Name_____

Perception – Sample Activity

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 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 fence post. 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 an 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 do understanding perceptions and animal behavior help you when working with animals?

Materials

Per pair of students:

- (4) Penny
- (2) Index card
- Cup, plastic, 16 oz
- Ruler, English

Per student:

- Pencil
- *Agriscience Notebook*

Procedure

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 perceptions of animals when faced with visually confusing sights. Then with your partner, take turns determining how your dominant eye influences your depth perception.

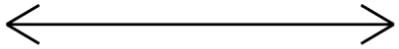
Part One – Seeing is Believing

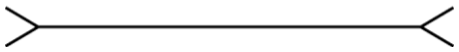
1. Perform an optical illusion with pennies.
    - Take two pennies and place them together between your thumb and forefinger.
    - Rapidly, rub the pennies back and forth in opposite directions.
    - Observe the pennies closely.
    - Answer the *number of pennies* on *Table 1*.

Table 1. *Illusion Responses*

	Circle Your Answer	
Number of pennies	2	3
Line **looks** longer	Line A	Line B
Line **is** longer	Line A	Line B
Card stands on end	Yes	No

2. Complete the visual observation for the arrows.
    - Glance at the two lines below.

Line A 

Line B 

    - Answer which *line **looks** longer* in *Table 1.*
    - Measure the two lines above with the ruler.
    - Answer which line is longer in Table 1.
    - Answer *Analysis Question 1.*

Q1 Why do you suppose the lengths of the lines appear as they do to your eyes?

3. Determine your dominant eye.
    - Hold your pencil at eye level.
    - Point the pencil at the 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.
4. Test your dominant eye.
    - Take an index card and fold it in half lengthwise.
    - Place the card on the table in front of you.
    - Select a spot in the center of the fold of the index card.
    - Stare at it with your dominant eye.
    - Close your other eye and cover it with your hand.
    - Continue staring at the folded index card until you see it standing on the end rather than lying face down.
        - The card will appear shorter when the view changes.
    - Move your head from side to side slightly when the card changes position.
    - Answer if the *card stands on end* in *Table 1.*
    - Answer *Analysis Question 2.*

Q2 Why do you believe you can see illusions?

Part Two – Depth Perception

1. Place the cup on the table in front of you.
2. Position your chair approximately two feet back from the cup.
3. Test your depth perception.
    - Close and cover your dominant eye, so that your non-dominate eye is open.
    - Your partner will hold a penny approximately 18 inches above the table.
    - When you believe the penny is directly over the cup, instruct your partner to drop the penny.

- Repeat for a total of five trials.
- Record the number of you *make* and *miss* in Table 2.

Table 2. ***Accuracy of Depth Perception***

	2 feet away		5 feet away		___ft (Optional)	
	Make	**Miss**	**Make**	**Miss**	**Make**	**Miss**
Non-dominant eye open						
Dominant eye open						
Both eyes open						

4. Repeat Step 3 with your dominant eye open.
5. Repeat Step 3 with both eyes open.
6. Position your chair approximately 5 feet away from the table.
7. Repeat Steps 3–5 with your chair further away from the table.
8. Switch positions with your partner and repeat Steps 3–7.
9. If time permits, attempt each trial from a third position further away from the table.

Sample Teacher Notes

Student Performance

Part One

Students perform three optical illusions to test their perception. The first illusion is rubbing two pennies together to determine if they see two or three pennies. Next, students look at two lines and guess which one is longer. Then they measure the lines and discover they are the same length. The student then answers one analysis question. For the third illusion, students determine their dominant eye by pointing a pencil at the corner of the room and closing one eye at a time. Then they test their dominant eye by folding an index card and staring at it with their dominant eye to see if it stands on end. Finally, they answer a second analysis question.

Part Two

Students work in pairs to alter their vision to see the effect of depth perception. One partner sits two feet from a cup. The second partner moves a penny over the cup. The seated partner covers the dominant eye and tells the dropper when to release the penny. They track the number of makes and misses for five trials. Then they repeat the five trials covering their non-dominant eye and again with both eyes open.

