

**East Renfrewshire Council: Education Department
Practitioner Moderation Template**



Prior to the moderation exercise, please complete the following information and submit it to your facilitator with assessment evidence from one learner that you judge to have successfully attained the Es' and Os'.

Experiences and Outcomes:

I have propagated and grown plants using a variety of different methods.
I can compare these methods and develop my understanding of their commercial use. **SCN 4-02a**

Using what I know about the features of different types of texts, I can find, select, sort, summarise, link and use information from sources. **LIT 3-14a / LIT 4-14a**

Learning Intentions:

- I have propagated and grown plants using a variety of different methods
- I know how to select find, select and use the information from a seed packet

Success Criteria:

1. I can state the difference between natural and artificial methods of plant propagation.
2. I can give an example of each method
3. I can use natural methods to propagate a garlic bulb
4. I can use natural methods to propagate spider plants.
5. I can use artificial methods to propagate African violets
6. I can use artificial methods to propagate Devil's ivy
7. I can find and select information from seed packets
8. I can use information from seed packets to propagate seeds

Briefly outline the context and range of quality learning experiences that have been provided making reference to the chosen design principles.

The experience and outcomes were taught over approximately two weeks.

Lesson 1: Discussion on methods they have used to grow plants or may have seen people use to grow plants. Introduction of learning intention. Discussed success criteria. PowerPoint slides on the difference between natural and artificial methods of plant propagation (*coherence, breadth and depth*) Demonstration of how to naturally propagate a garlic bulb. Pupils carried out their own natural propagation (*challenge and enjoyment*)

Lesson 2: Starter activity on lesson 1 success criteria (natural/artificial propagation + examples). Class discussion on how to use runners to propagate plants (*coherence, breadth and depth*). Demonstration on how to propagate a spider plant. Pupils propagated their own spider plants (*challenge and enjoyment*). Pupil feedback sheet on how they have been successful and what skills they have learned so far.

Lesson 3: Introduction of propagation of plants using stem and leaf cuttings. Demonstration of propagation methods, including the use of rooting powders (*coherence, breadth and depth*). Pupils selected what plant they would like to propagate (*personalisation and choice*). Class discussion on Factors needing for plant growth. Pupils added fertilisers to all plants recently propagated.

Lesson 4: Lesson Starter- pupils were allocated seed packets and had to use them to find, select and use the information to answer questions. Cress seed packets were then used and pupils followed information on the packet to propagate seeds. Pupils learnt about the different types of seeds and the propagation methods use for each. Matching exercise was used to consolidate learning. Pupils also had the opportunity to propagate avocado seeds (*progression, challenge and enjoyment*).

Record the range of assessment evidence that was gathered to meet the success criteria (Say, Write, Make, and Do) considering breadth, challenge and application.

Say: Questioning of pupils during lesson starters, throughout the lesson and while propagating plants. Class discussions on propagation methods used and which ones were successful. (breadth and challenge)

Write: Completion of lesson starters, notes, selecting information from seed packets (challenge and application)

Make/Do: using a range of techniques to propagate plants. Differentiation- depending on pupil's ability and progress they could select different plants to propagate and use more advanced techniques. (breadth, challenge and application)

Briefly outline the oral/written feedback given to the pupil on progress and next steps, referring to the learning intention and success criteria.

Oral feedback – given continuously during class discussions and questioning for all learning intentions. Feedback and next steps identified when propagating plants

Written feedback – during jotter marking and marking of written answers to revision questions in lesson starters.

Pupil Voice:

What have you learned? How did you learn? What skills have you developed?

Pupils completed plenary questionnaires on what they have learned after lesson 2

The pupil was asked the questions above and gave the following responses:

'I learned by watching the teacher how to propagate plants'

'I have learned gardening skills and what part of the plant to take cuttings from. I know to fill plants pots with over half soil and not to over water plants. I can add fertiliser to help plants grow. I can use seed packets to get information you need to know'

'I will use these skills to make my garden nice'

Did the learner successfully attain the outcomes? YES/NO

Learning intention

- To propagate and grow plants using a variety of different methods

Success criteria:

- State the difference between natural and artificial methods of plant propagation.
- Give an example of each method
- Use natural methods to propagate a garlic bulb.
- Use natural methods to propagate spider plants.
- I can use artificial methods (leaf cuttings) to propagate African violets.
- I can use artificial methods (stem cuttings) to propagate Devils wry.
- I know what method to use when sowing fine, medium or large seeds.
- I can find and select information from a seed packet
- I can use information from a seed packet to successfully propagate seeds.

Asexual Propagation

7/11/17

- Asexual propagation is used to produce more plants with known characteristics.
- This is because all the offspring are genetically identical to the parent plant (they are clones).
- Plant growers use both natural and artificial methods to produce more plants.
- Natural = uses the plants normal means of reproduction.
- Artificial = Takes cuttings from the plant and uses the plants ability to regenerate to grow more.

