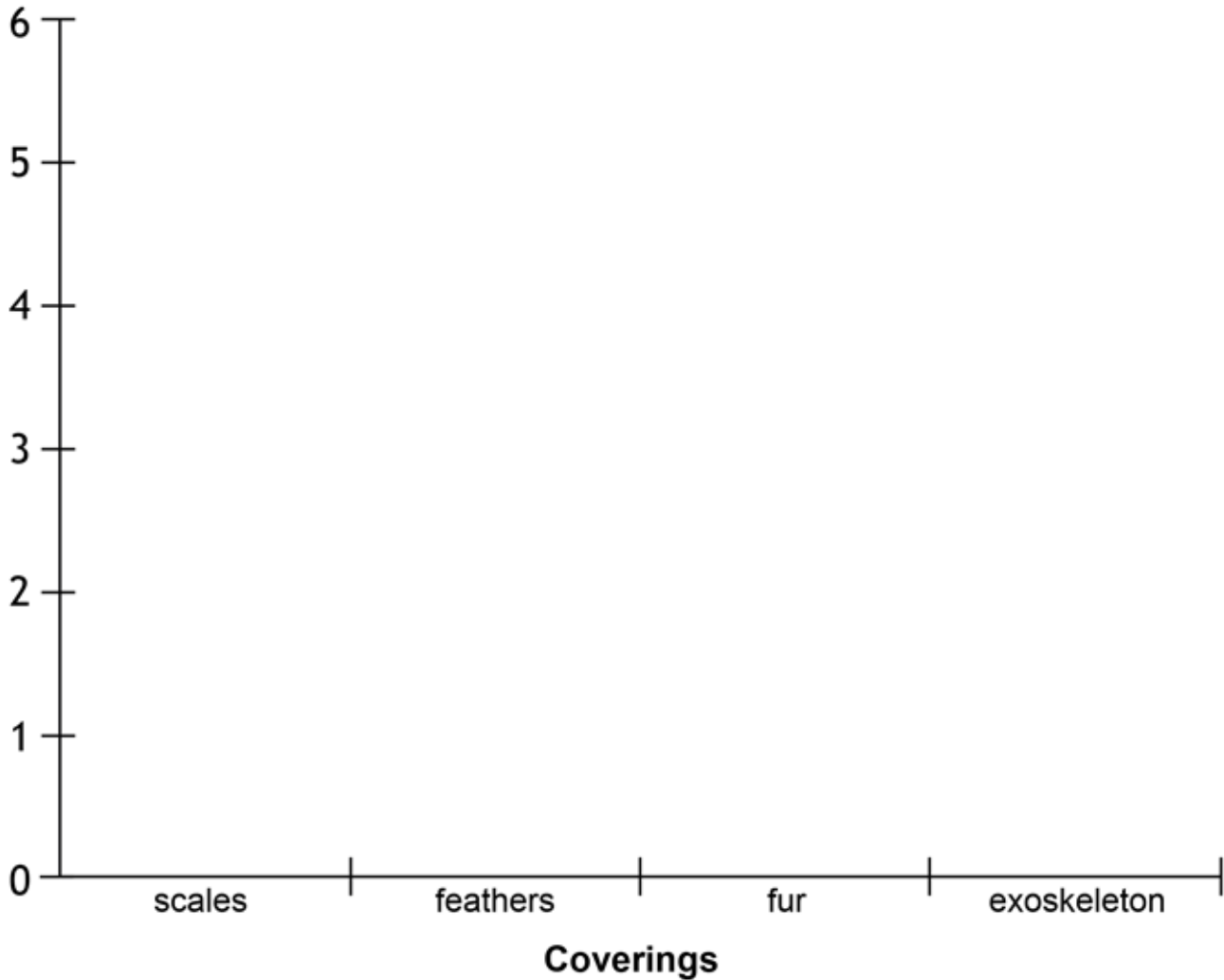
|             |   |
|-------------|---|
| Feathers    |  |
| Exoskeleton |  |
| Scales      |  |
| Fur         |  |

| Body Covering | Texture/Feel | Animal | Similar Texture |
|---------------|--------------|--------|-----------------|
| 1.            |              |        |                 |
| 2.            |              |        |                 |
| 3.            |              |        |                 |
| 4.            |              |        |                 |

