Activity Overview:

This activity can be done by individuals or groups.
3D printing technology is becoming more common in all industries, including the medical and engineering industry. After this activity, students should be more familiar with the basic process of 3D printing and how a product comes about through this technology.

Materials:

Material	Quantity (per group)
PlayDoh	1 color

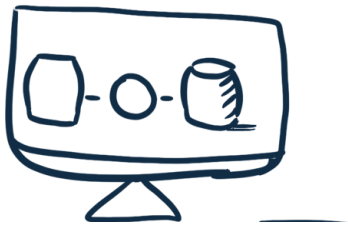
Instructions:

Fill in the missing words in the next page using the terminologies in the box given below. Note that not all of the terminologies have to be used.

Vertical	Horizontal	Software
Cutting	Blueprint	Slicing
Layers	Melting	Shooting
Printing	Stacking	Printer platform
Cools	Heats up	Plastic

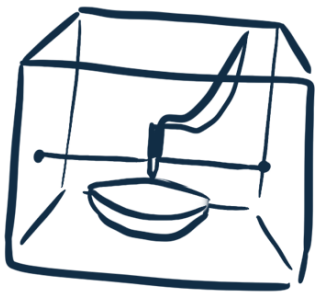
Exercise 1: The basic process of 3D printing goes like this!

1. A _____ of the product I want to make is created using a special _____ on the computer.



2. Through a process called _____, the model of the product I want to make is divided into _____ _____. This is to make sure that the printer can print form the bottom to top of the product.

3. After step 2, the different dimensions are finally sent to the specialized 3D printers, ready for _____. The printer adds one layer on top of each other to create a whole piece. Each layer is created with _____ as a raw material.



4. As each layer is deposited onto the previous one, they go through _____ to stick itself to the first layer. After a very short while, the layer _____ and allows the product to maintain its shape.

Exercise 2: 'Slicing' and 'Reassembling' with Playdoh!

In 3D printing, slicing the wanted prototype of an object and reassembling the layers is the most important process. In the second exercise, we want you to try these two processes using just **PlayDoh**!

Sketch a blueprint of your product and try to make it into a 3D shape using playdoh. Remember! You are using the process of **SLICING.** This means that each layer of the 3D shape should be made individually before being reassembled to a fully formed shape!

Make **at least 15 layers** of thin horizontal layers of PlayDoh to complete your product ☺

My Blueprint:

For Teachers:

1. A blueprint of the product I want to make is created using a special software on the computer.

2. Through a process called slicing, the model of the product I want to make is divided into horizontal layers. This is to make sure that the printer can print form the bottom to top of the product.

3. After step 2, the different dimensions are finally sent to the specialized 3D printers, ready for printing. The printer adds one layer on top of each other to create a whole piece. Each layer is created with plastic as a raw material.

4. As each layer is deposited onto the previous one, they go through melting to stick itself to the first layer. After a very short while, the layer cools and allows the product to maintain its shape.