GET TOGETHERS
Bringing people together through food

Plant and Share Month

Sow and grow in school

This activity can be done in school as part of Plant and Share Month. This activity is about growing your own vegetables at the same time as learning about plant growth and propagation. There are many different vegetables to choose from that give you quick results. Each pupil needs two containers: one for sowing seeds and one for herb cuttings. They can choose which container they wish to keep and which to share. Use growing cards to help you.

What You Need:

- Vegetable seeds. For example, 'cut and come again' salad leaves or baby leaf salads, radish, or rocket
- Herbs for cuttings such as rosemary, sage or lavender
- Growing cards – **download them here**
- Scissors or secateurs
- Containers to grow in, for example recycled pots, supermarket mushroom container or homemade paper pot
- A marker pen or pencil and homemade label
- Multipurpose peat-free compost
- Grit, sharp sand, or perlite
- Plastic bag and elastic band
- A scoop

Introduction

By following the 'What to do' section, pupils will learn:

- The formation of seeds is a result of sexual reproduction in a plant
- Seeds come in many shapes and sizes, adapting to different ways of dispersal (for example by wind, animals or birds)
- What is in a seed
- How to sow seeds
- That plants can also reproduce asexually and make clones of themselves that are genetically identical to the parent plant. Plant breeders take advantage of this by taking cuttings at different times of the year
- How to take cuttings

Tip:
If using small seeds like salads, radish, or rocket, mix them with dry silver sand for easier sowing.
Soak larger seeds overnight before sowing for faster germination.

What to Do

Sowing from seed

1. Explain that a seed is formed after pollination and, when it germinates, it will produce a plant similar but not identical to the parents.
2. Investigate what's in a seed by soaking some larger seeds like broad beans or peas (overnight, 12 hours if possible) and then the pupils can take the seed apart. Gently squeeze the seed – does any air come out? Compare a dry and soaked seed. What are the differences? Why is one larger? Peel the skin 'seed coat' off. What is it and what does it do? Open the seed carefully and identify the embryo that will become the adult plant. The young shoot or seed leaves (cotyledons) and the food store. This is starch for the young plant to use until it is able to carry out photosynthesis.
3. Let the pupils choose the seeds they want to sow.
4. Give each pupil two recycled containers (they can be anything from mushroom punnets to old shoes as long as they hold compost and you can put drainage holes in them) or **make your own pots** out of scrap paper or old newspapers.
5. Use scoops to fill the containers with multipurpose compost (peat free if possible as it is better for the environment) and gently tap them on the table to get rid of air pockets.
6. Show them how to sprinkle the seeds on the surface, aiming for 2-3cm between the seeds or sow larger seeds two to a pot.
7. Cover with compost, a thin layer of 0.5cm for small seeds and to a depth of approximately twice the size of the seed for larger ones.
8. Water gently but well, so the compost is nice and moist.
9. Label each container with the veg name, date, and pupil's name.
10. Cover the pot with clear plastic. Glass or cling film will keep the compost moist until the seedlings come up. Most take 5-8 days if sown indoors and left on a windowsill.
11. Gently pull out excess seedlings, leaving the rest about 4–5cm apart. For larger seedlings pull out the weakest. You can eat the seedlings you have pulled out.
12. Now is a good time to share one of your containers! Make sure you give the person you are sharing them with instructions on how to grow them. Make sure you follow local Covid-19 guidelines on social distancing.
13. Grow in a light, airy spot outdoors, or on a cool light windowsill. Keep containers in a light shade in hot weather. They need regular watering if growing in a shallow tray.

Taking Cuttings

Focus on asexual plant reproduction by growing woody herbs from cuttings. Rosemary, sage and lavender will work well.

1. Take your second container. Mix your compost with some sharp sand, grit or perlite 50:50 for better drainage or your cuttings may rot.
2. Choose shoots 7-10cm long without flowers or buds. Cut them and put them in a plastic bag so they do not wilt.
3. Take out of the bag and cut just below a leaf node. Strip off most of the leaves leaving one or two pairs at the top of the cutting.
4. Make holes around the edge of your container with a pencil, insert cuttings one at a time and firm in. Make sure leaves don't touch each other or the compost. Water and keep the compost moist but not wet.
5. To reduce water loss the pot can be covered with a plastic bag and elastic band, or an old shower cap!
6. Place somewhere light but not in direct sunlight and ventilate a couple of times a week.
7. After a few weeks the leaves should still look healthy and if you gently pull the cutting. If it has taken, it won't come out easily.
8. Leave the cuttings until you can see roots starting to poke out of the pot. Now is the time to take them out and pot them on, into individual pots or share them..

Keep a class diary and record what happens with pictures, photos, and writing. Post pictures on the **Get Togethers Facebook page**, or on **Twitter** using **#FFLGetTogethers**!

Extended Activity

- As a money raising activity, why not make your own micro greens or herbs sow-and-grow kits? Take-away containers with lids are ideal. You can design their own container label Information on how to do this can be found on page 31 on this **Food for Life resource**
- Germinate seeds under different conditions
- Plan a lesson on **seed dispersal**
- Use these **Garden Organic resources** to design a seed (page 27) and hold a seed swap (page 17)
- Learn more about **saving seed**
- Make an **origami seed packet**

Curriculum Links

We have summarised the potential curriculum links for this activity in the spider diagram as part of this resource. This activity links particularly well with the science and maths curriculum.

Science – Structure and function of plants and their different parts; life cycles; plant reproduction; how seeds grow into mature plants; what seeds and plants need to grow.

Mathematics – Counting number of seeds needed; measuring seed planting depth and distance; estimating, weighing; estimating volume of compost needed; calculating germination rates, fractions, and percentages; recording and interpreting data and calculating cost of materials and producing plants.

Learning Objectives

- To understand that sexual reproduction in plants produces seeds which grow into plants that are similar but not identical to the parent plant
- To understand that asexual reproduction in plants produces clones which are genetically identical to the parent plant
- To grow new plants from different parts of the parent plant

Key Vocabulary

Seed · Sow · Seedling · Embryo · Food Store · Seed · Coat · Germinate
Temperature · Sexual Reproduction · Asexual Reproduction
Propagation · Clone Cuttings

See scheme of work on next page

Scheme of Work – Seeds

This spider diagram starts to show how you can link this activity based around seeds and cuttings with the curriculum.

Science
- Plant life cycles and Plant reproduction
- What plants need to grow
- What is in a seed?
- Soil types
- Seed dispersal
- Seasons
- Seeds as food

English
- Writing labels and instructions
- Recording processes
- Making line drawings and stages
- Reading seed instructions from packets and growing cards
- Writing your own seed packet
- Keeping a journal recording the growth of seeds.
- Writing stories about seeds

Computing
- Produce 'how to grow' leaflets for sharing plants
- Presenting data and information
- Research

PE/Citizenship/ RE/PSHE
- Motor skills
- Sharing plants as part of Plant and share month
- Enterprise projects 'sow and grow kits'
- Teamworking
- Parables and stories related to seeds and personal growth
- Nurture
- Sex education

Design and Technology
- Designing a seed packet
- Designing a seed sowing gadget
- Recipes using seeds
- Seeds as flavourings
- Bread making
- Diet and nutrition

Art, Design and Music
- Observational drawing
- Creative label making
- Printing and pattern making using seeds
- Seed collage
- Seed sculpture
- Seeds in percussion instruments

Mathematics
- Counting, measuring, estimating, weighing
- Seeds depth and seed distances
- Calculating germination rates, fractions, and percentages Interpreting data
- Calculating cost of materials and producing plants

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