**B8.5 Plant Reproduction**

* All Living organisms are **sorted** into groups. This is called Classification
* There are Five Kingdoms

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Kingdom** | **Prokaryotes** | **Protoctists** | **Fungi** | **Plantae** | **Animalia** |
| **Characteristics** | Cells have no nucleus    Unicellular | Mostly Unicellular | Cells walls contain Chitin    Multicellular    Take nutrients from Dead living things | Cell wall is made of cellulose    Multicellular    Make their own food by Photosynthesis | Does not contain a Cell wall    Multicellular   Feed on other organisms |

Plant Kingdom is further subdivided into smaller groups:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Plant Subgroup | Moses | Ferns | Conifers | Flowering Plants |
| **Characteristics** | Thin leaves that lose water    No roots    No Xylem Tissue | They do not have flowers or cones    Have roots    Have Xylem tissue | They have cones  Needle shaped leaves  Have roots    Have Xylem tissue  They do not have flowers | They do not have cones  Flat leaves    Have roots    Have Xylem tissue  They do not have flowers |

 Characteristics of Plant Kingdom:

-Have green leaves,

-cell walls are made of **cellulose**

-They can **photosynthesise**.

**Scientific Names**

* Kingdoms are subdivided into smaller and smaller groups.
* The last two of these are the **genus** and the **species**.
* Genus and Species names give each species a two-word scientific name e.g. panthera tigris, Panthera leo

**Sexual Reproduction in Plants**

* **Sexual reproduction**needs two parents to produce **sex cells** or **gametes**. In plants they are called a Pollen and an egg.
* The gametes fertilise to produce a **fertilised egg cell**
* The fertilised egg cell divide by a process called **cell division**to grow into an **embryo** which grows into an adult plant.
* Offspring contains characteristics from both parents.
* Pollen grains are made in the anther of flowers.
* Pollen grains are transferred by insects or winds to the Stigma of another flowers. This process is called Pollination.
* Pollen grain grows a Pollen tube reaches the **ovule.**
* **Ovule contains**an **egg cell**.
* The nucleus from the male gamete inside the pollen grain joins with the nucleus inside the egg cell to form a fertilised egg cells. This is called **fertilisation**.
* Fertlised egg cell develop to form an embryo.
* Ovule becomes a seed
* Seed contains the embryo and a food store
* A part of the flower forms a **fruit**.

Seed Dispersal

Plants disperse their seeds to prevent competition with the parents plant.

* Seeds are dispersed in by animal’s faeces
* Seeds can be dispersed when they get stuck on the fur of animals
* Wind dispersal
* Explosion of fruits

**Germination**

Conditions of Seed germinations are (**WOW**)

**W**ater

**O**xygen

**W**armth

Once seeds germinate, Plants need following for Growth (LAWWN)

**L**ight

**A**ir

**W**ater

**W**armth

**N**utrients

**Asexual reproduction in plants**

* Reproduction where only one parent is required to produce an offspring is called Asexual Reproductions.
* For examples, Daffodil bulbs, Cutting, Tubers, Strawberry runners
* Asexual Reproduction produces clones

**Complete the following tasks:**

1. Research the common and the scientific name of 4 different types of plant that can be found around your home.
2. Draw and label the main parts of a flowering plant.
3. Describe the function of the male and female gametes within a plant.
4. What mechanisms can enable the male gamete reach the female gamete of a plant?
5. How does the male gamete reach the female gamete once pollinated?
6. What form of reproduction produces seeds?
7. Which part grows out of a seed first?
8. What resources does a seed need in order to germinate?
9. Explain how a filament of a flower is adapted to perform its function.
10. Describe how an anther and stigma could be adapted to prevent self-pollination.
11. Some plants use self-pollination. Explain an advantage and disadvantage of this.
12. If the pea pod is left on the plant, it slowly dries out, which makes the pod twist. At a certain point, the pod suddenly splits open and flicks out the seeds. Explain why the plant does this. Give *two* reasons.
13. Some plants have spinners on them. Explain how a spinner helps plants to disperse seeds.
14. List the conditions that are essential for plant growth.
15. Tally the number of different plants from each classification group you have growing in/around your house (this may include between bricks).

**Extended task:**

Research the process of plant cloning (e.g. taking cuttings, fission, fragmentation, budding, vegetative reproduction, spore formation and agamogenesis.). Design an information leaflet to help explain a variety of processes for cloning plants for gardeners. Explain the advantages and disadvantages of each technique and whether certain methods would be better for certain types of plants (aim to cover each classification of plant).