What Are Behavioral Adaptations?

Chapter 3 Lesson 3
Part 1

ByDesign Science, Level 5
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Behavior in Animals

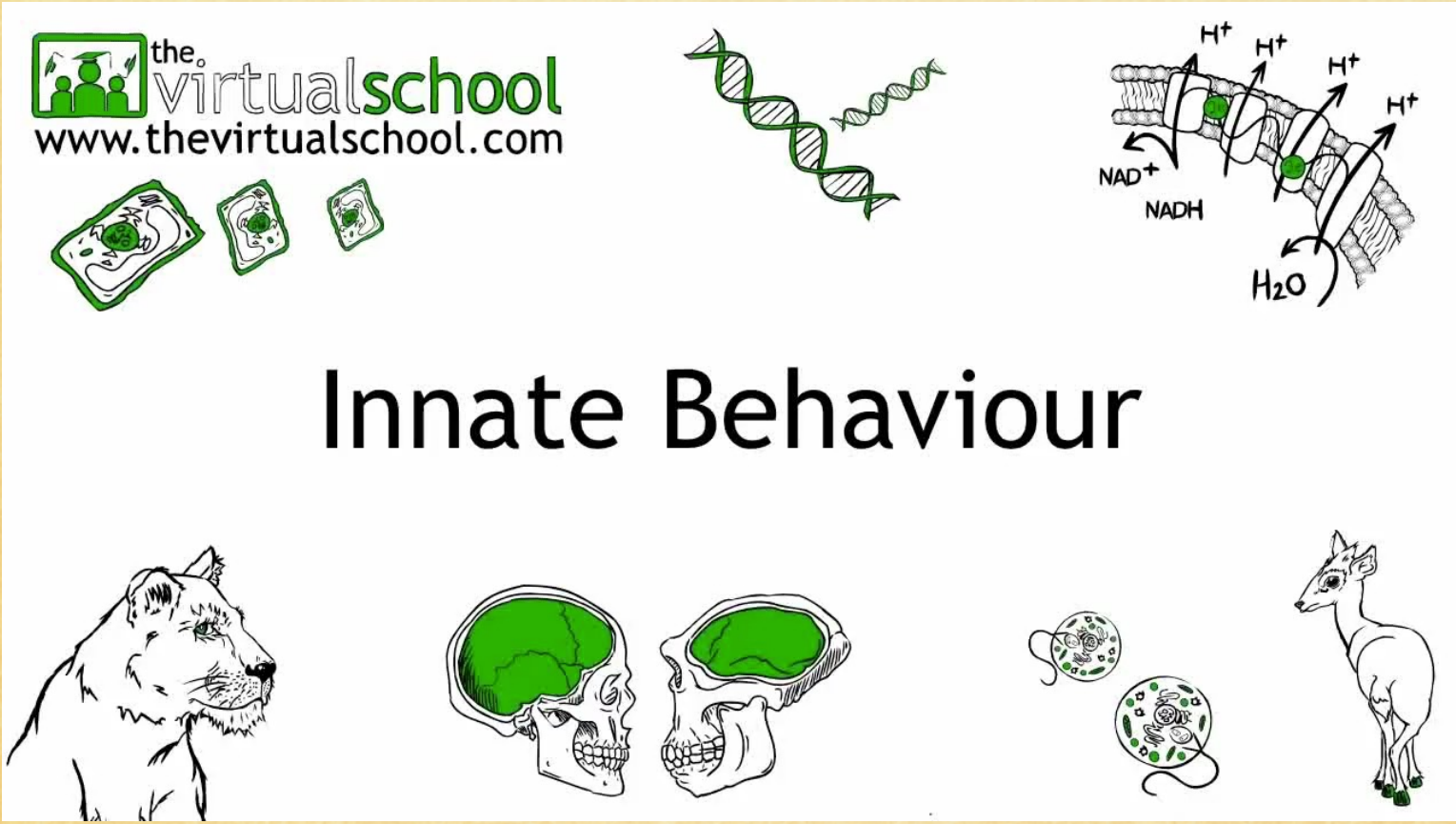
- Can you think of any animal behaviors that seem unusual to you?
- Why do you think that animal behaves that way?

