

Numeracy: Shape and Sorting - Building Understanding

## **Lesson 2: Making a model with 3D shapes**

### **Lesson 2 of 4**

Simon



# What are we going to learn today?

To explore 3D items.

To explore the properties of 3D shapes through play and exploration.

## Key Vocabulary

3D

2D

slide

roll

stack

flat

curved

tall



## For this lesson, you will need:

- Objects from your home and from your recycling bin. These could include boxes, crisps tubes, toilet roll tubes, plastic trays, straws etc.
- A slope or ramp. This could be a hill outside, or a book leaning against the wall.



# Explore the items you have gathered



Images from Pixabay

Touch and feel the objects.

Touch the vertices (corners) and the surfaces.

Which are flat?  
Which are curved?

Do you know the names of shapes.



# Does it roll, slide or neither?



Images from Pixabay

The shape of the object will change the way it behaves at the top of a slope.



# Task 1 - Observe what happens when each of the items is put at the top of a ramp.

## Instruction

Make a slope or ramp. Put each item at the top of a ramp and then see what happens.

## Questions to ask

What happened?

Did it move slow or fast?

Can you guess what this item will do?



# Making a tower



The objects can be stacked to make a tower.

You can stack your objects to make a tall tower.

Which items will work best to make a tower?

Images from Pixabay



# Task 2- Stacking 3D objects

## Instruction

Stack the items you have gathered. Try different combinations to make the tallest tower.

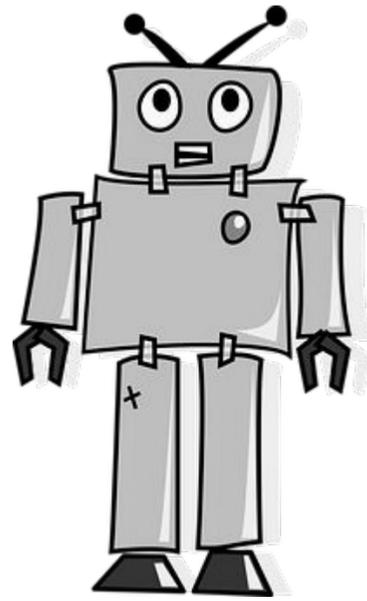
## Questions to think about

Which items will you put at the bottom? Does size or shape make a difference?

Are you able to make your tower taller each time you try, as you learn which shapes work best?



# Making a model using 3D objects



What could you make using your recycled objects?

Here are some ideas for things you could make.

Images from Pixabay



# Task 3- Modelling using 3D shapes

## Instruction

Use your recycled materials to make a model of anything you like.

## Questions to think about

Which items will work best for different parts of the model? For example, what will you use for the arms of a robot?

Which item matches the shape of the house (for example)?



# Unit 2 Lesson 2: Making a model with 3D shapes

## Make it easier

Make a tower using a single shape. For example, stack boxes of different sizes. This will give a chance to repeat actions and notice properties before moving on to the next shape.

## Make it harder

Name the shapes and introduce vocabulary associated with 3D shapes. Can you identify any common features such as flat faces or curved faces?

## Other ideas

Shape search around the home or local environment. Can you find a shape that is the same as a box or a toilet roll tube? What else can you build using 3D shapes?

