



## Activity 5.5.3 Deception of Perception

### Purpose

Have you seen a western movie where the cattle stampede in reaction to gunshots? Or observed a horse jump and balk at a little plastic bag? People can typically find logic in items they see that are illusions. On the other hand, animals can be frightened by everyday objects like a plastic bag blowing in the breeze or a sweatshirt hanging on a fencepost. The ability of animals to rationalize noises and sights around them is limited. They react instinctively rather than rationally. Their instincts kick in and their fight or flight response is triggered. In frightening situations, it is a natural instinct for animals to move away from the unknown.

When working around animals, you may expect them to behave or act in a certain manner. However, their perceptions of the surroundings may be very different from yours. Can your eyes and perception be fooled? How does understanding perceptions and animal behavior help you when working with animals?

### Materials

**Per pair of students:**

- 4 pennies
- 2 index cards
- Paper cup
- Ruler

**Per student:**

- Pencil
- *Agriscience Notebook*

### Procedure

In this activity, you will observe common optical illusions. An optical illusion occurs when an object in your sight is perceived differently than reality. As you complete each part of this activity, consider how you can explain the illusion and the perceptions animals may have when faced with visually confusing sights.

**Part One – Seeing is Believing**

1. Take two pennies and place them between your thumb and forefinger.
2. Rapidly, rub the pennies back and forth in opposite directions.
3. Observe the pennies closely. You will see three pennies. Answer the analysis question on the student worksheet.
4. Complete the visual observation for the arrows on the student worksheet and answer the corresponding questions.
5. Determine your dominant eye by holding your pencil up facing a corner of the room. With both eyes open, center the pencil in the corner of the wall. Close your left eye and look at the pencil. Realign the pencil with both eyes open, and close your right eye to view the pencil.
  - Did the pencil remain stationary when you closed your left eye? If so, you are right eye dominant.
  - Did the pencil remain stationary when you closed your right eye? If so, you are left eye dominant.
6. Take an index card and fold it in half lengthwise.
7. Place the card on the table in front of you.

8. Select a spot in the center of the fold of the index card and stare at it with your dominant eye. Close your other eye and cover it with your hand.
9. Continue staring at the folded index card until you see it standing on end rather than lying face down.  
**NOTE:** The card will appear shorter when the view changes.
10. When the card changes position, move your head from side to side slightly. Answer the analysis questions on the student worksheet.

### Part Two – Depth Perception

With your partner, take turns completing the following steps to determine how your dominant eye influences your depth perception.

1. Place the paper cup on the table in front of you.
2. Position your chair approximately two feet back from the cup.
3. Close and cover your dominant eye.
4. Your partner will hold a penny approximately 18 inches above the table.
5. When you believe the penny is directly over the cup, instruct your partner to drop the penny.
6. Repeat for a total of five trials and record your results in Table 1 on the student worksheet.
7. Open your dominant eye, and close and cover the other eye.
8. Repeat Steps 4 – 6 with your dominant eye open.
9. Open both eyes and repeat Steps 4 – 6.
10. Position your chair approximately 5 feet away from the table.
11. Repeat Steps 3-9 with your chair further away from the table and record your results in Table 1.
12. Switch positions with your partner and repeat Steps 2 – 11.
13. If time permits, attempt each trial from a position further away from the table.

### Conclusion

1. When you see an illusion, how do you know it is an illusion?

You know the circumstances. Example: if there is two pennies and you do an action that makes it appear to be 3

2. Once you realize that you have seen an illusion, what do you think and how do you explain it to yourself?

That it isn't real

3. How do you think an animal would react differently to a startling situation than you?

They would probably freak out be running away or attacking

4. Based on your observations, how might the perceptions of animals influence their reactions?

They might cause them to have a reaction

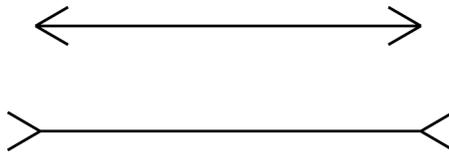


# Activity 5.5.3 Student Worksheet

## Part One Analysis

1. After rubbing the pennies together in steps 1 – 3, answer the following question.
  - Why were you able to see three pennies?
    1. I wasn't
    2. I don't know how people can see it

2. Glance at the two lines below. Which is longer?



3. Measure the two lines with the ruler.
  - Which line is longer?  
None, they are the same just with the arrow flipped  
Line two, however, is longer when it has the flipped arrow symbol
  - Why do you suppose the lengths of the lines appear as they do to your eyes?  
Because the arrow symbols are flipped

4. After observing the note cards during steps 5 – 10, answer the following analysis questions.
  - Were you able to see the card standing on end?

no

- Why do you believe you can see illusions?

No clue

## Part Two Observations

**Table 1. Accuracy of Depth Perception**

	2 feet away		5 feet away		Optional (___ft)	
	Make	Miss	Make	Miss	Make	Miss

<b>Dominant eye closed</b>	3	2	2	3	0	0
<b>Dominant eye open</b>	2	3	1	4	0	0
<b>Both eyes open</b>	1	4	1	4	0	0