What is Plant Reproduction and Pollination?

Worksheet

Plant reproduction and pollination describe how flowers make seeds: pollen moves from the anther to the stigma (pollination), grows a pollen tube down the style, and fertilizes the ovule to form a seed and fruit.

Questions

1. What is pollination?

A) Fusion of sperm and egg
B) Transfer of pollen from anther to stigma
C) Growth of a seed into a seedling
D) Development of fruit from ovary

2. What forms the endosperm in a flowering plant seed?

A) Fusion of one sperm with the egg
B) Fusion of one sperm with two polar nuclei
C) Division of the zygote
D) Growth of the pollen tube

3. Which of these is a biotic pollination agent?

A) Wind
B) Water
C) Bees
D) Gravity

4. After fertilization, the ovary of a flower typically develops into...

A) A seed
B) A fruit
C) A stigma
D) A pollen grain

5. A bee carries pollen from a flower's anther to another flower's stigma. What is this process called, and what type of pollination is it?

6. In double fertilization, one sperm cell fuses with the egg cell. What does the second sperm cell fuse with, and what does it form?

7. A grass plant is pollinated by wind rather than insects. What floral features would you expect, and why?

8. Define: What is pollination?

9. Define: What is the difference between self- and cross-pollination?

10. Define: What is double fertilization?

Answer Key

1. B) Transfer of pollen from anther to stigma - Pollination is specifically pollen transfer, not fertilization itself.

2. B) Fusion of one sperm with two polar nuclei - The second sperm cell fuses with two polar nuclei to form triploid (3n) endosperm.

3. C) Bees - Bees are living organisms (biotic) that carry pollen between flowers.

4. B) A fruit - The ovary matures into the fruit, while the ovule inside becomes the seed.

5. Pollen moves from anther to stigma this is pollination Pollen goes from one flower to a different flower cross-pollination Agent involved: a bee biotic/insect (entomophily) pollination

6. Second sperm cell fuses with the two polar nuclei in the embryo sac This triple fusion forms the endosperm (3n) Endosperm's role: nutrient tissue for the developing embryo

7. Wind pollination (anemophily) needs pollen to travel freely through air Expect small, often colorless/scentless flowers (no need to attract pollinators) Expect large amounts of lightweight pollen and feathery/exposed stigmas to catch it

8. The transfer of pollen from the anther (male part) to the stigma (female part) of a flower.

9. Self-pollination transfers pollen within the same flower/plant; cross-pollination transfers pollen between different plants.

10. A process unique to flowering plants where one sperm fertilizes the egg (embryo) and another fuses with polar nuclei (endosperm).