Science – Living World – Plants ES1 –S1

Learning Intention	Curriculum Outcomes
Expanding knowledge and understanding of our natural world.	**<u>Science</u>** **Ste-3LW-ST explores the characteristics, needs and uses of living things.** **ST1-4LW-S describes observable features of living things and their environments**

Lesson 1 - Plants - Content

Plants are really important for our planet Earth and for all living things. **Plants** absorb carbon dioxide and release oxygen from their leaves, which humans and other animals need to breathe. Living things need **plants** to live - they eat them and live in them. **Plants** help to clean water also.

Online Links (optional)

https://www.youtube.com/watch?v=dUBIQ1fTRzI
https://www.kids-fun-science.com/

https://www.bbc.co.uk/bitesize/topics/zy66fg8/articles/zcmtk2p

https://www.dirtgirlworld.com/

Activities

1A – How is a plant important?

1B – Label parts of a plant

1C – What does a plant need to grow?

1A How plants are important?

1) Animals (including humans) eat plants. Write 10 plants that you like to eat.

_____

_____

_____

_____

2) Plants provide habitat (homes) for animals? Name 3 animals who live in plants? What is the name of their home, for example spider and web?

_____

_____

_____

3) Plants provide us with oxygen (air) to breathe. Most animals, including humans, need oxygen to exist.

PLANT EXPERIMENT - CREATING OXYGEN

Plants provide us with oxygen (air) to breathe.

Nearly a quarter of the air that we breathe is oxygen. After we breathe in oxygen we exhale carbon dioxide. Carbon dioxide is needed by plants for them to live. In these experiment you will see how a leaf creates oxygen that we breathe from sunlight.

MATERIALS

- Green leaf
- Clear glass
- Water
- Sunlight
- Small hand lens optional

DIRECTIONS

1. Cut a green leaf off a plant and fill a glass with water.
2. Place the leaf in the glass and put glass containing the leaf in a sunny location.
3. Write down what you think will happen (your prediction) below.
4. After an hour carefully look at the leaf and side of the glass.
5. You should be able to see lots of tiny bubbles that have formed on the edges of the plant and on the side of the glass. If you are having a hard time seeing the bubbles you might get a small hand lens to observe the edges of the leaf.

Write your prediction (What I think will happen) below

_____

_____

Time your experiment. After an hour draw what you see and label the parts – glass, leaf, water, bubbles.

SCIENCE BEHIND THE EXPERIMENT

The bubbles you see on the leaf and sides of the glass were oxygen bubbles. Leaves take in carbon dioxide and through the process of ***photosynthesis*** they create food for the plant. Oxygen is a waste product of this process of this and goes into the air. The air we breathe contains 21% oxygen produced by plants. Without plants we would not have enough oxygen to live.

Extension – Extend this experiment

1. Leave the plant in the sunlight for several more hours. Do the bubbles increase or decrease.
2. Take two glasses of water and place a fresh leaf in each one. Place one leaf in a dark area and the other in sunlight for two hours and then observe how much oxygen each leaf produced.

https://www.kids-fun-science.com/plant-experiments.html

1B Plant Parts

Plant parts have different roles (do different things)

Roots
Roots absorb (draw up) water, oxygen (air) and nutrients (vitamins and minerals) from the soil. Tiny root hairs stick out of the root, helping in the absorption. Roots help to anchor the plant in the soil so it does not fall over. Roots also store extra food for future use.

Stems
Stems support the plant and they lead water and nutrients from the roots and food in the form of glucose from the leaves to other plant parts. Stems can be bendable like the stem of a daisy or woody like the trunk of an oak tree. Trunks and branches are like big stems.

Leaves
Most plants' food is made in their leaves. Leaves capture sunlight which the plant uses to make food through a process called ***photosynthesis*.**

Flowers
Flowers contain pollen and tiny eggs. After pollination of the flower and fertilization of the eggs, they develop a fruit.

