Tennessee Aquarium Science Streams

Presented by

of Tennessee

TENNESSEE AMERICAN WATER

Animal Instinct

Video Focus Question: What is the difference between instinct and learned behavior? How can both types of behaviors help species and individuals survive?	**Length of video:** 7 minutes 53 seconds

Science Standards

TN 5.LS4.2	Use evidence to construct an explanation of how variations in characteristics among individuals within a species may provide advantages to these individuals in their survival and reproduction.
TN 5.LS1.1	Compare and contrast animal responses that are instinctual versus those that are gathered through the senses, processed, and stored as memories to guide their actions.
NGSS MS-LS1-4	Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.

Main Learning Goal: Both instinct and learned behaviors help species survive.

Science Content Storyline

Animals have some instincts, which are behaviors they know how to do without being taught, and some learned behaviors, which must be taught or developed. In some cases, behaviors that are instincts for some animals are a learned behavior for other animals. The functions that animals must carry out from birth to survive indicate which behaviors must be instincts for that animal.

Ideal Student Response to Focus Question: An instinct is a behavior an animal is born knowing how to do, like a gazelle walking shortly after birth. Learned behaviors are something an animal learns over time, such as chimpanzees learning to use a stick to get insects out of a hole. These behaviors can help animals find food or get away from predators.

Preparation

In Advance

- Preview the video.
- Determine if you would like students to work individually, in small groups, or as a class when watching the four short video clips.

Materials

Teacher

- Butcher paper or board for brainstorming
- Marker or dry erase marker for brainstorming

Student

- Paper and writing utensil if making their predictions independently

Key Activities and Reflection

Timestamp	Science Content Outline	Guidance to Support Students
0:21	Introduction	Play the introduction for students. Pause the video and ask students what they think the video will be about. For each answer, ask students if they can share what they heard that makes them think the video will include that idea. Accept all answers at this point. Once students have shared their ideas, resume the video.
0:53	Box Turtle Instincts	Play the video to help students learn more about box turtles. Pause at timestamp 1:35 to ask students why it might be important for a box turtle to be able to walk and find food shortly after hatching. Ask probing questions to find out more about why students think their idea is a need that box turtles have. Accept all ideas at this point. Continue playing the video so students can hear the educator more about these behaviors and why they are important. Ask students to compare the reasons they thought of to the reasons given by the educator.
1:57	Instincts versus learned behavior	Allow students to listen as the educator in the video describes additional behaviors that are instincts for animals. Ask if they can think of any additional examples. Hold a class discussion to ensure that students understand the difference between an instinct and learned behavior. If you need to, rewind the video to timestamp 1:35 and have students watch the educator's explanation of instinct and learned behaviors using the box turtle and birds as examples again. Ask students to describe instincts and learned behavior in their own words and give an example for each. Ensuring that they understand both types of behavior will set them up for success as they watch the upcoming video clips.

2:37	Observing animal behaviors	In the next section of the video, students will have an opportunity to observe some animal behaviors and decide if each is an instinct or a learned behavior. If you choose to have students work individually, they will need paper and a writing utensil to make notes about their thoughts. If you prefer they work in small groups, make sure at least one person in each group is ready to take notes on the group's thoughts. If you are doing this activity together as a class, be prepared to keep track of the class's ideas on a chart or the board. Play through the clips one time as the educator describes what is happening in each scene. There are four clips and you may want to write the following brief descriptions on the board so students can remember what they observed. • a cuttlefish swimming as soon as it hatches • a dog being trained to sit • a gazelle starting to walk a few minutes after birth • chimpanzees using a stick to gather ants for a snack Pause the video at timestamp 3:45 and allow students to write down if they think each behavior is an instinct or is learned and why they chose the answer they did. Hold a brief class discussion to gather their ideas about each clip. Make some notes for each about the students' ideas. Accept all answers at this point.
3:45	Instincts and learned behaviors	Show the students the next part of the video so they can hear the educator describe whether each of the four behaviors is an instinct or a learned behavior. Pause the video at timestamp 5:34. Discuss whether the students' ideas about each of the four videos was correct. Ask probing questions to ensure that they understand why each behavior was categorized the way it was and that most behaviors are complex and do not easily fit into the instinct or learned category.
5:34	Instincts and learned behaviors are important	Ask students to think about and share why they think both instincts and learned behavior might be important for animals. Probe students to explain what details or information support their ideas. Then show students the video through timestamp 7:08. Hold a class discussion to talk about animal behaviors they have observed and whether students think those behaviors are learned or instinct. Offer up a few animal behaviors and ask whether they are important for animals to know how to do from birth or if they can be learned over time. Be sure to include some of the same behaviors for different animals. For example, walking for a sea turtle is an instinct as they are on their own and need to get to the ocean quickly after birth, while human babies can learn to walk over a long time because their parents care for them.
7:08-7:28	Conclusion	Play the conclusion of the video to challenge students to watch animals and look for different behaviors that could be either instinct or learned.

Extension Activities

- Each of the videos in the Science Streams series has an introduction by people in different departments at the Aquarium. This offers an opportunity to talk about the many different types of jobs it takes to run an aquarium.
- Ask students to watch an animal (squirrel, ant, pet, etc.) and describe at least 3 behaviors they see. Based on what they observe and know about the animal, have students explain if they think the behavior is an instinct, learned, or a combination and what they observed that supports this theory.
- Ask students to watch different individuals of the same species and record the behaviors they observe. Based on what they have seen, did all the individuals they watch act the same? How could the similarities and differences in their behavior impact their survival?
- Have students create a timeline of key milestones for several different animals. Students can research milestones including get their own food, walk/swim, live independently, and others. Have them place each milestone for each species they researched on the timeline. What does this information tell them about the animals they researched? What conclusions can they draw from these milestones as to whether these behaviors are instincts or learned behaviors? Students can present their findings to the class through either a presentation or a timeline poster presentation/walk through.