

Session 3, Reading Selection #1

You have seen birds use their wings to fly. Do you know what else they use? Read the article below. Use information from the article to answer the questions that follow.

Feet for Flight

by Michael L. May

- 1 Birds fly with their wings, right? But did you know that many birds also use their feet to fly? Some birds need them for takeoffs and landings. Other birds use their feet to control flight speed or body temperature.
- 2 In order for the American coot to get off the ground, it must make a running start across the water. Other birds, such as the mallard duck, can jump right out of the water and into flight. But coots are too heavy and need to build up speed. Like an airplane rolling down the runway, a coot runs across the surface of the water until it reaches flight speed, then lifts off and flaps away.
- 3 Being airborne doesn't mean that the footwork is over. Some birds use their feet to slow down in flight. Now, it might seem that a bird could just stop flapping its wings and reduce speed. But it's not that simple. If you stop pedaling your bicycle when you're going downhill, you'll eventually slow down when you reach the bottom. But you still need brakes. Without brakes, flying birds and speeding bicycles can't stop fast enough.



- 4 One bird that uses its feet as air brakes is the graylag goose. When this bird comes in for a landing, it dangles its feet like small parachutes. The rushing air pushes against the broad, webbed feet and slows the goose down, allowing it to make a smooth landing in the water.
- 5 For some birds, even air brakes are not enough. Mute swans extend their webbed feet forward when landing. When their feet hit the water, the swans ski across the surface until they gradually slow and plop safely into the pond or lake.
- 6 Flying is a tough business that requires lots of energy. Because birds work hard when they fly, they get hot. And if they can't cool down, they overheat like a car on a hot summer day. During flight, hot blood flows

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into their feet from the body. The wind cools the feet off, and the feet cool the blood before it returns to the bird's body, much as a radiator cools a car engine. Pigeons can release over half of their extra heat through their feet. Herring gulls rely on their feet to remove 80 percent of the heat generated by flight.

- 7 So bird flight is more than just feathers and wings. It's feet, too. Whether taking off or landing, reducing speed or body temperature, birds depend on their feet for flight.

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Session 3, Multiple-Choice Questions

Read the question in the box below.

Birds fly with their wings, right?

- 29 The author PROBABLY begins the article with the question in the box above
- A. because he wants an answer.
 - B. because it is about birds.
 - C. to state the main idea.
 - D. to gain the reader's attention.

Reporting Category/Learning Standard for Item 29: *Literature/Learning Standard 13*

- 30 According to the article, bird feet can be used like
- A. brakes.
 - B. car engines.
 - C. wings.
 - D. airport runways.

Reporting Category/Learning Standard for Item 30: *Literature/Learning Standard 8*

- 31 In paragraph 4, the author writes, "it dangles its feet like small parachutes." This is an example of a
- A. synonym.
 - B. simile.
 - C. summary.
 - D. subject.

Reporting Category/Learning Standard for Item 31: *Literature/Learning Standard 15*

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- 32 According to the article, how are the American coot, the graylag goose, and the mute swan similar?
- A. the way they take off
 - B. their weight and size
 - C. they use their feet for flight
 - D. the way they land in water

Reporting Category/Learning Standard for Item 32: Literature/Learning Standard 8

- 33 The author compares a bird's feet during flight to a car's
- A. bumper.
 - B. radiator.
 - C. trunk.
 - D. hood.

Reporting Category/Learning Standard for Item 33: Literature/Learning Standard 8

- 34 The last sentence in the article is important because it
- A. summarizes the main points of the article.
 - B. asks questions to be answered in the next selection.
 - C. gives new information about feathers and wings.
 - D. tells you what to do about bird's feathers.

Reporting Category/Learning Standard for Item 34: Literature/Learning Standard 13

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Read the sentence in the box below.

Herring gulls rely on their feet to remove 80 percent of the heat generated by flight.

- 35 In the sentence in the box above, the word *generated* means
- A. caused.
 - B. used.
 - C. stopped.
 - D. allowed.

Reporting Category/Learning Standard for Item 35: *Language/Learning Standard 5*

Session 3, Open-Response Question

- 36 Describe THREE ways that birds use their feet in flight. Use information from the article to support your answer.

Reporting Category/Learning Standard for Item 36: Literature/Learning Standard 8