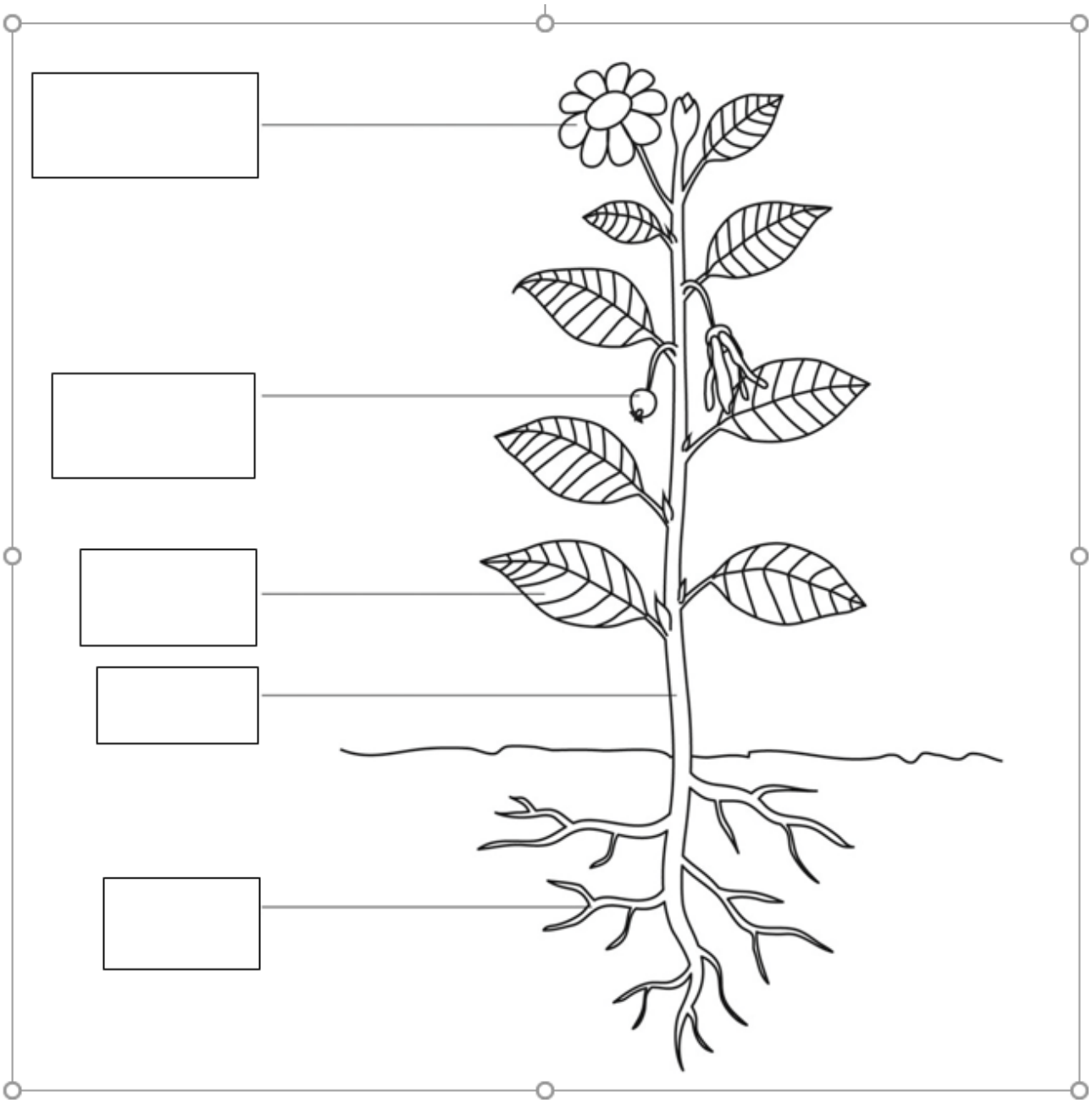
Fruit
Fruit provides a covering for seeds. Fruit can be fleshy like an apple or hard like a nut.

Seeds
Seeds contain new plants. Seeds form in fruit.

Label the picture on the next page with the words underneath the picture.

Extension

Colour your picture. Explore the plants outside and take pictures or draw different plant parts. Get used to identifying which plant part you are looking at.



stem roots leaves seed flower

1C) What does a plant need to grow?

Nearly all plants need air, light, warmth, water and nutrients to be healthy.

The sun gives them light and warmth.
They get oxygen from the air and the soil.
They get nutrients from soil.

How do you think plants get water?

Fill in the blanks with the words below

Nutrients come from the soil and travel up the _____ then through the _____ to the _____ .

roots	leaves	stems

If they are healthy, they can continue making their own food through ***photosynthesis.***

Extension: Grow your own plant from seed

1. Take some tomato seeds from a tomato and place them apart from one another on a paper towel.
2. Place the paper towel with the seeds into the sun.
3. When seeds are completely dried out they are ready to be sown (planted)
4. Remove each seed from the paper towel, if a tiny bit of paper stays on that is ok.
4. Plant in a pot filled with soil, or into a garden bed. [You can make your own pot by putting holes in the bottom of a food can (like a baked beans tin) with a nail and a hammer]. Plant them half a cm deep and 30 - 60cm apart to give them room to grow.
5. Place pot in a sunny spot.
6. Water them daily in the morning.
7. When the fruit turns red pick them and eat. Yum!