Next, the seated partner moves the chair five feet from the cup and repeats the five trials with their non-dominant, dominant, and both eyes open. The partners switch roles and repeat the activity from two and five feet. If there is enough time, the pair can attempt the trials from a third distance.

Results and Evaluation

Analysis questions responses will vary based on students. All individuals do not easily see illusions, and everyone perceives things differently. In the first illusion, there should appear to be three pennies when students rub two pennies rapidly back and forth. The second and third illusions illustrate how visual cues can trick the mind.

Discuss with students how animals might perceive and react to stimuli. Encourage students to relate their experiences with optical illusions to how animals might mistake harmless objects as a threat. An example to share with students is animals moving from light to dark areas. Animals often hesitate as the dark area looks like a hole. Safe handling and restraint rely on the handler's understanding that the animal may not see or perceive movements and actions the same way.

Sample Activity

This sample is a modified version of *Activity 5.5.3 Deception of Perception* from the CASE 4 Learning *Introduction to Agriculture, Food, and Natural Resources* (AFNR) curriculum. For more information about the course visit **www.case4learning.org**. The sample has been modified for time and material simplification to fit a workshop format and is not for resale or profit. Teachers are permitted to use this sample in their classroom without certification.

Contact **CASE 4 Learning** to receive permission to use this sample at a teacher professional development.

INTRODUCTION to AG, FOOD, & NATURAL RESOURCES

Course Description

Students are introduced to agricultural career opportunities as they develop a personal plan of study they may pursue. This introductory course incorporates science, mathematics, reading, and writing components into the context of agriculture while building foundational skills and knowledge needed for future agricultural courses.

Activities scaffold throughout the course while improving students' employability skills through practical applications. Students explore career and post-secondary opportunities in multiple agricultural pathways.

Equipping Teachers

- Introductory level
- Full year course
- Inquiry and project based instructional practices
- CASE Insitute professional development

Engaging Students

- Solve problems, research, and analyze data
- Practice teamwork and communication
- Investigate and experiment
- Plan, design, construct, and implement projects
- Hands-on agricultural and STEM experiences
- Career exploration opportunities

Instructional Units

- Circles of Education
- Communicating Today
- Science of Agriculture
- Natural Resources
- Plants and Animals
- Ag Power and Technology
- Looking Ahead

Flexibility & Adaptability

CASE provides a comprehensive professional development experience, in addition to a work-life balance so teachers can best educate their students. Course work is adaptable and customizable based on teacher preference to fit all geographies and communities.

> "I teach CASE AFNR to my freshman and it is so beneficial. I can set up a class in a rhythm so they understand a schedule. It provides stability for the kids and they know what to expect. It ties in science and math that they don't expect! I really enjoy it for my underclassmen!"

- Grace Allen, Indiana

scan or visit case4learning.org

Equipping Teachers
Engaging Students

@case4learning

case 4 learning

CURRICULUM FOR AGRICULTURAL SCIENCE EDUCATION

Mission

To design industry-leading, inquiry-based curriculum and teacher education to create lifelong learners and prepare students for the future of agriculture.

