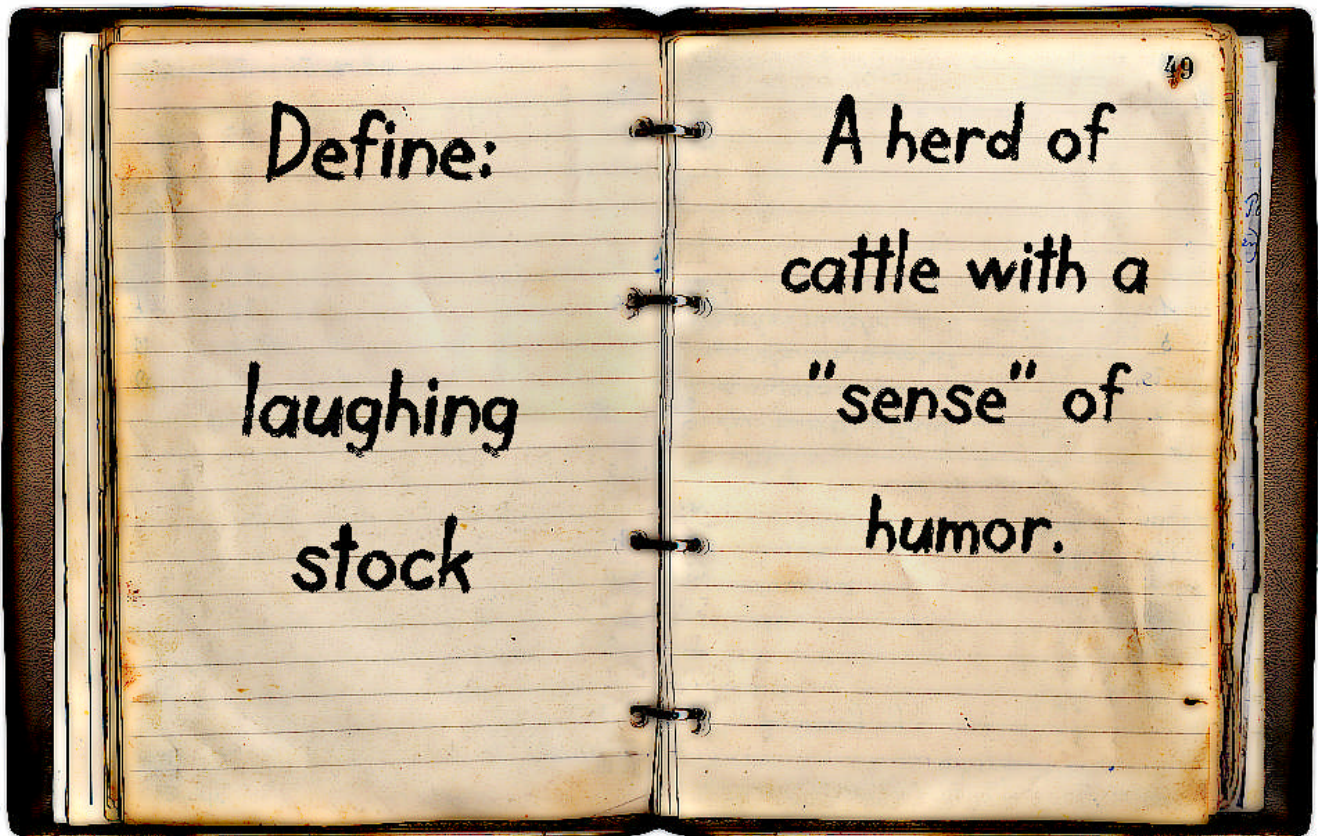


WEEK 23: "OTHER" SENSES



DAY ONE

TODAY, YOU AND YOUR CHILD WILL:

- 1. READ THE TEXT**
 - 2. REVIEW THE TEXT WITH YOUR CHILD**
 - 3. COMPLETE THE STUDENT WORKSHEETS**
 - 4. FIND THE MATERIALS YOU WILL NEED FOR DAYS TWO AND THREE**
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DURING YOUR REVIEW, THE FOLLOWING LIST WILL GIVE YOU THE MOST IMPORTANT PARTS OF YOUR CHILD'S READING FOR THIS WEEK.

