

IMPAIRED SENSES

OBJECTIVE/RATIONALE

Any changes to sensory perception such as aging, trauma, and disease affect health and wellness. The student will perform tasks that challenge their sensory input and analyze their response.

TEKS 121.15 7B

TAKS ELA 1, 4
Mathematics 8, 9
Social Studies 5
Science 1, 2

National Science Education Standards A9-12;C9-12
National Health Care Skills Standards .01, .05, .06, .07, .08
National Curriculum Standards for School Mathematics S1; S3

KEY POINTS

- I. Communication Circuit
 - a. efferent nerves
 - b. afferent nerves
 - c. decision making
 - d. purpose of memory
- II. Special senses
 - a. sight
 - b. hearing
 - c. taste
 - d. touch (mechanical)
 - e. smell
- III. Possible causes that impair efferent pathways or interpretation of sensory input.

ACTIVITIES

- I. Complete the **Impaired Senses Laboratory Investigation**.

MATERIALS

STATION 1

1. One dozen different colors of embroidery floss skeins with the same color intensity
2. several file folders
3. 3 X 5 white index cards and tape or glue
4. red, green, blue, yellow sheets of transparency film

Teacher note

1. *Cut six inch lengths of floss from all skeins of floss and place in groups together and place inside a file folder.*
2. *Mount one piece of four inch length of floss red, green, blue and yellow floss to four separate 3 X 5 index cards. Only one piece of floss should be on each card.*

STATION 2

1. surgical latex gloves
2. several small objects like a sewing needle, strand of hair, coins, piece of thread placed on a smooth flat surface.

STATION 3

1. blind fold
2. balance board
3. watch with second hand

STATION 4

1. reaction ruler
2. pen and paper

STATION 5

1. marker
2. paper plates
3. plastic spoons
4. nose clamps
5. Blindfold
6. One jar each of the following strained baby foods; peaches, apricots, pineapple, and tuti-fruity.

Teacher note:

1. *Remove the labels from each jar of baby food and re- label the jars #1, #2, etc.*
2. *Conceal as much of the jar as possible to limit the observation by sight.*
3. *Keep a record of the flavors*

ASSESSMENT

Laboratory Investigation Rubric

ACCOMMODATIONS

For reinforcement, the student will review and repeat the laboratory investigation.

For enrichment, the student will research how a decreased level of consciousness (coma) influences sensory perception.

REFLECTIONS

STATION 4

MATERIALS

1. reaction ruler
2. pen and paper

PROCEDURE

1. One student drops the ruler as another attempts to catch it with thumb and forefinger.
2. Determine the reaction time by recording where the thumb and forefinger are on the ruler for three attempts.
3. Calculate the average reaction distance for each of three attempts with the reaction ruler.
4. Repeat the procedure with your lab partner deliberately and actively distracting you with noise and motion.
5. Place on an eye patch and repeat step # 1, 2, and 3.

QUESTIONS

1. What was the original reaction distance?
2. Did the reaction distance change with increased sensory input?
3. How did the eye patch affect the reaction time?
4. Research and report on the following: carpal tunnel syndrome, muscular dystrophy, drug abuse, and disability due to burns or trauma.

STATION 5

MATERIALS

1. marker
2. paper plates
3. plastic spoons
4. nose clamps
5. Blindfold
6. one jar each of the following strained baby foods; peaches, apricots, pineapple, and tuti-fruity.

PROCEDURE

1. Place the blindfold over eyes.
2. Student will apply the nose clamp to limit the sense of smell.
3. Students will taste various foods and try to distinguish flavors.
4. Remove nose clamp and repeat taste test.
5. Compare your perception of taste with the actual list of flavors.

QUESTION

1. Determine the degree of accuracy to identify various flavors.

2. How did the lack of smell affect your ability to taste?

3. Research and report on the following: upper respiratory infections, smoking, and inhalant abuse.

Conclusion:

1. If one sense is impaired, how does the brain compensate for a sensory impairment?
 - a. Can it overcome the loss?

 - b. Give an example.

2. List causes of sensory impairment.