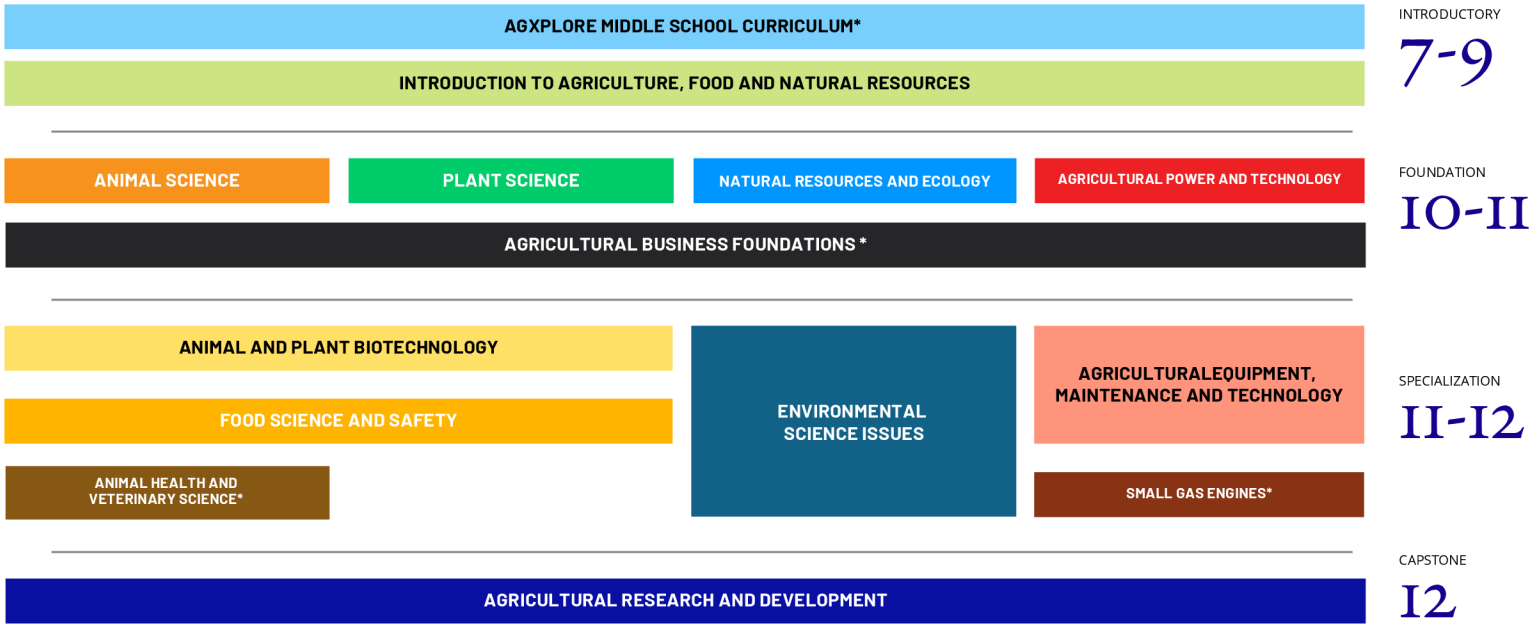
Purposeful Curriculum

CASE has sequenced courses at four levels that enhance the delivery of agricultural education through inquiry-based learning and technical skills.

Standards Aligned

CASE develops curriculum with industry feedback and aligns courses to National Agriculture, Food, & Natural Resources and Career & Technical Education standards.

Courses and Instruction Levels



Professional Development and Lifetime Certification

CASE 4 Learning enhances agricultural education with inquiry and project-based learning to prepare the next generation of the agricultural workforce through teacher certification and professional development.

CASE Institutes

Professional development events preparing teachers to implement full-year CASE courses. Institutes provide teachers the content and skills needed to use CASE curricula in their classroom. CASE Institutes range from five to eight days in a hybrid, in-person, or virtual format.

BriefCASEs *

Professional development for shortened CASE courses or modules. BriefCASEs range from one to three days.

Grants & Scholarships

Corporate sponsors and donors throughout the agriculture industry support CASE teachers through funding material implementation grants and professional development scholarships. Teachers are eligible to apply in the fall to fund their programs in the following year.

Certification

Once the teacher is certified by attending a CASE Institute or BriefCASE, they have lifetime access. There are no subscriptions or renewal fees!

In-Person
Teachers attend the entire training at the host site.

Virtual
Teachers attend the entire training online. Teachers will receive materials via mail, and are responsible for their lab space.

Hybrid
Teachers receive training both virtually and in-person based on the course.

case4learning.org