

# Year 8 Photosynthesis Knowledge Organiser

## 1. Photosynthesis Keywords

|                |  |
|----------------|--|
| Photosynthesis | The process by which plants make food using carbon dioxide, water and light.                                   |
| Starch         | Type of carbohydrate found in plants made from glucose. Used for storage.                                      |
| Stomata        | Openings in the leaves of plants. Opened and closed by guard cells allowing gases to enter and leave the leaf. |
| Diffusion      | The spreading out of particles from an area of high concentration to an area of low concentration.             |
| Chloroplast    | The organelles in which photosynthesis takes place.  |
| Biomass        | The amount of biological material in an organism.  |
| Glucose        | A simple sugar   |
| Carbon dioxide | A reactant used by plants during photosynthesis  |
| Xylem          | Non living cells in plants that transport water from the roots to the leaves.                                  |
| Palisade cells | Contain lots of chloroplasts   |
| Fertilisers    | Contains minerals that help plants grow.   |
| Minerals       | Needed by plants and animals for growth and development  |
| Producer       | An organism that is able to make its own food  |
| Consumer       | An organism that has to eat other organisms to survive.  |

## 2. Photosynthesis

Carbon dioxide + Water → Glucose + Oxygen

## 3. Testing for starch

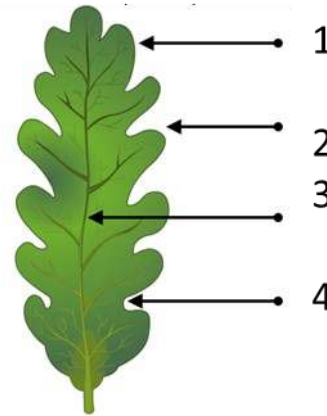
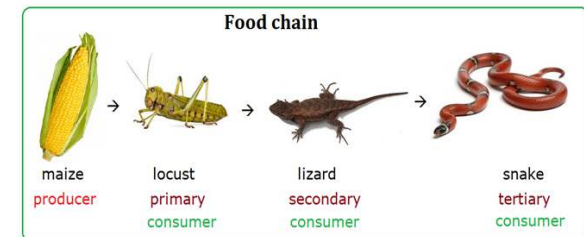
Iodine solution will turn from brown to blue/black in colour.

## 4. Leaf Adaptations

|                                       |   |
|---------------------------------------|---|
| Chloroplasts (containing Chlorophyll) | Chlorophyll absorbs light for use in photosynthesis. Photosynthesis takes place in the chloroplasts |
| Veins                                 | Contains a xylem to carry water. Phloem takes away the products of photosynthesis                   |
| Air spaces                            | To allow diffusion of gases in and out of the palisade cells  |

## 5. Food Chains and webs

Food chains and Food Webs show who eats what in an ecosystem. Arrows in a food chain show the flow of energy



- thin** – this allows gases to reach cells easily
- wide and flat** – this creates a large surface area to absorb as much light as possible
- veins** – these carry water to the cells and carry glucose away and also support leaves
- stomata** – these are pores on the underside of leaves through which gases move in and out. –

| Keywords   | Meaning  |
|------------|--|
| Food chain | A way of showing what eats what in a habitat.  |
| Food web   | Many food chains linked together.  |
| Producer   | Organism, usually a plant, that makes its own food through Photosynthesis.           |
| Consumer   | Organism that eats producers or other consumers.                                     |
| Carnivore  | Organism that only eats other consumers (always at least a 2 <sup>nd</sup> consumer) |
| Herbivore  | Organism that eats only producers (always a 1 <sup>st</sup> consumer).               |
| Omnivore   | Organism that eats both producers and consumers.                                     |
| Predator   | Organism that hunts and eats other animals.  |
| Prey       | Organism that is hunted and eaten by a predator.                                     |