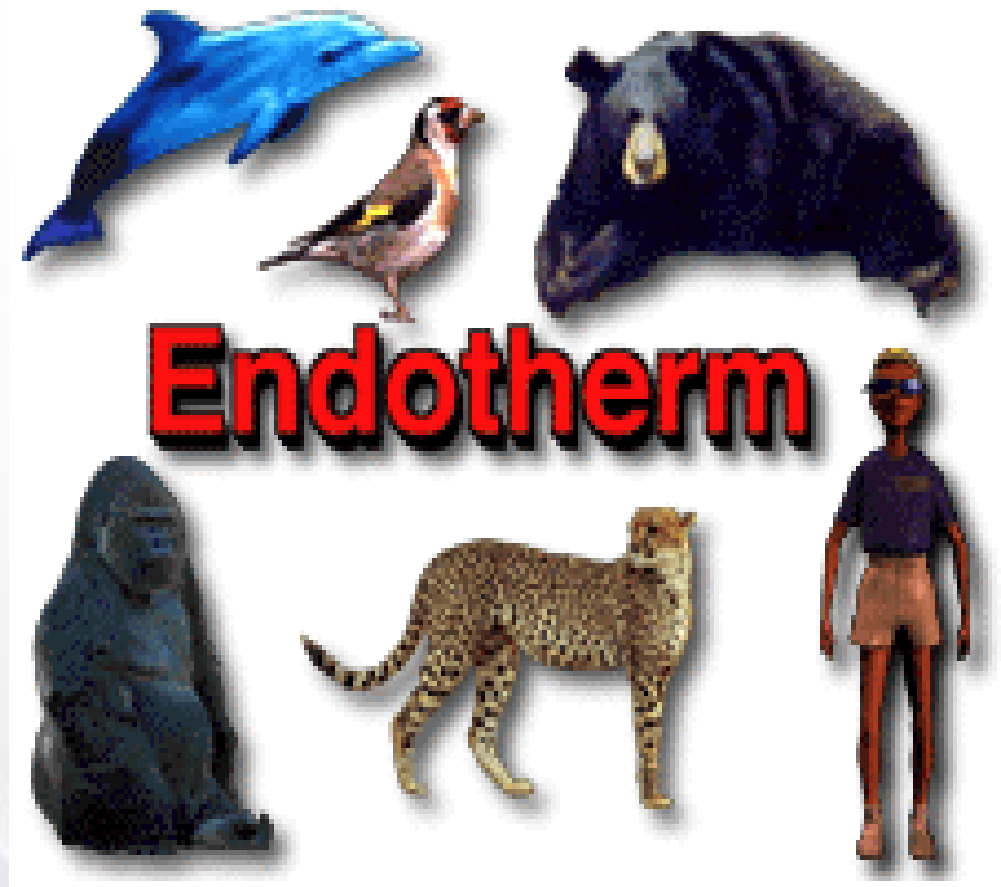


# Endotherms & Ectotherms

Chapter 3

# Endotherms

- Endotherms are animals that warm their bodies mainly from their own metabolism.
  - We call these animals warm-blooded.
  - Maintain a constant body temperature regardless of changes in the surrounding temperature.



# How do endotherms adapt?



- **Fat** layers, fur, and feathers insulate the body and retain heat.
- Shivering muscles contract to increase body heat.
- Some animals hibernate. Hibernation enables animals to survive long periods of cold and lack of food.
- Canines, like this Brittany, use panting as a means of temperature regulation.

# Ectotherms

- Ectotherms are animals that warm their bodies **by absorbing** heat from their surroundings.
  - We call these animals cold-blooded
  - Body temperature fluctuates with changes in the surrounding temperature.

# How do ectotherms adapt?

- Most marine fish and **invertebrates**, however, live in water that stays the same temperature.
- When the weather is warm, they become active. They slow down when the temperature drops.



# How do ectotherms adapt?

- To warm up, reptiles find sunny places, and stretch out for maximum exposure. If it gets too warm, lizards alternate between sun and shade.
- Amphibians warm up by moving into the sun or diving into warm water. They cool off by entering the shade.



# Homeostasis

Definition

Maintenance of constant internal conditions in the face of a varying external environment

## Endotherms

## Ectotherms

animals that warm their bodies mainly from their own metabolism

How do endotherms adapt?

animals that warm their bodies by absorbing heat from their surroundings

How do ectotherms adapt?

Warm-blooded

Body temp the same regardless of weather

**Fat** layers, fur, and feathers

**Shivering** Muscles

Hibernation

Cold-blooded

Body Temp changes with weather

warm up by moving into the sun or diving into warm water

weather is warm, they become active. They slow down when the temperature drops.

cool off by entering the shade