

ACTIVITY 6

Decomposition

In this activity, the process of decomposition of food is monitored over time. Students will learn that food wastes rot and non-organic materials such as plastic will essentially not break down. Non-organic wastes will occupy space in landfill if they aren't recycled.

English ACELY1651 Create short texts to explore, record and report ideas and events using familiar words and beginning writing knowledge

English ACELY1661 Create short imaginative and informative texts that show emerging use of appropriate text structure, sentence-level grammar, word choice, spelling, punctuation and appropriate multimodal elements, for example illustrations and diagrams

English ACELA 1437 Understand the use of vocabulary in familiar contexts related to everyday experiences, personal interests and topics taught at school

English ACELA1454 Understand the use of vocabulary in everyday contexts as well as a growing number of school contexts, including appropriate use of formal and informal terms of address in different contexts

Maths ACMMGOO7 Compare and order duration of events using everyday language of time

Maths ACMMG021 Describe duration using months, weeks, days and hours

Science ACSSU002 Living things have basic needs, including food and water

Science ACSSU017 Living things have a variety of external features

Science ACSSU211 Living things live in different places where their needs are met

Science ACSHE013 Science involves observing, asking questions about, and describing changes in, objects and events

Science ACSHE021 Science involves observing, asking questions about, and describing changes in, objects and events

Science ACSIS011 Participate in guided investigations and make observations using the senses

Science ACSIS 233 Engage in discussions about observations and represent ideas

Science ACSIS027 Use a range of methods to sort information, including drawings and provided tables and through discussion, compare observations with prediction

Sustainability OI.1, OI.2, OI.3, OI.4, OI.8 All life forms are connected and interdependent, and actions for sustainability require us to evaluate past practices and make balanced judgements based on environmental impacts

Preparation before the activity

Think of several wastes that you want to bury such as an apple core, an eggshell, a piece of lettuce, an orange peel, a plastic wrapper, a piece of polystyrene, a small piece of cotton fabric and a small piece of newspaper approximately A5 size.

Create corresponding garden tags from the side of a plastic milk bottle, cut into strips the size of an icy pole stick. Draw a picture on the tag of the objects that you will bury, or write the name of each item in permanent marker.

You will need

- A small, grassed, dedicated area of the school yard, approved by management and the grounds staff. Choose an area where few people walk.
- Waste to bury, with corresponding tags
- A spade
- Paper and pencils for drawing
- Ipad or smartphone, for photo-journaling

Method

ENGAGE

Show the class the waste that they will be burying. Ask the students to predict what will happen to the items. Record this information.

EXPLORE:

Go outside with the class. Bury each item in a separate hole around 15cm deep, cover with churned-up soil, and mark each spot with the tags you have created prior to the lesson. Ensure that these tags are not disturbed and/or map where each of the buried items are. Leave around 30cm between each hole.



EXPLAIN

Mark your calendar two, four, six and eight weeks from the starting date. On the second, fourth, sixth and eighth weeks, carefully dig up each item to see what happened. Ask the students to journal what happened over time, in picture form. Also make a photo-journal of the extent of decomposition of each waste at each stage, with the smartphone or tablet.

Ask the children if they understand what is happening. They might suggest that the food is rotting or composting. Ask them if they understand the role of worms and other invertebrates like millipedes. These animals, in turn, are using the food in the ground as a food and moisture source.

Suggest that the children use descriptive words to describe what has happened, such as rot, decay, compost or break down.

ELABORATE

Ask the students to suggest changes to the experiment in future and predict outcomes. For example, compare one group of rotting items with another, under different conditions such as adding more water or adding earthworms. Discuss these possibilities for future experiments.

EVALUATE

On the eighth week, students look at their journals and look at the progress over time of how the different items decomposed. They could use descriptive words to accompany their drawings.

Students reflect on their understandings (e.g. *some objects rot and break down, some break down quickly and some break down slowly, some do not break down, some things are smelly when they break down*).

If you see that some of the items could decompose more, and the children wish to continue the experiment, bury them again for another time period, such as a further two weeks or a month.

The main message to convey is that many of our wastes do not just 'go away'. Non-organic wastes such as plastic will occupy space in landfill if it isn't recycled.

References

Bright Hub Education (2014) A Hands-on Recycling Lesson Plan for Kindergarten Through Third Grade, viewed 11 February 2021
<http://www.brighthubeducation.com/pre-k-and-k-lesson-plans/6679-hands-on-recycling-lesson-plan/>

Teach Engineering (2018) Hands-on Activity: Bury Your Trash Experiment, viewed 11 February 2021,
https://www.teachengineering.org/activities/view/duk_landfill_music_act