EACH PLANT OR ANIMAL HAS DIFFERENT STRUCTURES THAT SERVE DIFFERENT FUNCTIONS IN GROWTH, SURVIVAL, AND REPRODUCTION. FOR EXAMPLE, HUMANS HAVE DISTINCT BODY STRUCTURES FOR WALKING, HOLDING, SEEING, AND TALKING.

IN ADDITION TO OUR EXTERNAL SENSES, WE ALSO HAVE INTERNAL SENSES THAT INFORM US OF WHAT IS GOING ON INSIDE OUR BODIES. FEELINGS SUCH AS HUNGER AND THIRST CANNOT BE SENSED FROM OUTSIDE OF OUR BODIES!

NOT ALL ORGANISMS HAVE THE SAME INTERNAL/EXTERNAL SENSES. SOME ANIMALS HAVE SENSES THAT ARE FOREIGN TO HUMANS. SOME ORGANISMS USE ECHO LOCATION TO MOVE, INFRARED VISION TO SEE AND ELECTRICAL SENSORS TO DETECT MOTION FROM THEIR ENVIRONMENT. PLANTS ALSO HAVE OTHER SENSES IN THAT THEY CAN GROW TOWARDS A STRONG LIGHT SOURCE. THIS IS CALLED PHOTOTROPISM.

DEFINITIONS:

INTERNAL SENSES	TYPES OF FEELINGS WE RECEIVE INSIDE OUR BODY LIKE HUNGER AND THIRST
CANALS	THREE CURVED TUBES IN YOUR EAR THAT ARE FILLED WITH FLUID; ACTS LIKE THE COCHLEA BUT WORKS TO KEEP YOU BALANCED
ECHOLOCATION	“EK-O-LOW-KAY-SHUN”; A WAY FOR SOME ANIMALS (LIKE BATS AND DOLPHINS) TO KEEP FROM BUMPING INTO EVERYTHING BY GIVING OFF SOUNDS AND LISTENING FOR ECHOS
ECHO	THE BOUNCING BACK OF A SOUND WAVE TO THE PERSON WHO MADE THE SOUND
INFRARED	“IN-FRA-RED”; A WAY FOR ANIMALS (LIKE RATTLESNAKES) TO SEE THE HEAT COMING OFF OF THE BODY OF ANOTHER ANIMAL
ELECTRIC SENSE	A WAY FOR SOME ANIMALS, LIKE THE ELECTRIC EEL, TO USE A STRONG ELECTRIC CHARGE TO SEE, MOVE AND TO KILL OTHER ANIMALS
PHOTOTROPISM	“FOE-TOE-TRO-PIZM”; THE ABILITY OF A PLANT TO SENSE THE DIRECTION OF SUNLIGHT AND TO GROW TOWARDS IT

SAMPLE QUESTIONS TO ASK AFTER YOUR CHILD FINISHES THEIR READING FOR DAY ONE:

WHAT ARE SOME OF OUR INTERNAL SENSES?

HUNGER, THIRST AND PAIN ARE ALL INTERNAL SENSES.

WHAT IS THE DIFFERENCE BETWEEN THE COCHLEA AND THE CANALS IN YOUR EAR?

THE COCHLEA IS USED TO DETERMINE SOUNDS WHILE THE CANALS ARE USED FOR BALANCE.

WHEN YOU FEEL DIZZY, WHAT IS HAPPENING INSIDE YOUR CANALS?

THE FLUID INSIDE THE CANALS OF YOUR EAR SWIRLS AROUND WHEN YOU SPIN. ONCE YOU STOP SPINNING, THE FLUID IN YOUR EARS KEEPS ON MOVING. THIS CONFUSES THE BRAIN BECAUSE IT BELIEVES YOU ARE STILL MOVING WHEN YOU ARE NOT!

ANSWERS TO WORKSHEET QUESTIONS FOR WEEK 23:

PAGE ONE:

1. INTERNAL SENSES
2. CANALS
3. ECHOLOCATION
4. ECHO
5. INFRARED
6. ELECTRIC SENSE
7. PHOTOTROPISM

PAGE TWO:

- 7 - INTERNAL SENSES
- 5 - CANALS
- 1 - ECHOLOCATION
- 3 - ECHO
- 4 - INFRARED
- 6 - ELECTRIC SENSE
- 2 - PHOTOTROPISM

PAGE THREE:

"IMAGINE THAT YOU HAVE A SPECIAL SENSE THAT NOBODY ELSE HAS. WHAT SENSE WOULD YOU HAVE? DESCRIBE HOW YOU WOULD USE IT!!!"