# Coverings Graph

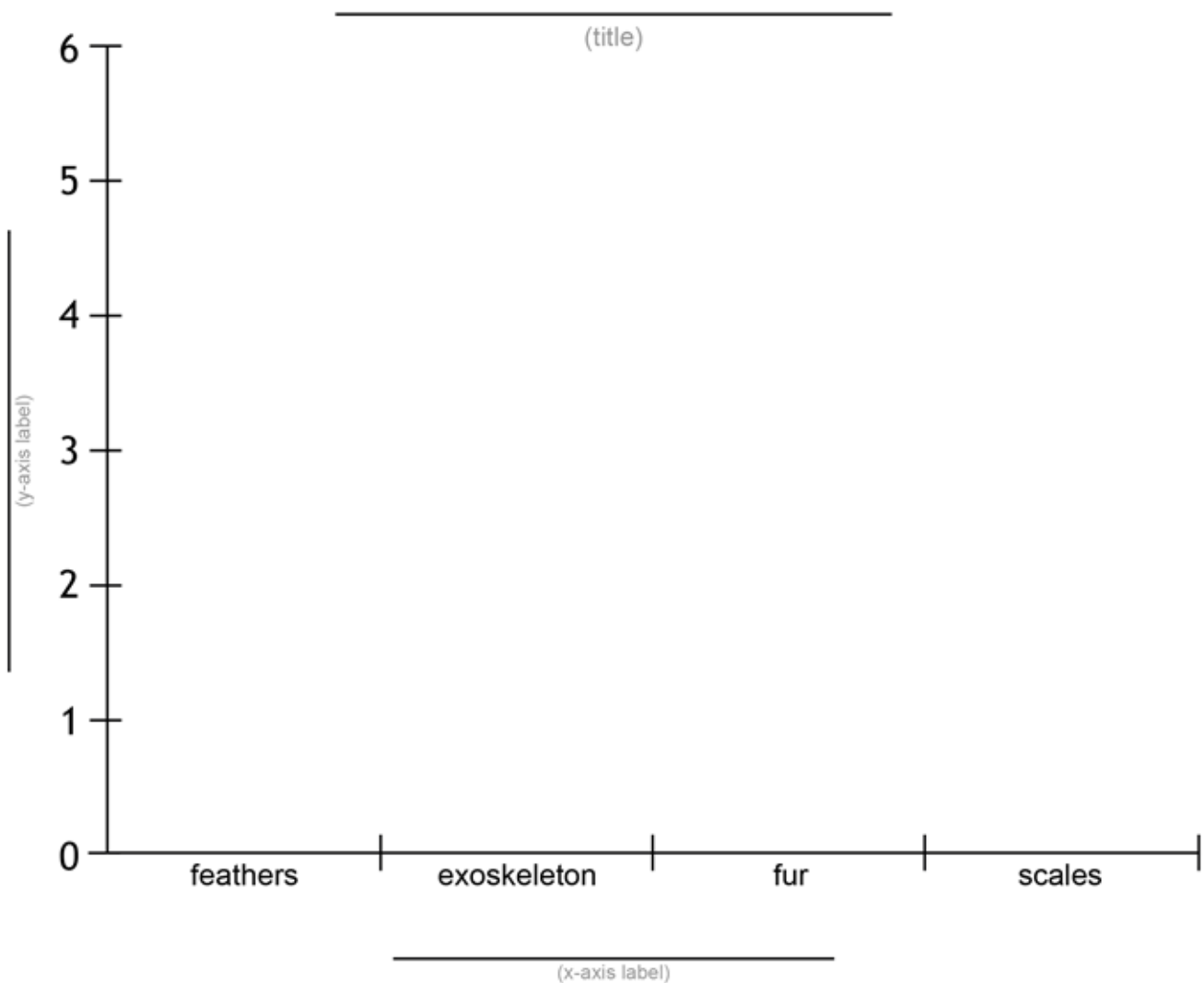
**Directions:** Cut out the animals below and sort them by body covering.

## Body Coverings



# Coverings Graph

**Directions:** Cut out the animals below and sort them by body covering.



|         |       |         |          |           |
|---------|-------|---------|----------|-----------|
| lobster | sheep | fish    | monkey   | robin     |
| cat     | snail | eagle   | lizard   | cow       |
| beetle  | zebra | ostrich | flamingo | crocodile |

