MAKING SENSE OF SENSES

OBJECTIVE:
To understand how our senses help us perform the necessary functions of living, and to draw attention to how we use our senses every day.

MATERIALS:
Chalkboard/Whiteboard

PROCEDURE:
1. Have the class identify the five external senses: sight, hearing, taste, touch, and smell. Write the senses on the board.
2. Ask the students to consider how they have used each of the senses today. Write some of the answers by each sense.
3. Have the students imagine they are ‘cave people’ living thousands of years ago. How would a cave person use his five senses? Why would he need his senses? (Ex: he may hear a bear sneaking around his camp and be better prepared to defend himself or his food.) Would the cave person have a hard time surviving without any of his senses?
4. Now have students imagine they are ‘future people’ living in the year 3000. How will people use their senses in the future? Will we still need our senses to survive? (Ex: cars will be controlled by computers and magnets so we will not need to be able to see to know where we’re going.)

DID YOU KNOW:
Our brains are responsible for sending and receiving millions of signals, or ‘messages’, every second of our lives. Many of the messages received by the brain are interpreted by us as our senses.
Humans have developed senses that help us interpret the world and gather information we need to survive. Different animals have developed different senses based on what they need to survive. Here are a couple examples of amazing animal senses:
• Bats can find food (insects) up to 18 ft. away and get information about the type of insect using their sense of echolocation.
• Worker honey bees have 5,500 lenses (ommatidia) in each eye.
• A butterfly has chemoreceptors (taste receptors) on its feet.
• A buzzard’s retina has 1 million photoreceptors per sq. mm and can see small rodents from a height of 15,000 ft.
• The eyes of the chameleon can move independently of each other. Therefore, it can see in two different directions at the same time.
• Crickets can hear using their legs; sound waves vibrate a thin membrane on the cricket's front legs.
• A dog has an olfactory membrane up to 150 sq. cm, which is far larger than 4 cm olfactory membrane of a human.
• An elephant has a hearing range between 1 and 20,000 Hz. The very low frequency sounds are in the infrasound range, which cannot be heard by humans.
For more information about amazing animal senses visit:
http://faculty.washington.edu/chudler/amaze.html
EXTENSION:
1. What other animals can you think of that have amazing senses? Choose an animal to study and examine how its senses are different from humans. How do the senses help that animal survive? How well would the animal do if it had human senses?

2. Have the students write their name and address or the words to ‘Happy Birthday’ on a sheet of scrap paper. Then have them close their eyes and try writing it again. Why is it more difficult to write with your eyes closed? How does our sense of sight help us perform simple functions such as writing? Where do the signals come from and where are they sent when writing? (Your eye sees the paper and sends a message to your brain, which interprets that information and sends signals to control the muscles in your hand.) What other functions do we typically perform with our hands that would be challenging without the sense of sight?

Try watching one or two minutes of a video with the sound turned off. Have the students discuss in detail what they think is happening in the video. Why do they think so? What sense is helping them determine what’s happening? Then watch the same clip again to see what is really going on. What did they get right, and what did they get wrong? What parts of the video were difficult to interpret without their sense of hearing?