Asexual propagation

7/11/17

Asexual propagation

(new plants produced from one parent)

Natural propagation

- Bulbs = garlic
- Tubers = potato
- Plantlets at end of runner = spider plant, strawberry
- Off sets = Mother-in-law's tongue
- Leaf edge plantlets = Mexican hat plant

Artificial propagation

- Stem cuttings = Devils Ivy
- Leaf cuttings = African violet

Bulbs

9/11/17

- Include plants such as daffodil, onion and garlic
- Bulbs contain a food store (starch) which will provide energy for the plant to grow for the first year.
- Each year the 'mother' bulbs will produce 'baby' bulbs which grow from the side.
- Gardeners can separate these bulbs and grow them individually.

Runners

- Plantlets can grow at the end of horizontal stems called runners. Spider plants and strawberry plants produce runners.

Sowing Seeds

- Seeds need to be spaced out evenly to prevent the plants competing for:
 - light
 - Water
 - Soil nutrients
 - Root space

Seed size	Method of sowing	
Medium	Carefully scattered over the surface of the compost using thumb and forefinger	✓
Fine	Mixed with silver sand	✓
Large	Individually into seed trays	✓

Good ~~idea~~!

Ave. seed content 60

Sow by 10/99

K

67p

DAHLIA

DWARF BORDER MIXED COLOURS

11 22 95

Grow as Half Hardy Annual
(Sow under cover)

Height Approx.
60cm (2ft)



SOW



PLANTING
OUT



FLOWERING/
HARVEST



Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	26

DESCRIPTION Medium sized double and semi-double flowers are borne in profusion in a superb colour range. Ideal for beds and borders.

SOWING/GROWING Sow in a propagator on a window-sill or in a greenhouse at approx. 15-20°C (60-68°F) using a good quality, moist compost. Cover the seeds with 6mm (1/4 in) sieved compost. Transplant seedlings into trays, or singly into 75mm (3 in) pots and grow on. Acclimatise plants before planting out when all danger of frost has passed 30cm (12 ins) apart. Choose a sunny open position.



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LUXURY SEEDS LTD. SCOTLAND

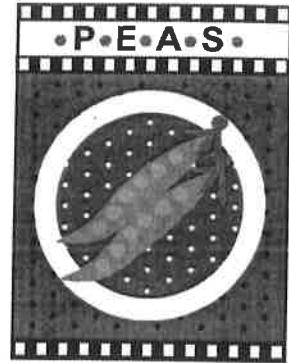
Evidence for SC 7

St Luke's High School National Biology

Propagating and Growing Plants

1.2A Interpreting Seed Packet information

It is important to read all the information on the back of seed packets to get the best results when sowing seeds. You will be given a picture of a seed packet. Read the information and use it to answer the questions on this page in sentences.



Answer the questions below:

1. What type of flower will grow from these seeds?
Dahila ✓
2. What variety of this flower is it?
Dwarf border mixed colour ✓
3. How many seeds are in the packet?
60 ✓
4. When is the best time for these seeds to be sown?
February to mid April ✓
5. What height will the plants grow to? - Read packet carefully to
30cm x 60cm select correct information.
6. At what depth should the seeds be planted?
6mm ✓
7. At what temperature range should the seeds be sown at?
15-20°C ✓
8. During what three months will the plants flower?
late August to October - write out August, September, October
9. The seedlings should not be planted outside until all danger of frost has passed. Why do you think this is?

Too cold so the enzymes wont work therefore photosynthesis wont happen. ✓ Good, you have linked your knowledge across topics.

Think! What would happen to the rate of photosynthesis when it is cold?
Does it stop completely?

Collecting seed evidence

Further evidence
for SC7

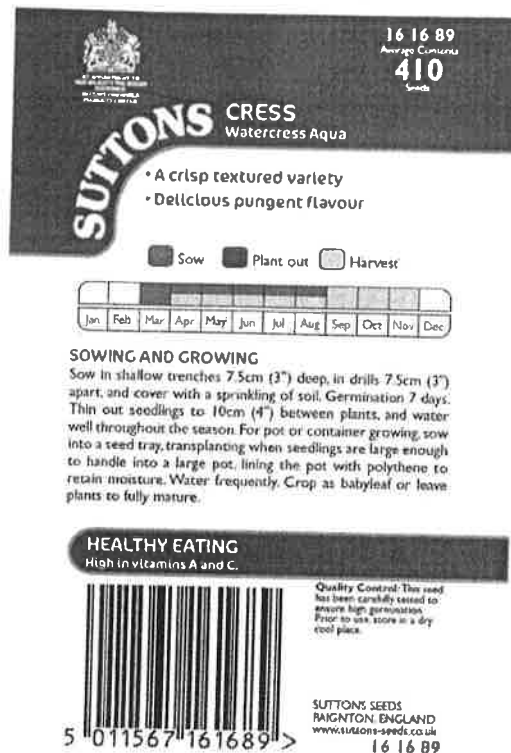
1. The name of the plant is sweet pea and the variety is jet set mixed. ✓
 2. You should sow these outdoors in mid march to mid May. ✓
 3. You should add 1.5cm deep in compost on top of the seeds. ✓
 4. Seedlings appear usually 12-21 days after sowing. ✓
 5. The plants will flower in April to May. ✓
 6. Plants can be grown unsupported but sticks or canes will ensure straighter stems especially if required as cut flowers.
- Well done Ara, you have successfully selected the information required.



