



FEATHER DISCOVERY

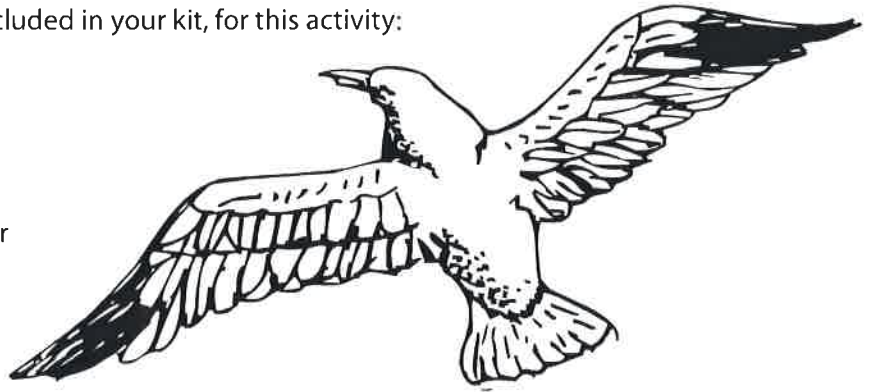


All feathers included with the Activity Kit have been cleaned and sanitized, so they are completely safe to hold and touch. However, you may choose to leave them in the bags they have been sent in for their protection and easy identification.

This activity will allow your participants to apply the information they have now learned about feathers. In addition, participants will see real feathers found among birds in the wild. Feel free to add your own questions or discussion topics to this activity. For more activities that accompany the "Birds of a Feather" Activity Kit, see the Instructor's Manual.

Use the following feathers, which have been included in your kit, for this activity:

- Bronze Barred Turkey Quill Feather
- Down Feathers from Waterfowl
- Grey Goose Pointer Feather
- Guinea Rooster Round Feather
- Half-White Duck Pointer Feather
- Lady Amherst Pheasant Red Top Feather
- Peacock Feathers with "Eyes"
- Ring Neck Pheasant Plumage
- Ring Neck Pheasant Tail Feather
- Silver Pheasant Tail Feathers



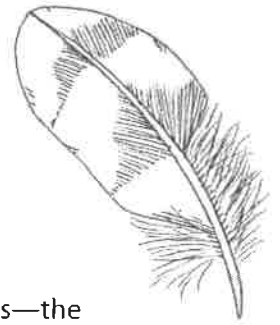
Begin by reviewing the six types of feathers: contour, down, semiplume, filoplume, bristle, and powder down. Talk about a few distinct features of each type. Only contour and down feathers have been included in this kit due to availability, however, you may choose to show illustrations of the other four types or discuss their similarities and differences.

At this point, do not allow any of the participants to see what these feathers are called or what animal they are from. Lay the feathers out on a table (with labels down) or hold them up to the group to give each participant a chance to view each feather up close. After the participants have seen their first glimpses of the feathers, ask the following questions...

- What traits about each feather stand out initially?
- In what ways are the feathers different? How are all the feathers similar? What are their common features?
- In what ways are certain feathers similar? (*Show the Bronze Barred Turkey Quill and the Ring Neck Pheasant Tail Feather, or the Half-White Duck Pointer and the Grey Goose Pointer, or the Ring Neck Pheasant Plumage and Silver Pheasant Tails.*)
- Take a few minutes to let everyone observe each feather a bit more closely (still without seeing the names) to note the color, size, shape, texture, etc. Let the participants comment on each feather. What is the most interesting about each? With each feather, let the participants guess what kind of bird it is from, what type of feather it is, and what part of the body it is from. Discuss the answers given in the chart below.

FEATHER NAME & ANIMAL	TYPE	PART OF BODY
Bronze Barred Turkey Quill Feather	Contour (Flight)	Wing (Remige)
Down Feathers from Waterfowl	Down	Body
Grey Goose Pointer Feather	Contour (Flight)	Wing (Remige)
Guinea Rooster Round Feather	Contour (Flight)	Wing (Remige)
Half-White Duck Pointer Feather	Contour (Flight)	Wing (Remige)
Lady Amherst Red Top Feather	Contour	Tail (Retrice)
Peacock Feathers with "Eyes"	Contour	Tail (Retrice)
Ring Neck Pheasant Plumage	Contour	Body
Ring Neck Pheasant Tail Feather	Contour (Flight)	Tail (Retrice)
Silver Pheasant Tail Feathers	Contour (Flight)	Tail (Retrice)