# ANIMAL BODY PARTS

**Directions:** Draw a line from the name of the body part to the body part.

1. claw



2. wing



3. beak



4. gills



5. antlers



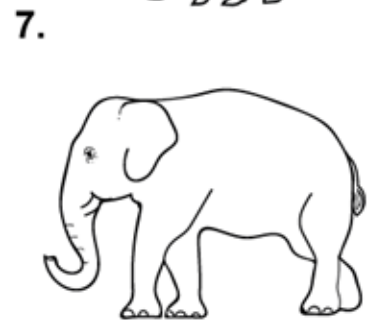
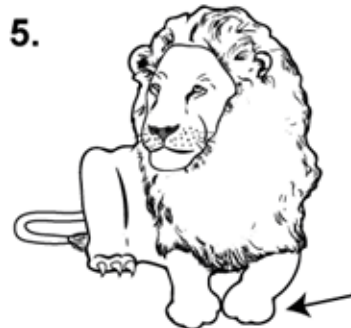
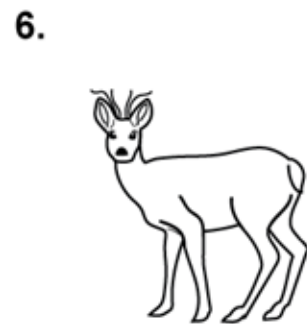
6. tusks



