

# SCIENCE·3D

## SHARK WORLD

In this packet, sample student answers are provided in **red** and notes to teachers are in **blue**.

This **Explore Your Backyard** activity will have students reinforce their understanding of sensory systems by investigating local animals. If possible, have students observe an animal on a field trip to a local park or natural area, or outside their home or school. Alternatively, they can pick an animal from their local environment to research. They will enhance their writing skills by comparing and contrasting sharks and local animals.



Sensory systems are critical for animals. They help them move around, find food, avoid predators and other dangers, and find mates. The sensory systems of animals are adapted to their environmental conditions. Sometimes, human changes to the environment might disrupt their sensory systems and cause problems for the animals.

1. List the main sensory systems.

- a. Touch
- b. Taste
- c. Hearing
- d. Vision
- e. Smell

2. Are there other sensory systems that some animals have that humans don't? *Hint: think sharks!*

Yes, sharks can detect electric fields. Some students might mention echolocation; this could be considered part of hearing, but this answer should be accepted.

3. Choose an animal you saw or researched during your investigation.

The animal I chose is a bumble bee.

Its habitat is a meadow.

It has large eyes to see its environment and find flowers.

It has antenna to touch its environment.

4. **Draw** the animal that you are studying on a poster or create a computer presentation. Your diagram should label the animal's sensory systems. For each sensory system, **describe**:

- a) what each sensory system is used for
- b) how the sensory system works (how does the animal detect and process a signal from the environment?)
- c) how the animal's environment influences its sensory systems.

Then present your project to the class.

5. Choose one other animal that another student or group investigated. Write an essay to **compare** and **contrast** the sensory systems of these animals. Some questions to think about: Do they both use their senses in the same way? Is one sensory system (for example, hearing) more important to one animal or the other?

Complete essays should include

1. consideration of all main senses
2. mention any special sense that one animal might have that the other does not
3. consideration of similarities and differences

Humans can change the environment in many ways. Waters can turn from clear to murky when there is runoff into rivers or the bottom is dug up to make it deeper for ships. Noise from construction or ships can be disruptive to land and underwater habitats. Chemicals can be released into the air and the water.

6. Choose one way that humans change environments. Write a short essay that describes the change and predicts how it will affect animals' sensory systems. Include how the change could influence the survival or behavior of the animal.

Complete essays should include:

1. a description of the human impact
2. a description of the sensory system that is affected
3. a plausible effect on the animal