



Helping Plants to Grow Well - Year 3

Overview: to show that plants are living and that they need sunlight, water and warmth to grow (unit 3b)

Aims:

- To introduce the idea of a plant as an organism in which different parts of the plant all need to function properly in order for a plant to grow well.

Time: 60 min

Resources:

- Celery, White flower, Dye, Jars, Resources for plant game
- Fact sheets
- 5 Stages of growing a plant in transparent containers
- Laminated words – Seeds, Roots, Shoots, Stem, Leaves & Flower

Skills:

- Critical reasoning, Observing,
- Enquiry & Justifying

Keywords:

- Expressions of reason using 'because'. Expressions making generalisations.

Cross-Curricular Subjects:

- Numeracy – *Y3 Unit 10 & 1*
- Art – *Unit 2A*
- ICT – *Unit 2E*
- Geography – *Unit 17*

Helping Plants to Grow Well

Teaching sequence:

- Welcome and short presentation about Syngenta and what the company does in working with plants.
- At glasshouse lobby area pupils to look at one plant and to discuss the various stages of growth: seed, roots, shoot, stem, leaves, flower and fruits. Ask pupils to volunteer in selecting a card from key words card pack and then to label a section of the plant. Ask pupils - *What are the key ingredients that help plants to grow well?* - sunlight, water and warmth.
- Experiment to demonstrate that water is transported through the stem to other parts of the plant. Use sticks of celery and a white petal flower and explain that you are going to put these in jars with dye. Encourage the pupils to discuss what they think might happen if they leave the stems in the dye for a period of time. Inform the pupils that they will come back to the experiment, to see what has happened.
- Take pupils on a tour of the glasshouse to show how plants grow in a variety of conditions.
 - Talk to pupils about the controlled conditions of the glass house e.g. air circulation systems, water monitored, heat controls.
 - Establish that plants grow in different climates around that world e.g. plants in the desert store water because there is a lack of rain for long periods of time. Show a plant like the aloe and discuss its special features and the plants usefulness.
 - Discuss the differences between plants growing 'outside' with those growing in a controlled environment. Re-enforcing the main points that plants need sunlight, warmth, water and soil to grow.

Helping Plants to Grow Well

- Pick out 3 to 4 plants from different climate zones. If possible choose plants for their usefulness to people e.g. plants that give us food, clothing, medicine, etc.
- Have prepared a 'fact sheet' for each plant indicating the basic measurements of water, sunlight and temperature (refer to teachers notes). Use this resource to highlight how plant profile can be kept for every plant. This is something the pupils could do when they are recording data from their experiments at school.
- Play *plant game* – this game consolidates the basic structure of a plant and focuses on one of the elements that a plant needs to grow (refer to teachers notes for game instructions and resources required).
- Return to celery and flower experiment. Encourage pupils to observe and discuss their observations.
- At glasshouse lobby area pupils to look at examples of plants that have NOT had the right conditions to grow. Using plants that you have specifically identified on the tour. Encourage pupils to observe, feel, discuss and explain what happens when plants don't receive the right amounts of water, sunlight or warmth, and what they think is wrong with the growing conditions of each plant.

Helping Plants to Grow Well

Teachers Notes:

- Syngenta teacher will need either Power Point presentation or laminated sheets to highlight what the company does, what kind of people work in the organisation and how do they work with plants and help them to grow. Syngenta also help farmers around the world to grow their crops so that they can grow food, flowers and other important things for us to eat and use.
- Have a key plant to demonstrate the different growing stages - seed, shoot, stem, leaves and flower – 5 displays if possible.
- You will need some containers, food colouring, celery sticks and white stem flowers. This is to demonstrate that water is transported through the stem to other parts of the plant.
- Fact sheets – a very simple graph showing the temperature, water and amount of light required for each plant. Teacher to choose at least 3 to 4 useful plants. For example aloe is a medicine and requires little water, plenty of sunlight and heat.
- Teacher to use examples of plants that pupils have seen on the tour. Plants that have been exposed to ‘unhealthy’ conditions – e.g. too much water, too much cold, not enough light etc.