Bea’s Botanical Brain-Teasers

Learning objective: To identify and describe the functions of different parts of flowering plants and understand the process of life cycles and reproduction.

Join Bea the honeybee on an adventure through the meadow! Answer these questions to show off your knowledge about how plants grow, survive, and reproduce. Good luck!

Answer Key: 1. A (Stamen), 2. True, 3. Photosynthesis, 4. B (To produce seeds), 5. False, 6. Anther, 7. C (Water and minerals), 8. True, 9. Dispersal, 10. A (Stomata).

Word bank: pollination · germination · photosynthesis · stamen · carpel · sepal · stomata · xylem

1. 1. Which part of the flower is the male reproductive organ: A) Stamen*, B) Carpel, C) Petal, D) Sepal? (1 mark)

2. 2. True or False: Pollination must happen before a plant can produce seeds. (1 mark)

3. 3. What is the name of the process where plants use sunlight to create their own food? (1 mark)

4. 4. What is the primary function of a flower: A) To look pretty, B) To produce seeds*, C) To store water, D) To provide shade? (1 mark)

5. 5. True or False: Roots are responsible for carrying out photosynthesis. (1 mark)

6. 6. Which specific part of the stamen produces and releases pollen? (1 mark)

7. 7. What do the roots primarily absorb from the soil: A) Sunlight, B) Carbon dioxide, C) Water and minerals*, D) Oxygen? (1 mark)

8. 8. True or False: A seed contains the embryo of a new plant. (1 mark)

9. 9. What term is used to describe the scattering of seeds away from the parent plant? (1 mark)

10. 10. Which part of the leaf allows gases to enter and exit: A) Stomata*, B) Petals, C) Stem, D) Roots? (1 mark)

Draw: Draw a fully labelled diagram of a flowering plant. Include the roots, stem, leaves, and the main parts of the flower (stamen and carpel). Use arrows to show the direction of water movement.

Extension challenge: 1. Explain why plants that rely on wind for pollination produce much more pollen than plants pollinated by bees. 2. Compare and contrast the methods of seed dispersal for a dandelion and a conker. 3. Justify why a plant kept in a dark cupboard would struggle to grow, even if it had plenty of water. 4. What might happen if all the world's pollinators suddenly disappeared? 5. Design an experiment to test how different light intensities affect the growth rate of a pea plant. 6. If you were an engineer designing a synthetic plant, which biological features would be the most important to replicate and why?