D4: SMART PACKAGING

Overview

The aim of this activity is to illustrate the importance of **recycling** and the practical realities of waste disposal. Students learn how some types of waste break down quicker than others, and discover the impact that our waste disposal has on the environment. The activity gives them a chance to investigate the different **biodegradabilities** and **polluting effects** of the waste that they produce.

Smart packaging is not **solely** about the **environmentally friendly** disposal of packaging. It is also about using packaging to **enhance the shelf life** of locally produced foods. In this way, smart packaging should contribute to supporting locally produced food rather than sustaining a dependence on imports. The **connection** between **smart packaging** and the **agrifood market** is perhaps an aspect that students may not be aware of. This activity is an opportunity for them to research it.

Suggested approaches:

- Arrange students into small groups and ask them to build up their knowledge about recycling and waste disposal using the resources provided. The next step will be **D4 ACTIVITY 1: SMART PACKAGING**, in which students build a small compost bin and monitor the breakdown of the contents over a period of time.
- Alternatively, the compost bin can be built and monitored as described in **D4 ACTIVITY 1: SMART PACKAGING** first, and then students can consolidate their findings using the resources provided.
- Ask students to compare the time scale of the biodegradability of a selected number of bags with the time scale advertised. For example if the bag is labelled as breaking down in ten to fourteen days, put it to the test. Has it really broken down within that time?
- Set students the task of researching the connection between smart packaging and the agrifood business, and comparing Ireland's packaging performance with that of other countries that supply food to us.

Resources:

- Click here to view an interesting Irish Examiner article on smart packaging.
- The EPA has great educational resources containing useful videos and exercises for students.
- Check out more information on recycling in Ireland.

D4 ACTIVITY 1: SMART PACKAGING

Background

The aim of this activity is to investigate the problems associated with excess packaging and waste going into landfills.

Suggested approach:

- Depending on the class, using worms could cause disruption and some students may be reluctant to participate. It is possible to do the investigation as a class demonstration instead if this is more suitable for the class.

Equipment required:

- A glass or clear plastic container (at least 35 cm deep)
- Cardboard to cover the container
- Soil
- Sand
- Worms
- Potato peels
- Newspaper
- Biodegradable plastic, e.g. biodegradable bin liners
- Plastic wrapping
- Dry leaves
- Two markers suitable for writing on plastic (e.g. CD pen) each of a different colour
- Biro, pointed screwdriver or metal skewer (to punch holes in the cardboard)

What to do:

1. Fill the glass or plastic container with layers of sand and soil until they are approx. 7 cm from the top of the container.
2. At different points between these layers, place the potato peels, newspaper, biodegradable plastic and plastic wrapping. It is important that the plastic wrapping is not layered across the soil, preventing the worms from getting through.
3. Using a marker, record on the outside of the container the location of each of the materials listed.
4. Cover the top of the container with dry leaves.
5. Scatter some worms from the garden on top of the leaves.
6. Using a biro, make a number of air holes on a sheet of cardboard and use it to cover the container.
7. Take a photo or draw a diagram of the container, showing where all the materials are located.
8. Surround the container with a black bag.
9. Leave the container in a warm, dry place for two weeks.
10. After two weeks, remove the packaging and have a look at all the materials.

    (?) ***Is everything in the same place?***

11. With a different coloured marker, mark where the materials are. Write a description of what has happened to each material.
12. Continue to monitor the compost for as long as possible, and graph the results.

Resources:

- View appropriate videos and exercises for students from the EPA website.
- Information on the life cycle of plastics.