

## Fertilizer Lesson plan 1 & 2

**Health and wellbeing** I am learning to assess and manage risk, to protect myself and others, and to reduce the potential for harm when possible. HWB 0-16a / HWB 1-16a / HWB 2-16a / HWB 3-16a / HWB 4-16a.

**Science** I can help to design experiments to find out what plants need in order to grow and develop. I can observe and record my findings and from what I have learned I can grow healthy plants in school. SCN 1-03a I have collaborated in the design of an investigation into the effects of fertilisers on the growth of plants. I can express an informed view of the risks and benefits of their use. SCN 2-03a SCN 2-02a Through carrying out practical activities and investigations, I can show how plants have benefited society. SCN 2-02b Second level skills. While conducting experiments, children are able to safely use simple tools, equipment, apparatus and procedures. They make observations, collect information and make measurements accurately using relevant devices and standard units and ICT where appropriate. They can select, with assistance, appropriate methods to record their findings

**Geography** I can discuss the environmental impact of human activity and suggest ways in which we can live in a more environmentally responsible way. SOC 2-08a

**Literacy** By considering the type of text I am creating, I can select ideas and relevant information, organise these in an appropriate way for my purpose and use suitable vocabulary for my audience. LIT 2-26a

**Technologies** Throughout all my learning, I can use search facilities of electronic sources to access and retrieve information, recognising the importance this has in my place of learning, at home and in the workplace.

**TCH 2-03b** I can create, capture and manipulate sounds, text and images to communicate experiences, ideas and information in creative and engaging ways. **TCH 1-04b / TCH 2-04b**

### Resources Lesson one

Toy cars and balls bought in from home. Ramps made from things in the school. A selection of ramp surfaces all cut to the same size eg different gages of sandpaper, different fabrics like fleece or towelling, acetate or different plastics, paper, etc a toy car for each group, Results sheet.

### Risk assessment

Children will have the risks of working with fertilizers explained and will wear gloves if appropriate to handle soils. Any potential hazards will be highlighted before and during the experiment as appropriate.

### Learning Intention.

**Lesson one 1/To understand what a fair test is. 2/ To be able to carry out a fair test accurately**

**Lesson two 1/ To understand what plants need to grow. 2/ To be able to design and carry out a fair test safely which can assess the effects of fertilizers on plant growth .**

### Lesson One

Intro.

Take all children into the playground and do a series of unfair tests to introduce what a fair test is.

Main.

In collaboration with the pupils get them to make the unfair tests, fairer. Unfair tests could include; running race, ball test.. Once the children have grasped what a fair test is by examining what it isn't and that only one variable (the independent variable) should change and the rest should stay the same in order to test a hypothesis, take them inside to carry out the car and ramp fair test. This test involves working out which surface creates the most friction. Pupils create a ramp from things in the classroom and then place different pre cut surfaces on the ramp in the same place and use the same car , which is let go with the same force by the same child. Pupils then see how far the car rolls when it comes of the ramp. If time they can repeat the test for each surface to gain more accurate results.

Plenary

Discuss the results of the car and ramp test experiment

## Fertilizer Lesson plan 1 & 2

**Health and wellbeing** I am learning to assess and manage risk, to protect myself and others, and to reduce the potential for harm when possible. HWB 0-16a / HWB 1-16a / HWB 2-16a / HWB 3-16a / HWB 4-16a.

**Science** I can help to design experiments to find out what plants need in order to grow and develop. I can observe and record my findings and from what I have learned I can grow healthy plants in school. SCN 1-03a I have collaborated in the design of an investigation into the effects of fertilisers on the growth of plants. I can express an informed view of the risks and benefits of their use. SCN 2-03a SCN 2-02a Through carrying out practical activities and investigations, I can show how plants have benefited society. SCN 2-02b Second level skills. While conducting experiments, children are able to safely use simple tools, equipment, apparatus and procedures. They make observations, collect information and make measurements accurately using relevant devices and standard units and ICT where appropriate. They can select, with assistance, appropriate methods to record their findings

**Geography** I can discuss the environmental impact of human activity and suggest ways in which we can live in a more environmentally responsible way. SOC 2-08a

**Literacy** By considering the type of text I am creating, I can select ideas and relevant information, organise these in an appropriate way for my purpose and use suitable vocabulary for my audience. LIT 2-26a

**Technologies** Throughout all my learning, I can use search facilities of electronic sources to access and retrieve information, recognising the importance this has in my place of learning, at home and in the workplace.

**TCH 2-03b** I can create, capture and manipulate sounds, text and images to communicate experiences, ideas and information in creative and engaging ways. **TCH 1-04b / TCH 2-04b**

### Resources Lesson two

4 trays with different soils/mediums in for growings; one with compost and artificial fertilizer, one normal garden soil, one with compost without artificial fertilizer and one with only peat in it. plant pots, seeds, watering spray can. Paper to write fair test.

### Risk assessment

Children will have the risks of working with fertilizers explained and will wear gloves if appropriate to handle soils. Any potential hazards will be highlighted before and during the experiment as appropriate.

### Learning Intention.

**Lesson one 1/To understand what a fair test is. 2/ To be able to carry out a fair test accurately**

**Lesson two 1/ To understand what plants need to grow. 2/ To be able to design and carry out a fair test safely which can assess the effects of fertilizers on plant growth .**

### Lesson two

Intro.

Explain the question you want to design a fair test experiment for; Do fertilizers help plants to grow? Explain the learning intention for the lesson and the safety considerations they need to consider when dealing with fertilizers and designing their experiment.

Main

In groups get pupils to discuss what kinds of variables you would need to include to create your experiment to make it fair. Come together to share ideas. Discuss together how to set out the experiment. Then go back to group working to write what resources they will need , the method for the experiment and to prepare the results sheet for their fair test and put safety advice into their method. When this has been checked by the teacher pupils can set up their fair test.

Plenary

Each group presents their fair test and method to the other group. The children will then organise the schedule to ensure the plants are cared for so the test remains fair and over the coming weeks they will chart the growth of the plants to see which soil assists the plants to grow the best. They will use their findings to write their conclusion as to whether fertilizers do help plants to grow.