


Maker
{Futures}

Rubbish Robots



Meet 'Dotty' a robot who recycles glass. Dotty's first language is Cymraeg  but she also speaks English, just like Olive (age 6) her maker.

Aim

The aim of this activity is for children to design and build a robot from recycled materials. Children will identify a role and produce a profile for their robot, which explains how they help the environment, using different languages.

Intended Learning Objectives

Design a robot that will play a role in helping the environment in different parts of the world.

Learn to build a robot using cardboard and recycled materials that have been collected in the classroom and at home.

Create a profile for the rubbish robot and produce a short film to present the robot using different languages.

All children will be able to:

- Build a robot using cardboard / cardboard and other recyclable / reusable materials.
- Write or draw a profile for their robot, which includes information about their role in helping the environment and that include words in another language.

Some children will be able to:

- Develop the basic robot model to include additional features and / or decoration.
- Present their robot profile in a short film using one or more different languages.

Activity

Introduction

This lesson is focused on building robots from rubbish and creating an identity for them, an important aspect of which is explaining how the robot will contribute to overcoming an environmental challenge. The robots can be designed to live and work in any part of the world.

Exploration

In the exploration stage the children will investigate and identify:

- i) Environmental issue (anywhere in the world) that is of concern to them. The environmental issue could perhaps connect different aspects of their own identity, for example, plastic pollution in Sheffield (where they live) and the Indian Ocean (links to their heritage / where members of their extended family live);
- ii) Solution to help the environment – what would improve the situation? Children should be encouraged to think as creatively as possible and use their imaginations, as the solution will be addressed by a robot that they will design.
- iii) Designing a robot: children can follow the five steps below OR focus on exploring their own ideas:

1. **FUNCTION** - what does your robot need to be able to do?
2. **ENVIRONMENT** - where will your robot live – in one or more places? What is the environment like – desert, tropical, forest, up in the mountains or in a city?
3. **FEATURES** - will your robot have features - do they need to see, smell, taste, touch to do their job?
4. **MATERIALS** - which materials will survive the environment your robot lives in? Do they need to be visible or camouflaged?
5. **COMMUNICATION** - how will they communicate? Will they use words or signals? Will they speak a language or multiple languages?

Children source information in any language of their choosing. If children don't speak other languages, they can search for keywords in different languages. Don't forget about sign language. Their robot may use physical ways of communicating. The languages chosen may be influenced by where the robot lives in the world, the environmental challenge, or who the robot needs to communicate with.

Skill Builder

This stage of the activity involves learning the skills required to build a robot from cardboard and recycled materials. The two YouTube videos provide some inspiration for building robots with cardboard and other materials.

- [Making a Cardboard Robot](#)
- [Easy to build robot with recyclable materials](#)

Children can develop their skills in using cardboard for model making by identifying the different techniques used to cut, manipulate and attach cardboard. The techniques can be collated into a '[Working with Cardboard](#)' design board for the classroom, which labels the different techniques in English, as well as any other languages used by the children. The design board serves as a reminder of the techniques and possibilities available to them when working with this material, as well as a visual reminder and record of the diversity of languages spoken in the classroom. The process of sharing can be used to identify similarities and differences between words in the range of languages spoken. At the end of this stage children will have developed skills in working with cardboard and be ready to develop their own robots during tinker time. They can base their robots on the purpose and identity that the children explored during the exploration stage.

Tinker time

In the final stage, children can build their robot using methods identified on the 'Working with Cardboard' design board and additional art supplies to help create an individual identity, as well as produce an accompanying profile. The profile can be written in English and / or different languages. Children could produce a short film presenting their 'rubbish robot' and its purpose and / or record their robot's voice (using an ipad or tablet) in one or more languages.

Apps such as Flipgrid or Padlet are a great way for children to create and share digital profiles of their robots.

Materials

- Variety of cardboard packaging including cartons, corrugated, cereal boxes, tubes etc.
- Recyclable / reusable packaging – bottles, bottle tops, tins etc.
- Selection of art supplies for decorating the robots (foil, bottle tops, tissue paper, googly eyes).
- Scissors or cardboard cutters (lightly serrated canteen knives work well for corrugated card).
- Glue and other attaching aids (tape, double sided stick pads, string, brass fasteners etc).



Share

We would love to see the photos and videos of your robots and learn a bit more about the languages they speak. Share your creations with us:

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