

TEACHER RESOURCE EXCHANGE

Runner Bean Germination

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At a Glance

Subject: Science

Keystage: Key Stage 2

Timescale: Project

Scope: Individual teacher

Resource Type: Interactive Whiteboard, Class Teaching

Development Stage: Developing Idea

Description: Two runner beans were planted in a jar which had moist paper to keep them against the front of the jar. They were observed closely for several days. The bean seeds were photographed every day, and sometimes more frequently in the latter stages.

 This formed an interesting activity, encouraged close observation and fitted in well with work on plants. It is hoped that teachers and pupils will be able to complete a similar task themselves.

Objective: To observe the difference in growth activity at different stages.

 To know that there is specific vocabulary related to seeds and young plants.

Assessment: Can the children appreciate that seeds take time to germinate and that seeds grow at different rates?

 Could the children make sensible predictions about how seeds would grow?

Prior Knowledge: That seeds need certain conditions to grow: light, water, and warmth.

 That still pictures can be used to represent movement when animated.

Expectations: The children should appreciate that seeds take time to germinate.

 They should be able to make sensible predictions about how seeds would grow.

 The children will realise that digital photographs can be used to show things happening over time, and that animation makes it look realistic.

Hints: This activity would present well on an IWB.

Materials

1. Lesson ideas

http://tre.ngfl.gov.uk/uploads/materials/27005/Runner_Bean_Germination_text.doc

MS Word

- This file provides more specific ideas on how to use this resource.

2. Runner Bean Germination

http://tre.ngfl.gov.uk/uploads/materials/27007/Growing_Runner_Beans1.ppt

MS PowerPoint 2

- MS PowerPoint file

3. Runner Bean Sequencing

http://tre.ngfl.gov.uk/uploads/materials/27008/bean_sequence.jpg

JPEG

- Cut the pictures up and rearrange in the correct order.

4. Bean seed photograph with scale

http://tre.ngfl.gov.uk/uploads/materials/27009/photo_bean.jpg

JPEG

- Use this to show how big the seeds were. Would it be good to do the same at the start of the class' observations?

5. Labelled bean seed

http://tre.ngfl.gov.uk/uploads/materials/27010/bean_labels.jpg

JPEG

- This can be used for HA pupils who need extending. They could look up the definitions in a good quality dictionary.

6. Bean seed labelling activity

http://tre.ngfl.gov.uk/uploads/materials/27011/bean__no_labels.jpg

JPEG

- Bean seed diagram with arrows ready for labelling.

7. Bean germination animation

<http://www.botanical-online.com/animation4.htm>

Website

- Another example of an animation

8. Movies of germination

<http://plantsinmotion.bio.indiana.edu/plantmotion/earlygrowth/germination/germ.html>

Website

- See example of how other seeds germinate.

9. Life cycle of a bean plant.

<http://www.sparta.k12.il.us/SID/plantunit/growthofbeanseed.htm>

Website

- Simple diagram drawings of the stages of growth.

10. Cress germination

<http://www.tre.ngfl.gov.uk/server.php?request=cmVzb3VyY2UuZnVsbHZpZXc=&resourceId=12999>

Website

- See a similar resource on the TRE

11. Recording germination using a digital microscope

<http://www.tre.ngfl.gov.uk/server.php?request=cmVzb3VyY2UuZnVsbHZpZXc=&resourceId=10361>

Website

- Put your digital microscope to good use. See an idea on how to use it on this TRE resource.

Comments

1. Alan Rodgers, TRE Moderator (30 Nov 07)

Check that you are happy to download the MS PowerPoint file of this size.

2. Dan Bunker, Tre Moderator (13 Dec 07)

This is a comprehensive set of resources that will engage pupils and provide opportunities for developing observation skills and discussion around factors affecting plant growth.

 This resource will be particularly useful for those following the QCA SOW for Science Unit 3B - Helping Plants Grow Well.

Material: Pea plant germination

<http://www.haworth-village.org.uk/nature/time-lapse/time-lapse.asp?pic=26>

- A time-lapse sequence of a pea plant germinating and growing.

<http://contribute.ngfl.gov.uk/server.php?request=cmVzb3VyY2UuZnVsbHZpZXc%3D&resourceId=14154>