J. From planting to growing!

Previous Step: Germinating seeds

By the end of this month, pupils will have:

1. **Observed and drawn the root system of a plant;**
2. **Compared the space above ground with the space under the ground;**
3. **Traced the path of water inside the plant;**
4. **Divided the growing space in sections (1 foot square garden)**
5. **Learned about companion planting**
6. **Planted their selected vegetables and develop a watering and weeding routine**

From planting…

Planting involves the active process of nestling a little seedling into the ground. When planting, children will revisit, in practice, earlier ideas about what happens in the soil. Central considerations in planting involve: **physical space above ground and under the ground; watering; access to light; competition for nutrients.** We want to ensure that each plant can have enough nourishment in order to grow well.

1. The root system of a plant looks a bit like the hand of a child. **Activity 1a:** Children can be encouraged to reflect on what they do with their hands: reaching out; grasping; pulling; sensing and feeling. The bigger and stronger their hands, the harder they can work. **Similarly**, the roots of a plant will grow bigger and longer, to give the plant the ability to take increasingly bigger amounts of water and nutrients from the ground. Children may be encouraged to find pictures of vegetables growing. They can be guided to observe that a plant grows just as big *'under the ground'* as it does *'above ground'*.

2. Measuring the root area can help children make comparison with the height of a plant. **Activity 2a: outside,** children can be encouraged to look at roots and discuss why some plants have much bigger roots than others (e.g. trees as compared to grass). For example, big plants will need to go further to find water and woody roots will help the plant live longer.

Activity 2b: outside, pulling out some weeds in the school ground can offer the opportunity for children to observe and draw the space occupied by leaves and stems above and under the ground.

2.Water is the most immediate source of nourishment for the plant. Where does water come from and… where does it go to…?

Activity 3: by touching and observing a live plant, children can find out where water is stored (e.g. inside the leaves; in the petals; on the surface). They can compare what a veggie looks like when it is dry; or what it looks like when sprayed with water. Observations can also be made about the skin of a veggie: some are smooth and waterproof; others are hairy or with pores. How does water behave on each different surface?

3. All plants need to **share physical space** in order to get the benefit of light and sufficient volume of soil in order to grow stable and gain access to water and nutrients. For example, children can observe the space plants occupy in the school ground.

Activity 4: planting. Allocating space inside the planter can follow the rule of **a one foot square**. A planter of 1*1 meters can be divided into 9 squares.

4. In the same planter, some plants can benefit from each other and help each other to grow. The idea of **companion planting** is that specific plants, flowers or herbs are planted alongside the vegetable plants to protect the produce or enhance their growth by attracting insects (e.g. bees) for pollination; to repel pests or to act as food for pests (and thus protect the main crop from being eaten).

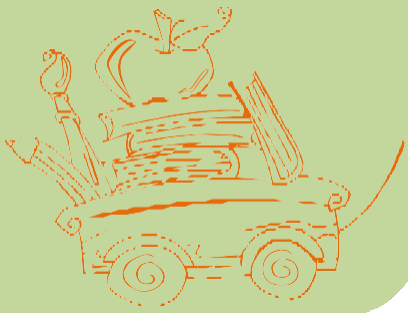
…to growing!

Activity 5a: Using **a companion planting chart** children can find out what are the best companion plants to use and decide how to arrange the different plants in the planters.

Activity 5b: children can discuss the concept of 'helping each other'. What happens when we help? What words can we can use (e.g. to lend a hand; to support; to guide; to carry; to shelter and protect; to share…). They may be able to share stories of 'helping' or dramatise an activity.

Activity 5c: compare companion planting with large-scale agriculture. What do they look like? What about variety of crops? And what about pest control?

Activity 5d: Each child can plant seedlings or seeds in the planter in the allocated space. Planting involves handling of soil and making sure the seed is covered well with soil and watered.



From planting to growing across the Curriculum for Excellence

Health and Wellbeing

- engages children and young people and takes account of their views and experiences, particularly where decisions are to be made that may impact on **life choices**

- takes account of research and successful practice in supporting the learning and development of children and young people, particularly in sensitive areas such as **substance misuse**

- uses a variety of approaches including **active, cooperative and peer learning** and effective use of technology

- encourages and capitalises on the potential to experience learning and new challenges in the **outdoor environment**

- encourages children and young people to act as **positive role models** for others within the educational community

- leads to a lasting commitment in children and young people to follow a **healthy lifestyle** by participation in experiences which are **varied, relevant, realistic, and enjoyable**

- helps to foster **health in families and communities** through work with a range of professions, parents and carers, and children and young people, and enables them to understand the responsibilities of citizenship

- harnesses the experience and expertise of **different professions** to make specialist contributions, including developing **enterprise and employability skills**.

Sciences

The sciences framework provides a range of different contexts for learning which draw on important aspects of everyday life and work. Learning in the sciences will enable me to:

- develop **curiosity** and understanding of the environment and **my place in the living, material and physical** world
- demonstrate a secure knowledge and understanding of the **big ideas** and concepts of the sciences
- develop **skills for learning, life and work**
- develop the skills of **scientific inquiry** and investigation using **practical techniques**
- develop skills in the **accurate use of scientific language**, formulae and equations
- apply **safety measures** and take necessary actions to control risk and hazards
- recognise the impact the sciences make on **my life**, the lives of others, the environment and on society
- recognise the role of **creativity and inventiveness** in the development of the sciences
- develop an understanding of the **Earth's resources** and the need for responsible use of them
- express opinions and **make decisions** on social, moral, ethical, economic and environmental issues based upon sound understanding
- develop as a **scientifically-literate citizen** with a lifelong interest in the sciences
- **establish the foundation** for more advanced learning and future careers in the sciences and the technologies.