

Name: \_\_\_\_\_

# 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?

It attracts or releases pollen in different forms and ways depending on the flower shape and structure.

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

There would probably be no plants or animal life that feed on those plants.

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

Anemophily because the wind carries pollen around.

7. What other factors may influence pollination rates?



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## Activity 7.2.1 Student Worksheet

**Table 1. Agents of Pollination**

<b>Pollination Type</b>	<b>Description</b>	<b>Is the plant self-pollinated, cross-pollinated, or both?</b>
<b>Anemophily</b>	Form of pollination whereby pollen is distributed by wind	Self-pollination
<b>Cantharophily</b>	Beetles that feed on the pollen	Cross pollination
<b>Chiropterophily</b>	Large white or light colored, opened at night and contain strong odors	Cross pollination
<b>Hydrophily</b>	Pollen is distributed by the flow of water like rivers and streams	
<b>Hymenopterophily</b>	Pollination carried by bees	
<b>Myrmecophily</b>	Pollination of plants by ants	
<b>Myophily</b>	Flies that feed on nectar and pollen	
<b>Ornithophily</b>	Pollination of flowering plants by pollination	
<b>Phalaenophily</b>		

<b>Psychophily</b>	Large pink or lavender, pollinated by butterflies	Cross pollination
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**Table 2. *Pollination Scenarios***

<b>Scenario</b>	<b>Clues</b>	<b>Type of Pollination</b>
<b>1</b>		
<b>2</b>		
<b>3</b>		
<b>4</b>		
<b>5</b>		
<b>6</b>		
<b>7</b>		
<b>8</b>		

<b>9</b>		
<b>10</b>		