ANSWERS WILL VARY

DAY TWO

TODAY, YOU AND YOUR CHILD WILL:

- 1. REVIEW DAY ONE USING THE FOLLOWING TEXT**
- 2. RUN THE ACTIVITY: "SHARK ATTACK"**

THE FOLLOWING LIST WILL GIVE YOU THE MOST IMPORTANT ITEMS TO REVIEW FOR YOUR ACTIVITY TODAY!

IT IS NEARLY IMPOSSIBLE TO UNDERSTAND WHAT IT IS LIKE TO HAVE A SENSE THAT WE, AS HUMANS, DO NOT HAVE. THE ELECTRIC SENSE THAT IS PRESENT IN MANY FISH IS ONE OF THESE SENSES.

NEARLY EVERY LIVING CREATURE EITHER PRODUCES OR REFLECTS A TINY ELECTRIC CHARGE INTO THE ENVIRONMENT. THIS MOVEMENT OF ELECTRIC CURRENT CAN BE USED AS A SENSE AMONG SOME PREDATORS TO LOCATE THEIR PREY.

SHARK ATTACK

CHILDREN WILL SIMULATE HOW A SHARK CAN USE ITS ELECTRICAL SENSE TO FIND FOOD.

MATERIALS:

BLINDFOLD

TWO JARS CONTAINING $\frac{1}{4}$ CUP POPCORN OR A FEW PEBBLES

ACTIVITY:

INFORM THE CHILD THAT HE/SHE WILL BE PRETENDING THEY ARE A SHARK AND WILL BE "HUNTING" FOR THEIR FOOD. IN THIS CASE, THEIR FOOD WILL BE A SHRIMP! MOST SHARKS HAVE AN ELECTRICAL SENSE THAT ALLOWS THEM TO FIND FOOD. HUMANS DO NOT HAVE THIS SENSE, BUT WE CAN PRETEND THAT WE DO!

GIVE ONE OF THE JARS TO THE CHILD. THIS WILL BE YOUR "SHARK". THE SHARK IS TO BE BLINDFOLDED DURING THIS ACTIVITY. THE PARENT (OR SIBLING) WILL BE ACTING AS THE "SHRIMP". THIS PERSON WILL ALSO HAVE A JAR.

HAVE THE SHRIMP HIDE SOMEWHERE IN THE HOUSE OR OUTSIDE.

THE RULES OF THIS GAME ARE SIMPLE...WHENEVER THE SHARK SHAKES ITS JAR, THE SHRIMP MUST SHAKE ITS JAR AS WELL! THE SHARK CAN THEN HUNT DOWN THE SHRIMP BY FOLLOWING ITS SIGNAL. THE GAME IS OVER WHEN THE SHARK IS WITHIN REACH OF THE SHRIMP.

FOR AN EXTRA CHALLENGE, HAVE THE SHRIMP MOVE ONCE DURING EACH ROUND!

EXPLANATION:

SHARKS ARE THE MOST FORMIDABLE PREDATORS OF THE OCEANS. THEY USE THEIR SENSE OF SIGHT, SOUND, SMELL TOUCH AND TASTE AS WELL AS THEIR ELECTRICAL SENSE WHEN HUNTING FOR FOOD. THIS GAME WOULD BE VERY EASY FOR THE CHILD IF THEY WERE ALLOWED TO USE THEIR SENSE OF SIGHT!

THE SHRIMP'S SHAKER SIMULATES THE ELECTRICAL IMPULSES THAT THIS ORGANISM GIVES OFF INTO THE WATER. THE SHARK HAS BEEN BLINDFOLDED TO SIMULATE HOW IT CAN USE OTHER SENSES (SUCH AS ITS ELECTRICAL SENSE) TO HUNT DOWN FOOD.

DAY THREE

TODAY, YOU AND YOUR CHILD WILL:

- 1. REVIEW DAY ONE USING THE FOLLOWING TEXT**
- 2. RUN THE ACTIVITY: "WHERE O' WHERE COULD I BE?"**

THE FOLLOWING LIST WILL GIVE YOU THE MOST IMPORTANT ITEMS TO REVIEW FOR YOUR ACTIVITY TODAY!