7. fins

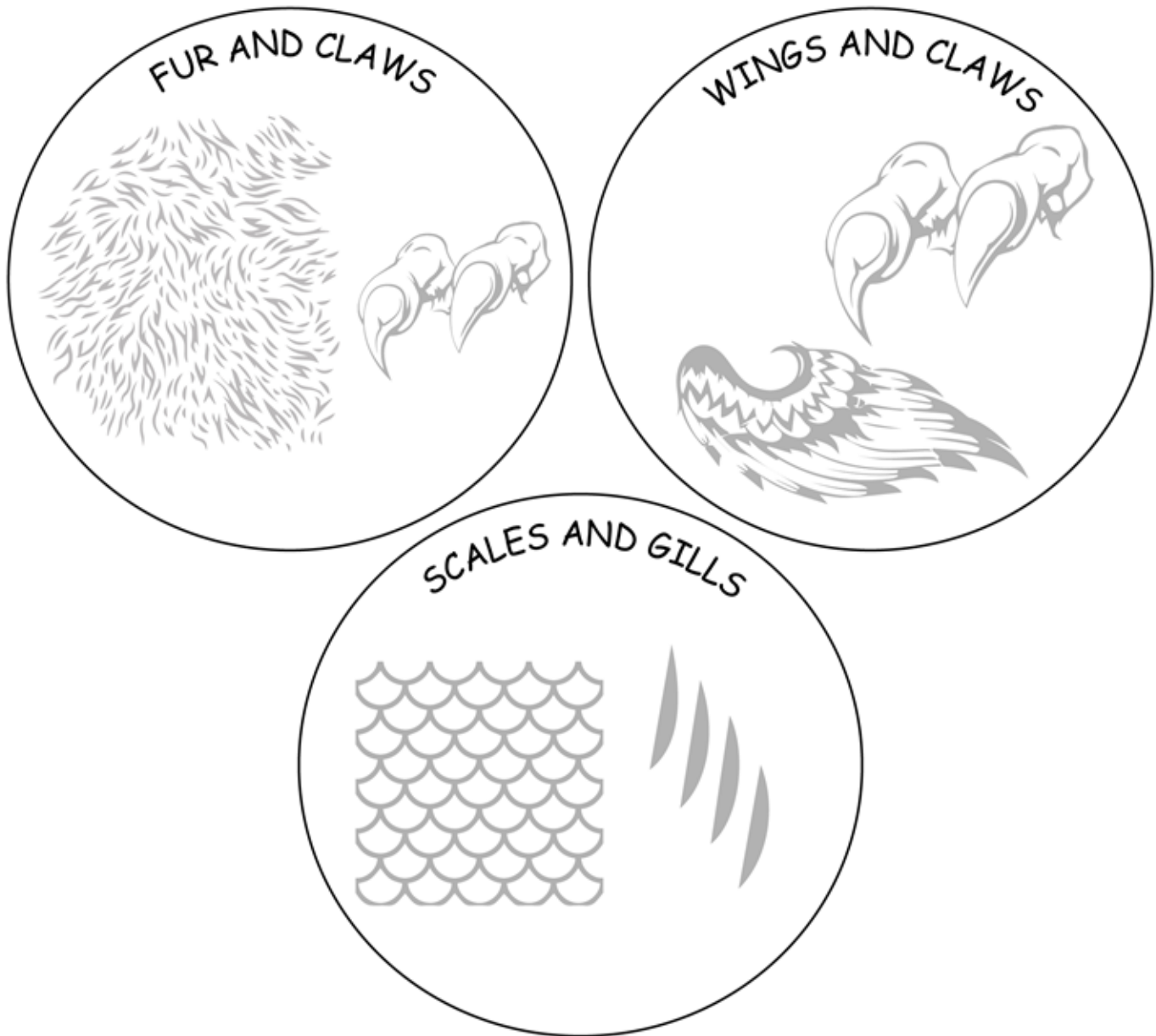












**Directions:** Draw the missing body parts on each animal.



# Animal Sort

**Directions:** Place the animals in the correct circles. (Some animals may not work in any circle.)

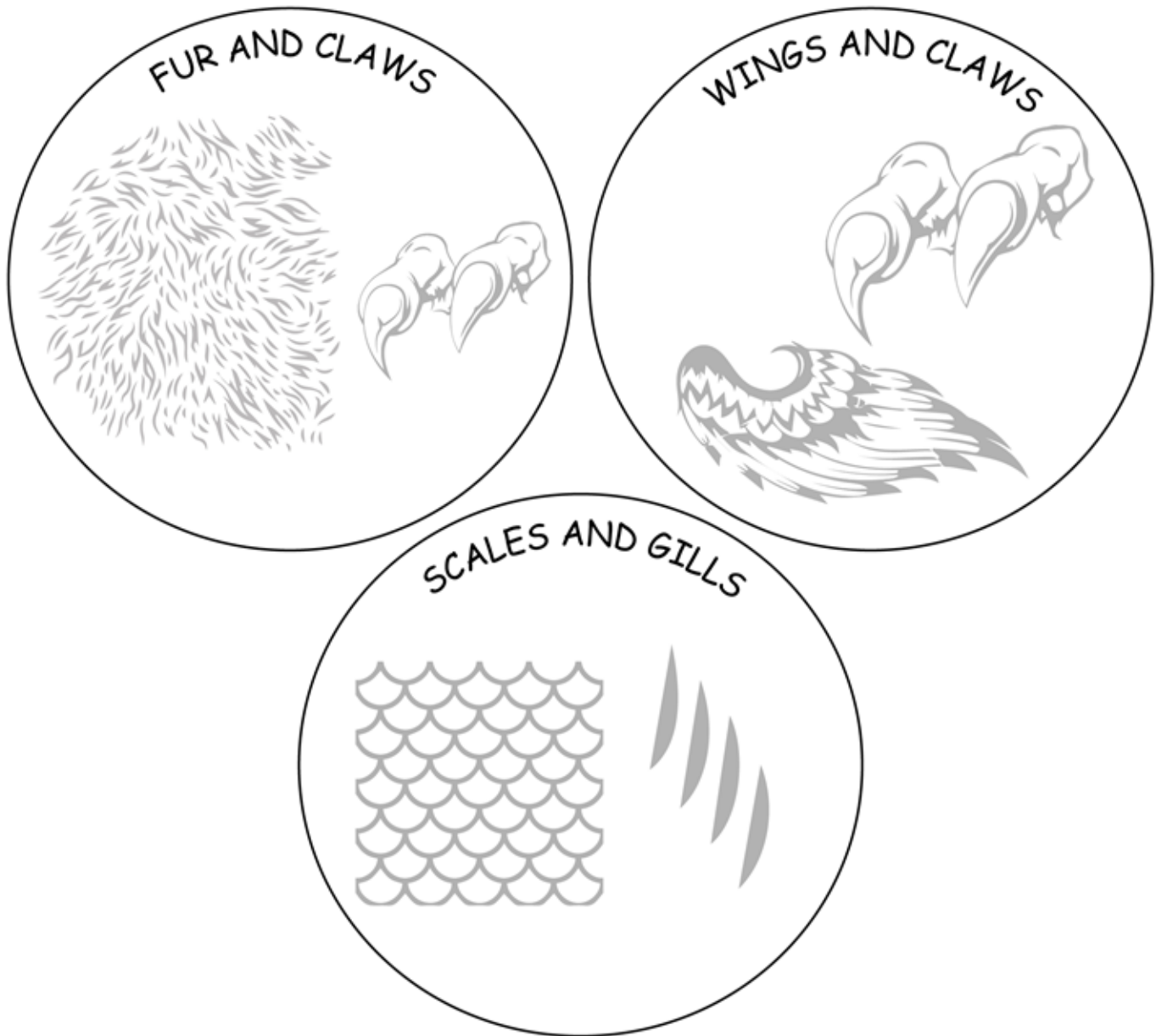


|   |   |   |  |  |
|---|---|---|--|--|
|  tiger |  swordfish |  vulture |  whale |  monkey |
|  snake |  lizard    |  catfish |  eagle |  bear   |



# Animal Sort

**Directions:** Place the animals in the correct circles. (Some animals may not work in any circle.)



|       |           |         |       |        |
|-------|-----------|---------|-------|--------|
| tiger | swordfish | vulture | whale | monkey |
| snake | lizard    | catfish | eagle | bear   |