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Macaw Feather Investigation

Have you seen the blue-and-yellow macaws that live in the Academy's indoor rainforest? Take a close-up look at their feathers and use your observation skills to sketch your own feather.

Materials

Pictures of macaw feathers (page 3-4)
Colored pencils, markers, or crayons
Piece of paper

Directions

1. **Print** or look at the images of the feathers on pages 3-4, and **read** the information on feather anatomy on page 2.
2. **Think** about the following five questions as you investigate the pictures. Share your answers with a friend or family member or just think in your head.
    a. What do you notice about the shape of the feather? Is it similar or different from other feathers you've seen?
    b. Do you think all of the macaw's feathers are shaped this way? Why or why not?
    c. How might the anatomy of the macaw's feathers help it stay dry in the rainforest?
    d. What colors do you see? Why do you think macaws have such brightly colored feathers?
    e. What else can you guess about the macaw just by looking at its feather?
3. **Use** your coloring materials and a blank piece of paper to sketch your own feathers. Try sketching a wing feather with smooth edges and a downy feather that would keep a bird warm.

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Feather anatomy

While the feathers that grow on a bird's wing, tail, and body are shaped differently, they all share the same basic anatomy. The center of the feather is called the *rachis*, which branches off into *barbs*. Along the barbs are small *barbules* that interlock with neighboring barbules to provide a smooth, uniform surface. These microscopic hooks form a barrier against wind and water, allowing birds to fly and stay dry. Some feathers are fluffy and lack interlocking barbules; these help insulate the bird and keep them warm.

Do you see the two areas where the barbules have split in the photo below? Birds have a form of grooming called *preening* that helps restore the interlocking structure.

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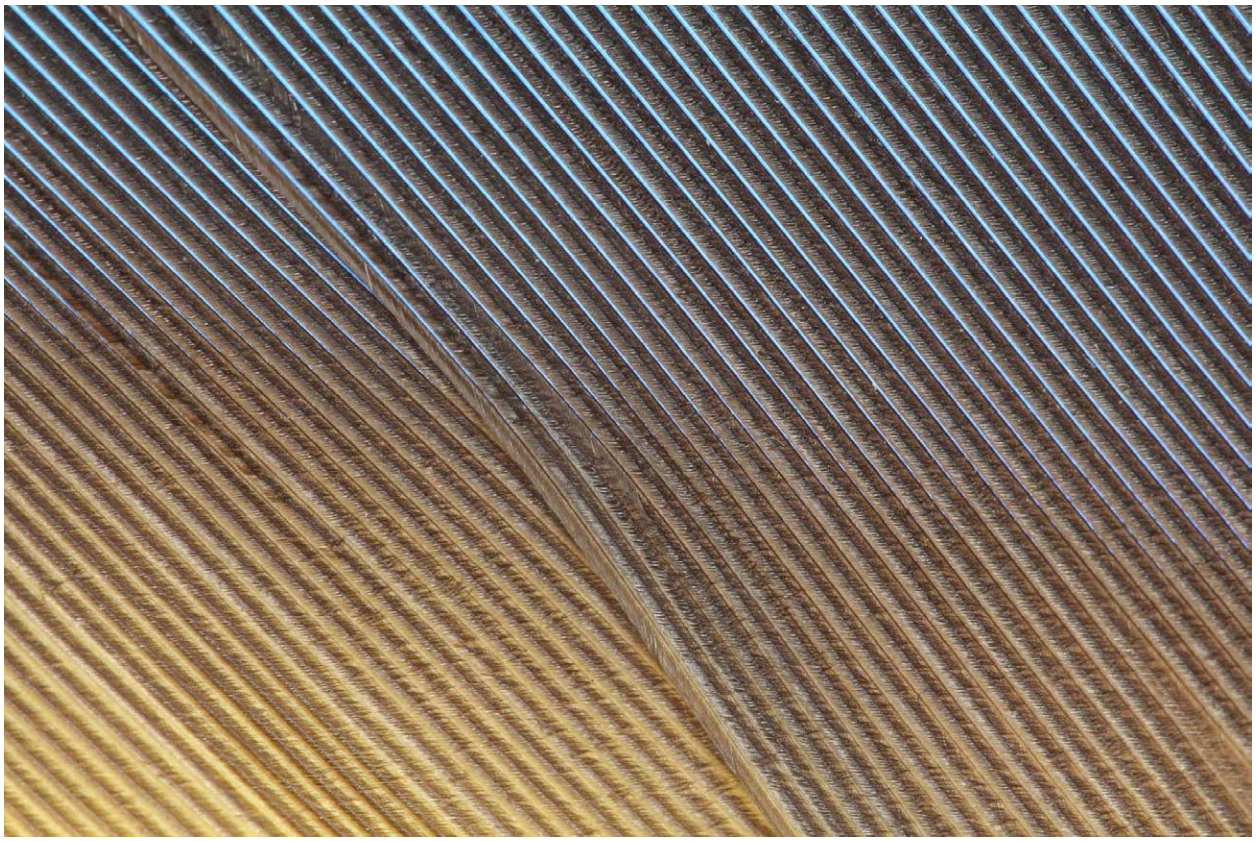

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