# 8B Plants and their Reproduction

## 1. Classification and Biodiversity

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| **Classification** | Sorting organisms into groups based on their characteristics. |
| **Kingdoms** | The five largest groups (each can be split into smaller groups)- *animals, fungi, protoctists, prokaryotes and plants*. |
| **Plants** | Members of the plant kingdom have cellulose cell walls, are multicellular and make their own food. |
| **Scientific Name** | We give organisms scientific names using the names of the last two groups- the genus and the species. |
| **Scientific Name Advantages** | Scientific names are agreed around the world so there is no confusion. Some species have the same common name in different places. |
| **Biodiversity** | The number of difference species in an area. |
| **Advantages of High Biodiversity** | Recover faster from disasters and useful substances can be found (medicines). |
| **Extinct** | When an organism dies out completely. |

## 2. Types of Reproduction

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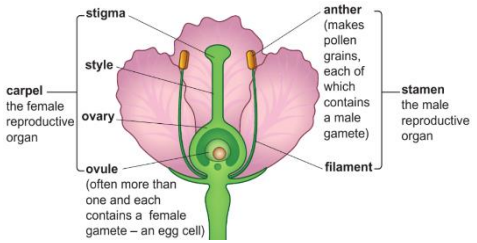
| **Sexual Reproduction** | Two organisms breeding to produce offspring. |
| **Hybrids** | The offspring of two different species- they are not fertile. |
| **Fertile** | Can produce offspring. |
| **Inherited Variation** | Characteristics inherited from parents (due to DNA). |
| **Gametes** | Sex cells |
| **Zygote** | The fertilised egg cell formed when the male and female gamete join. |
| **Asexual Reproduction** | Reproduction involving only one parent- produces offspring identical to the parent (clones). |
| **Runners** | An example of asexual reproduction used by strawberry plants. They spread over the ground and sprout roots to grow new identical plants. |
| **Tubers** | An example of asexual reproduction used by potato plants. They are underground stems (potatoes) that contain a store of food that can grow into a new plant. |
| **Using Asexual Reproduction** | Gardeners take cuttings of leaves/stems to grow new plants quickly and cheaply. |

## 3. Pollination

**Plant Reproductive System**

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| **Pollen** | Male gamete that ripens inside the anthers. |
| **Pollination** | The pollen grain carried away and transferred to the stigmas of another plant can be by animals/wind/water/ |
| **Plant Adaptations for Animal Pollination** | Brightly coloured petals, nice scent and nectar attract animals (mainly insects). The structure also makes it easier for animals to pick up / leave pollen grains. |
| **Plant Adaptations for Wind Pollination** | Pollen is smooth and light to float through air. large anthers and stigmas hang outside the flower to catch the wind. |
| **Self-Pollination** | Pollen grains from a plant land on the stigma of the same plant. |
| **Cross-Pollination** | Pollen transferred from one plant to another. |

## 4. Fertilisation and Dispersal

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| **Pollen Tube** | Formed when a pollen grain reaches a stigma of the same species. It grows down to the ovule. |
| **Fertilisation** | The egg cell and the male gamete from the pollen grain join together to form a zygote. |
| **Cell Division** | The process by which the cell splits into two. |
| **Embryo** | Formed when the cells divide again and again. |
| **Seed** | The ovule becomes a seed. Inside the seed is the embryo and a food source. |
| **Seed Coat** | Hart outer coating of seed to protect it. |
| **Germinate** | The seed starts to grow. |
| **Fruit** | The ovary swells up and forms the fruit around the seed. |
| **Seed Dispersal** | The spreading of seeds away from the parent plant. |
| **Attracting Animals** | Fruits are fleshy, soft, juicy and taste good to attract animals for seed dispersal. |
| **Egested** | Seeds are passed out by animals in their faeces. |
| **Other Seed Dispersal Methods** | Wind, water and explosions- useful so that new plants aren't in competition with the parent plant. |

## 5. Germination and Growth

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| **Resources** | What a plant needs to grow/germinate. |
| **Respiration** | The process of releasing energy from glucose. |
| **Respiration Word Equation** | glucose + oxygen → carbon dioxide + water |
| **Dormant** | Slow life processes but still alive- such as in a seed. |
| **Photosynthesis** | A process that plants use to make their own food. |
| **Photosynthesis Word Equation** | carbon dioxide + water ⟶ glucose + oxygen |
| **Starch** | Glucose is converted to starch to store it. |
| **Chloroplasts** | Traps light energy needed for photosynthesis. |
| **Interdependent** | Organisms that depend on one another. |

| Lesson | Memorised? |
|---|---|
| 1. Classification & Biodiversity | |
| 2. Types of Reproduction | |
| 3. Pollination | |
| 4. Fertilisation & Dispersal | |
| 5. Germination & Growth | |