Name: _____Brady McDaniel_____

CASE

Activity 7.2.1 An Egg is Not Enough

Purpose

Previously, you have learned about the importance of plant genetic material. The transfer of pollen from anthers to stigmas, called pollination, initiates the process of fertilization. How do pollen grains actually reach plant ovules?

For some types of inflorescence, pollen may fall from the anther to the stamen of the same flower to self-pollinate. How do dioecious flowers, such as corn, pollinate? How do plants cross-pollinate in nature?

Why is pollination important? What happens if plant egg cells are not pollinated?

Materials

Per pair of students:

- Computer with Internet access
- *Activity 7.2.1 Pollination Scenario Cards*

Per student:

- Pencil
- *Agriscience Notebook*

Procedure

Through this activity, you will research the various ways that plant flowers receive pollen. Then you will read scenarios describing pollination of 10 different plants and try to determine which method of pollination brought about the results described.

Part One – Identify the Agents

1. Your teacher will assign you and your partner a type of pollination to research.
2. Using the Internet, research the assigned various type of pollination. Record your findings in Table 1 on the student worksheet.
3. In the third column, mark whether the plant is most likely self-pollinated, cross-pollinated, or both.

4. Your teacher will direct you when to share researched pollination types. Share your information when it is your turn.
5. As other pairs share their pollination agent research, write a brief description of each in the space provided in Table 1.

Part Two – Expose the Agents

1. Your teacher will provide you and your partner with a set of *Activity 7.2.1 Pollination Scenario Cards*.
2. Read the scenarios given and take note of a few clues that may help you determine how pollination was achieved.
3. Use the information from Table 1 to determine the type of pollination that has taken place. Record your responses in Table 2.
4. Your teacher will lead a class discussion and share the correct pollination agent for each scenario.

Conclusion

1. How does flower shape and structure determine the type of pollination agent?

Some plants have bright flowers and good smells attract insects or birds that help pollinate it.

2. If no pollination agents were at work, what would the effect on plant production be?

The plant would probably be a self-pollinating plant.

6. Which type of pollination holds the most value for agriculture? Why do you believe this is so?

Wind because it does it all by itself and needs no help, and also is very effective because it covers a large area fast.

7. What other factors may influence pollination rates?

The amount of light and the location of the plant.

Name: _____Brady McDaniel_____

Activity 7.2.1 Student Worksheet

Table 1. *Agents of Pollination*

Pollination Type	Description	Is the plant self-pollinated, cross-pollinated, or both?
Anemophily	The pollination by wind.	Cross pollination, possibly both
Cantharophily	The pollination by beetles.	Cross pollination
Chiropterophily	Pollination by bats.	Cross pollination
Hydrophily	Pollination by the flow of water.	Cross pollination
Hymenopterophily	Pollination through bees.	Cross pollination
Myrmecophily	Pollination through ants.	Cross pollination
Myophily	Pollination by flies.	Cross pollination
Ornithophily	Pollination by birds.	Cross pollination
Phalaenophily	Pollination by moths.	Cross pollination

Psychophily	Pollination by butterflies.	Cross pollination

Table 2. ***Pollination Scenarios***

Scenario	Clues	Type of Pollination
1	Small area and all covered	psycophily
2	Out of sight for a few seconds	hymenoterophily
3	Evening, petals peeled back	chiropterophily
4	Small way	myophily
5	Tiny trail, looking for food by nectar	myrmecophily
6	Upstream, no animal influence	Hydrophily
7	No insect disturbance, top	anemophily
8	Landing marks, daytime, nectar harvested	ornithophily

9	Ground, multiple plants	cantharophily
10	White eggs, easily accessible parts	phalaenophily