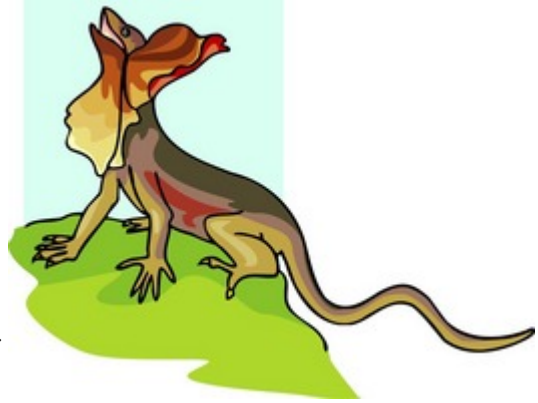


Endotherm or Ectotherm?

By Cindy Grigg

¹ There are five major groups of vertebrate animals. Fish, amphibians, reptiles, birds, and mammals are all vertebrates that share some common characteristics. They are different, too. One of these differences is the way their body temperature is controlled.



² Mammals and birds have a body temperature that stays about the same no matter what the temperature of their environment is.

Mammals and birds are called endotherms. An endotherm is an animal that can control its internal body temperature. Endotherms' body temperature is usually much warmer than the temperature of the environment and usually stays about the same temperature. Endotherms are called “warm-blooded” animals.

³ The other three vertebrate groups are often called “cold-blooded” animals. This term is falling out of favor with scientists because it is misleading. They are called, instead, ectotherms. The blood of fish, amphibians, and reptiles is often warm. Their body temperatures are close to the temperature of their environment. If the environment is cold, the animal must move to a warmer place. If the environment is too warm, the animal must move into a cooler place.

⁴ For example, a seal is an endotherm. A seal's body temperature stays about the same, whether it is swimming in a cold ocean or lying in the sun on a beach. An alligator is an ectotherm. The alligator's temperature is higher when it is lying in the sun on a riverbank, and its body temperature is cooler when the alligator moves into cool water.

⁵ How do endotherms regulate their body temperature? They have adaptations that help them do this. Sweat glands help keep endotherms cool. When an endotherm gets hot, the sweat evaporates and cools the animal's skin. Fur and feathers are another adaptation to regulate body temperature. These specialized skin coverings help the animals stay warm. Since ectotherms have a stable body temperature, they can live in a wide variety of environments. Ectotherms are more limited in their choice of environment because they are dependent on the environmental temperature.

⁶ Another adaptation to control body temperature that endotherms have is the ability to shiver. This involuntary movement of your muscles when you get cold

burns calories. Heat is released. Shivering helps keep your body warm. This is an example of a metabolic way that endotherms can regulate their body temperature. However, this ability comes at a cost. Since energy must be used to maintain the animal's body temperature, more energy is required for the animal to live.

⁷ In contrast, ectotherms rely on behavior to regulate their body temperature. They must move their bodies into the shade or sun to cool down or warm up. This requires less energy than constant metabolic regulation. This is why many reptiles and other ectotherms can eat one large meal and not eat again for some time.

Name _____

Science Pd: _____

Endotherm or Ectotherm?

<p>1. What is an ectotherm?</p> <p><input type="radio"/> A An animal who can maintain a stable body temperature internally</p> <p><input type="radio"/> B An animal whose body temperature changes depending on the temperature of the environment</p> <p><input type="radio"/> C A weird life form from outer space</p>	<p>2. An endotherm is:</p> <p><input type="radio"/> A An animal who can maintain a stable body temperature internally</p> <p><input type="radio"/> B An animal whose body temperature changes depending on the temperature of the environment</p> <p><input type="radio"/> C A weird life form from outer space</p>
<p>3. Which groups of vertebrate animals are ectotherms?</p> <p>_____</p> <p>_____</p>	<p>4. Which groups of vertebrate animals are endotherms?</p> <p>_____</p> <p>_____</p>