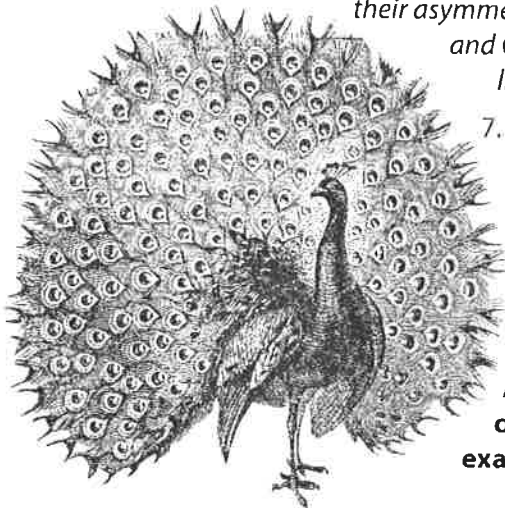
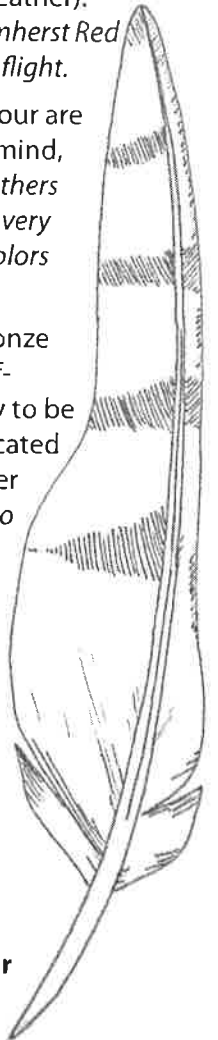
Now, pass out the feathers for each participant to see close up. Each child can look at his or her own or they can be shared between partners or groups. Here are some topics to discuss and questions to ask...



- 1. Identifying the Parts of a Feather.** Call out the parts of the feather, or read off the questions below. Make it a game for points, or play it like "Simon Says."
 - Locate the rachis of each feather.
 - Locate the barbs.
 - Point to the vanes of each feather. What parts make up the vanes?
 - Point to the part known as the calamus. Point to the quill. (Those are trick questions—the calamus and quill are the same thing!)
 - Raise your hand if your feather has "afterfeather" (downy barbs on the underside of the feather).
- 2. Comparing Birds and Humans.** Look at the Ring Neck Pheasant Plumage. These small feathers covered all different parts of the body. What, on humans, is similar to these feathers? *Small hairs covering the skin's surface.* What purpose do these feathers serve? *They give the bird form and contour, and in addition, the "fluffy" part of the feather helps down and powder feathers catch dirt and keep the bird clean. The small hairs that cover the skin of humans prevent dirt and germs from entering the body.*



- 3. Observing Down Feathers.** Look at the down feathers. What about their texture makes them different than all the other feathers? *They are soft, with long, fluffy, "unzipped" barbules.* What do you think this type of feather is commonly used for by humans? *Down feathers are commonly used for padding in pillows and comforters because they are very soft.* NOTE: The down feathers included in this kit are not identical to the down feather definition given in the instructor's manual, rather they will have parts that look more like contour feathers. However, the most "downy" parts of these feathers represent the texture and look of down feathers accurately.
- 4. Comparing and Contrasting Contour Feathers.** Look at the four different types of tail feathers (Lady Amherst Red Top Feather, Peacock Feathers with "Eyes," Ring Neck Pheasant Tail Feather, and Silver Pheasant Tail Feather). Which most likely help control flight and which are decorative? *The Peacock Feather and Lady Amherst Red Top are only decorative feathers—these animals have other tail feathers that are used for steering in flight.*
- 5. Evaluating Feathers From Similar Birds.** Continuing to look at the tail feathers, keep in mind that all four are from different species of pheasant (even the peacock is a relative of the pheasant). With that in mind, why might four feathers from four different species of the same type of bird be so different? *Feathers are often used for camouflage or blending in with surroundings, so these birds probably come from very different environments.* On the other hand, how are they similar? *All have beautiful and distinct colors and patterns.*
- 6. Considering the Purpose of Wing Feathers.** Take a look at the four different types of wing feathers (Bronze Barred Turkey Quill Feather, Grey Goose Pointer Feather, Guinea Rooster Round Feather, and Half-White Duck Pointer Feather). Based on their shape and symmetry, which feathers are more likely to be primaries, and which are more likely secondaries? (Hint: Remember that primary feathers are located on the outer edge of the wing and must therefore have one vane that is far smaller than the other for flight purposes.) *Half-White Duck Pointers and Grey Goose Pointers are probably primaries due to their asymmetrical (uneven) design, while the Bronze Barred Turkey Quill and Guinea Rooster Round are more rounded and therefore more likely to be secondary feathers.*



- 7. Examining Peacock Feathers.** Take a look at the peacock feathers. Which part of the feather do you think has barbules and hooklets holding the barbs together? Which parts don't? *The "eye" area of the feather has barbules and hooklets holding the barbs together to make it seem more solid, while the barbs on the side are loose.*

Add your own questions or ask different questions, observe birds flying to see how they use their feathers, or examine feathers from other birds. Enjoy!