ALL HUMANS HAVE A SENSE OF THEIR PHYSICAL LOCATION IN SPACE. IF THE RIGHT ARM IS EXTENDED OUTWARD, NEARLY EVERY PERSON CAN SENSE THE LOCATION OF HIS/HER ARM AND MIMIC THIS SAME ACTION WITH THEIR LEFT ARM, EVEN IF BLINDFOLDED. THIS SENSE OF BODY POSITION IS KNOWN AS PROPRIOCEPTION.

WE HAVE THE ABILITY TO LEARN FROM OUR MISTAKES VERY QUICKLY AND EFFICIENTLY. WHEN OUR BODIES MAKE A MISTAKE IN JUDGING THE DISTANCE BETWEEN TWO OBJECTS, OUR PROPRIOCEPTION ALLOWS US TO TAKE THE APPROPRIATE STEPS TO CORRECT THE PROBLEM.

WHERE O' WHERE COULD I BE?

CHILDREN WILL EXPLORE HOW THEY CAN SENSE THEIR BODY POSITION, CALLED PROPRIOCEPTION.

MATERIALS:

PAPER/PENCIL

ACTIVITY 1:

HAVE THE CHILD CLOSE THEIR EYES AND RAISE BOTH HANDS ABOVE THEIR HEAD.

THEY ARE TO KEEP THE FINGERS OF THEIR LEFT HAND COMPLETELY STILL.

WITH THEIR RIGHT HAND, THEY ARE TO QUICKLY TOUCH THEIR INDEX FINGERTIP TO THEIR NOSE.

THEN ASK THE CHILD TO QUICKLY TOUCH THEIR LEFT HAND THUMB WITH THE TIP OF THEIR RIGHT INDEX FINGER.

HAVE THE CHILD REPEAT THE ENTIRE PROCESS QUICKLY WHILE ATTEMPTING TO TOUCH EACH FINGERTIP. MAKE CERTAIN THEY ALWAYS RETURN TO THEIR NOSE IN BETWEEN FINGERTIP ATTEMPTS.

INSTRUCT THE CHILD TO SWITCH HANDS AND TRY AGAIN.

ASK THE CHILD HOW SUCCESSFUL THEY ARE IN FINDING EACH FINGERTIP. DO THEY IMPROVE WITH TIME? AND, IS THERE A DIFFERENCE WHEN THE DIFFERENT HANDS ARE USED?

ACTIVITY 2:

MARK AN "X" ON A PIECE OF PAPER.

HAVE THE CHILD HOLD ONTO THE PENCIL AND RAISE THIS HAND ABOVE THEIR HEAD.

THEY ARE TO CLOSE THEIR EYES AND ATTEMPT TO MAKE A DOT AS NEAR AS POSSIBLE TO THE X.

HAVE THEM OPEN THEIR EYES TO CHECK THEIR SUCCESS AND REPEAT THIS PROCEDURE SEVERAL MORE TIMES.

ASK THE CHILD IF THEY GOT CLOSER TO THE "X" AS THEY REPEATED THEIR PROCEDURE.

EXPLANATION:

ONE INTERNAL SENSE WE HAVE IS A SENSE OF WHERE ARE BODY PARTS ARE. WE CAN SENSE WHERE ARE BODY PARTS ARE, EVEN WITH OUR EYES CLOSED!

THIS INTERNAL SENSE IS CALLED PROPRIOCEPTION ("PRO-PREE-O-CEP-SHUN"). OUR BODY IS FILLED WITH NERVES THAT SEND MESSAGES TO OUR BRAIN. SOME OF THESE NERVES ARE USED TO FIGURE OUT WHAT OUR BODY IS DOING AND HOW IT IS MOVING!

THE LONGER YOU PRACTICE ATTEMPTING TO LOCATE EACH FINGER OR PUTTING THE DOT ON THE "X", THE MORE ACCURATE YOU BECOME. YOUR BODY LEARNS WHERE IT IS TO MOVE IN SPACE FROM ITS MISTAKES AND MAKES CORRECTIONS TO BECOME MORE ACCURATE!