

Flower Pollination & Seed Dispersal

Pollination is essential to the reproduction of flowering plants. It involves the transfer of pollen from one flower to another. Since plants cannot move, they must rely on pollinators to transfer pollen for them. Different flowers have different agents, or pollinators. The pollinator depends on the characteristics of the flower.

Some plants are pollinated by the wind. However, most angiosperms are pollinated by insects, birds, and mammals. Many of these organisms eat pollen and nectar produced by flowers. As the pollinator travels from flower to flower in search of food, pollen is accidentally transferred to another flower.

The following chart describes some common agents of pollinations. Use this information to decide which agents would pollinate each of the flowers described in the list.

Pollinator	Special Characteristic
Honeybees	Excellent vision but cannot see the colour red; can see blue, yellow, and ultraviolet best.
Night-flying moths	Cannot see colour; excellent sense of smell
Flies	Attracted to scents that resemble dead or decaying animals
Hummingbirds	Good sight; attracted to orange and red; poor sense of smell
Bats	Active at night; attracted to sour, musty odors.

Pollinator: Using the table above, answer questions #1-7 by stating which pollinator would be best suited for pollinating the flower.

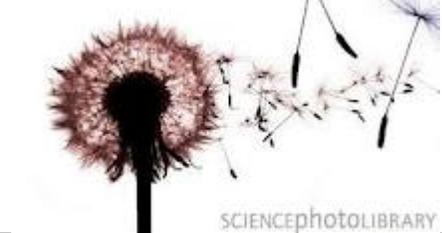
1. The banana plant has a hanging flower that opens only at night and gives off a musty odour. **BATS**
2. Willow trees have simple flowers with little fragrance that produce tiny pollen grains. **MOTHS**
3. Skunk cabbage releases an odour like that of decayed meat. **FLIES**
4. Flower A is bright orange with little fragrance. **HUMMINGBIRDS**
5. Flower B has small white flowers that open at night and produce sweet scent. **NIGHT-FLYING MOTHS**
6. Flower C is bright yellow with nectar located close to its surface. **HONEYBEES**
7. Flower D is bright red with nectar located in long tubes. **HUMMINGBIRDS**

Type of pollination:

8. Which type of pollination is most random (wind or using a pollinator)? Explain your answer.
Wind – unpredictable whereas pollinators are following a predictable pattern (to the next flower for food)
9. Do wind-pollinated or animal-pollinated flowers produce more pollen? Explain your answer.
Wind-pollinated flowers due to its randomness as it needs to ensure that it is pollinated.

Seed Dispersal

Just as flowers have different methods of pollination, angiosperm fruits have different adaptations to help scatter seeds away from the parent plant. The process of distributing seeds is called **seed dispersal**. The illustrations that follow represent four methods of seed dispersal. One method has 2 ways. Next to each illustration, briefly describe the method of seed dispersal. Use **Nelson p. 270 – 272** as a reference.

Diagram	Name the type of seed dispersal & Explanation
 <p>SCIENCEPHOTOLIBRARY</p>	<p>Wind – lightweight seed can be carried great distances e.g. dandelions, milkweed, maple, sycamore, elm and ash</p>
 <p>SCIENCEPHOTOLIBRARY</p>	<p>Water – the air trapped in the tissues of their seeds and fruits enables them to float. Often enclosed in a waxy, waterproof coating that protects the seed during travel e.g. water lilies and coconuts</p>
 <p>SCIENCEPHOTOLIBRARY</p>	<p>Explosive “Mechanical” Propulsion - capsule fruits or pods that explode when mature which throws the seed some distance away from the parent plant.</p>
	<p>Animal dispersal as seeds have adaptations such as hooks, spines, or stickers that get caught in the pollinator</p>
	<p>Animal dispersal as eaten seeds are undigested in the animal and therefore, are excreted far from the parent.</p>

Why is seed dispersal important to plants?

- Eliminate competition
- Increase the probability of seed survival