



Jigsaw Chocolates

Completion time: 1 Lesson

Materials and Resources:

- A wooden jigsaw puzzle, with large pieces
- Chocolate, and means by which to melt it
- Formech vacuum forming machine
- Food safe plastic material, such as PVC, or similar
- <http://formech.com/case-studies/vacuum-forming-artisan-chocolatier/>

Skills at a glance:

Mathematics

Measurement

Language

Discussion, reading, listening

Thinking skills

Design, expression, applied knowledge, material selection, independent thought, and questioning and reasoning

Science

Heating plastics and effects, plastic/polymer material knowledge, and the reaction of certain materials when exposed to heat

Project Outline:

Students will make a very simple, quick and easy tray, to be used as a chocolate mould. Using pieces of a wooden jigsaw puzzle, students will utilise these as their moulds with which to complete the vacuum forming process, instantly producing their final product. This project is a fantastic complete project for younger students, or a great demonstration tool for older students who might not have seen the technology in use before. It means that students will spend no time at their benches designing or making their own moulds, and rather they will be gaining hands on experience and training using the vacuum forming machine themselves, with demonstrations and training provided by their teacher.

Method:

Students can begin by placing the pieces of the wooden jigsaw evenly in the forming area of the machine. A minimum of 1.5cm between pieces should be allowed to ensure a perfect form. Wooden jigsaw puzzles intended for use by 2 year olds make for the best chocolate moulds or ice cube trays, as pieces tend to be much bigger and deeper.

Once pieces are in place, they can now be vacuum formed using appropriate food safe plastic material. 1mm food grade PVC is recommended, although other materials can be used.

Once formed, there is no need for trimming, as the formed sheet produces a chocolate mould tray. It can now be washed and dried, and have melted chocolate poured into its jigsaw shaped recesses. Students must tap their tray on the work bench to remove any air bubbles, before leaving to cool and harden completely.

Individual jigsaw shaped chocolates can now be turned out of their mould onto a clean surface, enjoyed right away, or saved for later.



Homework Tasks:

Taking all the information and experience that students have learnt from this project, students can be given the homework task of drawing up a short project plan for a similar item, perhaps a Christmas decoration, or an ice cube tray mold. In this they must identify what existing object they will use for their mold to be vacuum formed.

Alternatively, students might be given the Formech Vacuum Forming Guide for the Classroom to learn and revise, for a short and simple quiz or test in the next lesson. This will allow students to take aspects of the guide, and apply it to what they observed when completing this jigsaw chocolate mold project.

Optional Extras:

Following the theme of this lesson, demonstrating that objects from the world around us make for fantastic mould materials, this idea might be extended to objects from around the classroom or workshop.

Again, this provides opportunity to talk about varying aspects of the vacuum forming process; undercuts, draft angles, venting, mould release, and suitable/unsuitable mould materials, which are all outlined in the Formech Vacuum Forming Guide for the Classroom, which students can be provided with and refer to. Suitable objects from around the classroom or workshop can be selected and vacuum formed demonstrating these points.

Student Accomplishments:

- The production of a food mould for multiple use
- Knowledge of food safe plastics
- Following verbal instructions and making observations
- Learning how existing objects can be utilised within research and design, as well as manufacture
- Practical hands on experience using a vacuum forming machine, and understanding its wider application
- Applied knowledge

Teachers notes:

Share pictures and videos of your Formech project across social media, using [#formechemade](#)

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https://formechem.com/wp-content/uploads/Vacuum_Forming_Guide.pdf

