

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?

On what will attract it

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

Wind and water

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

Insect pollinated because there won't always be water

7. What other factors may influence pollination rates?

Flower color and type

Name: _____

Activity 7.2.1 Student Worksheet

Table 1. *Agents of Pollination*

Pollination Type	Description	Is the plant self-pollinated, cross-pollinated, or both?
Anemophily	Pollination is spread by wind	self
Cantharophily	Pollinated by beetles	cross
Chiropterophily	Pollinated between plants and bats	cross
Hydrophily	Pollen is distributed by the flows of water	both
Hymenopterophily	Pollinated by bees and other small insects	self
Myrmecophily	Pollinated by ants	cross
Myophily	Fly pollination, feed nectar and flower	both
Ornithophily	Bird pollinated by flowering plants	cross
Phalaenophily	Moth pollination	cross

Psychophily	The pollination of flowers and butterflys	cross
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Table 2. *Pollination Scenarios*

Scenario	Clues	Type of Pollination
1	The pollination agent covered a small area	pyscophily
2	Pollen found on top of flower	myophily
3	Pollen found inside multiple flowers	ornithoholy
4		
5	Has its own pollinator	hymenopterophily
6		
7		
8		

9		
10		