



3D PRINTED MOONBASE WORKSHOP

CONTENT

This workshop is suitable for children and young people aged 7 and upward.

This workshop's main activity involves designing and building a miniature moonbase using polymer clay. We use the coiling technique, which is similar to the way a 3D printer works, building in layers. Participants begin by sharing their personal knowledge and understanding of the moon and its atmosphere and learning from one another. They do this through commenting on a starter question and answering and discussing some true or false questions as a group. While considering the pros and cons of different building materials for their moonbase, the participants are introduced to 3D printing before learning the coiling technique to produce their own model moonbase. Participants are encouraged to think about the base's function as well as aesthetics.

TIMING 2-3 hours

Allow around half an hour to 40 minutes to do the starter question, quiz, materials activity and introduce the idea of 3D printing a moonbase.

Allow 1.5 hours or more to demonstrate the task and build the moonbase.

TEACHER/FACILITATOR INSTRUCTIONS

SLIDE 1-WHAT WOULD YOU TAKE TO THE MOON?

As participants are settling/arriving, invite them to chat about/write down 3 objects they would take to the moon if they were moving there next week. Encourage them to think about why. Use this as an icebreaker to begin the session.

SLIDES 2-9-TRUE OR FALSE QUIZ

Allow participants to hear each question and raise their hands for either true or false before revealing the answer and discussing. Alternatively use show-me-boards.

SLIDE 10-MATERIALS ACTIVITY

This task encourages participants to start thinking about suitable/unsuitable materials for building on the moon. Get them in groups/pairs and ask them to generate pros and cons for each material. This can be shared and discussed critically as a group.

SLIDE 11-12-3D PRINTING

Introduce the idea of 3D printing, discuss and watch the short video showing how it works.

SLIDE 13-DEMONSTRATE THE TASK

This is a support slide to use before and during demonstrating the practical task of building the moonbase with polymer clay. (OPTIONAL VIDEO DEMONSTRATION INCLUDED)





SLIDE 14

More information on the larger project and sponsors of the workshop.

SLIDE 15

Further reading-this can be printed out as a take-away hand-out for the end of the session.

MATERIALS

To make a moonbase no larger than A5 paper, each participant needs 150-200g of polymer clay.

Rolling pins and clay tools are optional but useful.

PARTICIPANT EXAMPLES



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