- Animals act or behave in many ways.
- **Behavior** is the way an animal acts in response to a signal or stimulus from something in its internal or external environment.
- An animal's actions are a combination of behaviors it is born with and those it learns.

Innate Behavior

- What behaviors were you born with?
- What behaviors did you learn from your parents?
- What behaviors have you learned from experience?
- Scientists describe any inborn behavior that an animal knows how to do without being taught as an **innate behavior**.
- There are two types of innate behavior: reflexes and instincts.

Innate Behavior

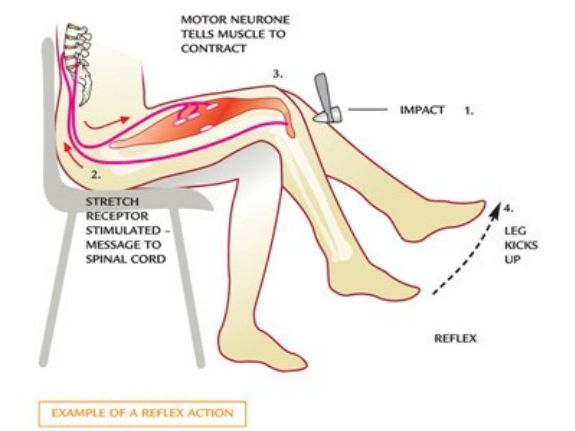


Innate Behavior: Reflex

- A **reflex** is a simple, automatic response by a part of the body to a stimulus.
- Reflexes are controlled by the nervous system in the spinal cord rather than the main part of the brain.
- More complex reflexes involve processing between nerves in your sense organs and your muscles.

Innate Behavior: Reflex

- Many reflexes are protective.
- When you touch a hot object with your hand and immediately yank your hand away, you experience a reflex.



- When the doctor hits your knee with a small hammer, a reflex makes your lower leg jerk forward.
- If someone throws something at your face, you blink and quickly put your hand up to protect yourself.

Innate Behavior: Reflex

Innate Behavior: Instincts

- Many animals are born knowing how to do certain things without being taught.
- These abilities, called **instincts**, are inherited from their parents.

Innate Behavior: Instincts

- Adult sea turtles respond to instinct when they return to the beaches where they were born.
- After nesting and laying the eggs in the warm sand, the female turtle returns to the sea.
- The eggs develop unattended.
- After about 40-70 days, the hatchlings break out of their shells.

Innate Behavior: Instincts

- Many hatchlings climb out of the nest together.
- They use clues such as the slops of the beach and the natural light of the ocean horizon to find their way to the water.

Innate Behavior: Cycles in Behavior

- The timing of many innate biological functions is tied to Earth's 24-hour cycle.
- Your own body, animals, plants, fungi, and even bacteria follow this natural rhythm.
- This cycle, or rhythm, is controlled in the brain.
- It is called *circadian rhythm*.
- Some plants show a daily cycle with flowers opening in daylight and closing at night.

Innate Behavior: Hibernation & Estivation

- What do you do when the weather gets cold?
- Some animals survive by slowing down their body activities.

- During **hibernation**, animals lower their body temperature, heart rate, and breathing rate and become inactive.
- In this way, the animals use less energy and increase their chances of survival.
- If body temperature becomes just a little lower than normal, the animals is easily aroused from sleep.

Innate Behavior: Hibernation & Estivation

Innate Behavior: Hibernation & Estivation

- In hot, dry regions, many animals **estivate** or go into a state of sleep during warmer months.

Innate Behavior: Hibernation & Estivation

Innate Behavior: Migration

- Some animals move each year in large numbers form one place to another in a behavior called *migration*.
- Migration increases an animal's chances of survival when temperatures drop in autumn and the length of daylight shortens.
- Birds are a common migratory animal.

Innate Behavior: Migration

- In large flocks, birds migrate long distances.
- Arctic terns will fly 43,500 miles from Greenland, south to Antarctica, and back again every year.
- Krill migrate several times a day.
- They migrate vertically from the ocean depths, up to the surface, and down again.

Innate Behavior: Migration