Pelleted Seeds

- Pelleted seeds are fine seeds coated in clay. The advantages of this are:
 - It makes the seeds larger and easier to handle.
 - The clay can contain
 - nutrients to help the seed germinate
 - Pesticides to help kill pests in the soil

Cress seeds



1. Select a clean seed tray or plant pot and fill with seed compost. level the compost
2. Firm down the compost by pressing it gently
3. Scatter the seeds thinly and evenly over the surface of the compost. Mix seeds with silver sand if they are very small.
4. Cover the seeds evenly with a thin layer of sieved compost. Note: Check seed packet instructions - some seeds do not need to be covered.
5. Firm down the soil by pressing it gently
6. Use a watering can with a fine rose to water your seeds

7. Use a pencil to write your name, date, type a variety of seed on a plant label. Push into the soil.

8. Cover the tray or pot with a clear plastic sheet and news paper (if required check seed packet instructions) and place in a propagator.

Pupil voice.

Today I learned how to use artificial methods and natural methods to propagate spider plants, garlic plants, devils ivy and African violet. The teacher demonstrated how to do this and I have developed gardening and skills and propagate skills.

Lesson Starter

1. State the difference between natural and artificial methods of propagation. ✓

SC1 →

The difference between natural and artificial methods of propagation is that natural propagation uses the plants normal means of reproduction and in artificial you take cuttings and the plant regenerates.

2. Give an example of a plant that can be propagated using natural methods.

SC 2 →

Spider plant ✓

3. Give an example of a plant that can be propagated using artificial

Devils ivy ✓

Excellent! ✓

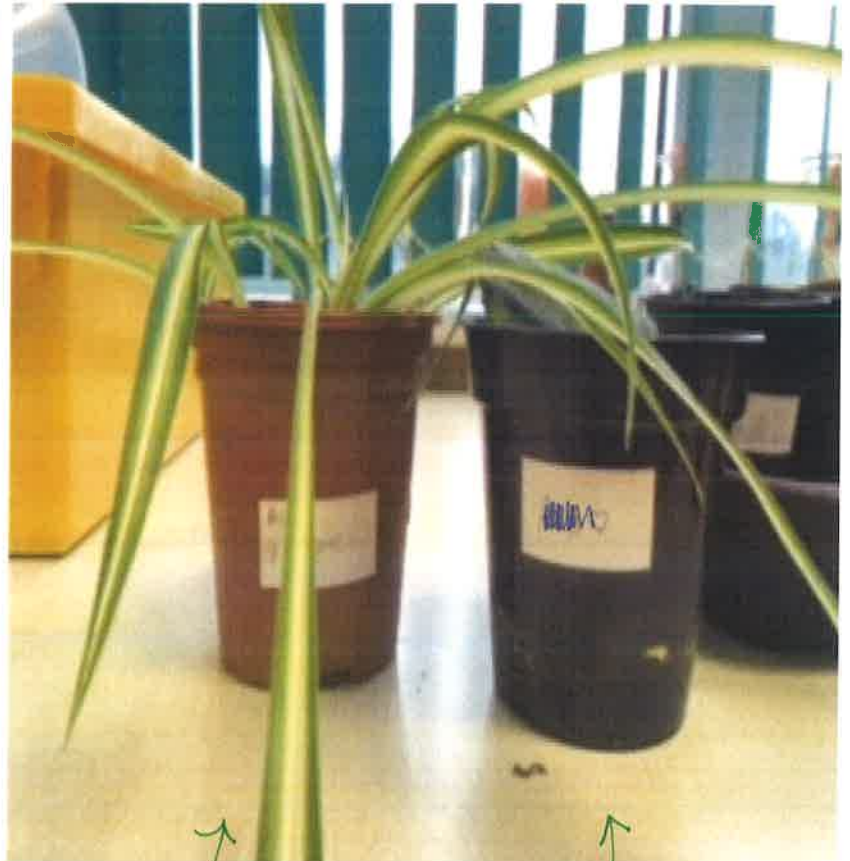


avocado

SC 8 - propagate seeds (cress)



SC 3 - garlic



SC 4
- spider
plants

SC 6 + SC 5
- devil's - African
ivy . violet.

Lesson Starter

Answer the following questions using your seed packet:

1. Name and variety of plant
2. What time of year should you sow outdoors?
3. How much compost should be added on top of the seeds?
4. When do seedlings appear?
5. When will the plants flower?
6. Any tips?