BRONZE LEVEL

CREST AWARDS

Teachers' guide to support SEND students

DESIGN AND MAKE A PIZZA BOX

DESIGN & MAKE PROJECT

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How to run CREST

Preparation

Ready to get going with CREST? Enter your student's project by signing up for a CREST account here: crestawards.org/sign-in

Create a new Bronze project with the name of the student and the title of their project. If you don't have all the details, you can fill these in later!

Run the project

We have some super handy workbooks and profiles for your student to use when completing their CREST project. You can download these when you create your CREST account by following the link above. Encourage your student to use the workbook or profile to plan and carry out their project, keeping a record of all their amazing progress. Make sure you consider safety and risks!

Reflection

Once your students have completed their CREST project, don't let that be the end of their learning. They should now fill in any remaining sections of their workbook. This is a chance for them to reflect on all the interesting things they've learnt and the invaluable skills they have used.

Enter your project for a Bronze CREST Award

Hard work deserves a reward! Celebrate and certify your students' achievements by entering their project for a Bronze CREST Award.

Simply log in again to your CREST account at crestawards.org/sign-in. Select the project and upload a sample of the students' workbooks or other project evidence. Check the participating student has met each of the criteria on the teacher assessment page. Finally, complete the delivery and payment details to order your snazzy certificates. Congratulations on completing CREST Bronze!

What next?

The scientific discovery doesn't need to end here. Students can have a go at the next level up – a Silver CREST Award. Don't keep all the fun to yourselves; encourage others to take part in CREST projects and share the wonder of science. For free ideas on how to get started, see crestawards.org

Looking for some support?

Find a mentor by contacting your local STEM Ambassador hub: stem.org.uk/stem-ambassadors/local-stem-ambassador-hubs

Instructions for teachers

The challenge

Design and make a pizza box.

Students will:

- learn about information on pizza boxes
- carry out a strength test on pizza boxes
- design and make a strong box for a pizza

Supporting students to complete their project

Each project should involve approximately 10 hours of student work from start to finish. Ideally, the project should be led as much as possible by the students.

As a teacher or mentor your role is to:

- introduce the pizza box project and guide students through the project
- support students by providing resources to aid their understanding of the project (i.e. internet access, pizza boxes)
- act as a sounding board for students' ideas and nurture the students' work
- encourage your students to communicate how they plan to work on their project
- help students to work through their project and record their findings (this could be through writing, video recording, etc)
- encourage them to reflect on their own performance and learning

Health and safety

Students should be encouraged to work safely. Encourage the students to identify the risks involved in each practical activity or investigation.

Demonstrate safe use of tools and equipment. Students using equipment should be closely supervised.

Contact CLEAPSS directly cleapss.org.uk for any specific health and safety advice. Teachers in Scotland should refer to SSERC sserc.org.uk.

Preparing to run the project

To ensure you are ready to introduce this project to students, make sure you have the following resources:

- Bronze student workbook (for students to record their project work)
- Supporting slides
- SEND support resources (Widgit symbols vocabulary and activity sheets)
- Bronze SEND student supplemental evidence form

They can all be downloaded here, including editable versions:

crestawards.org/bronze-award-send-resources

In addition, we recommend you source materials to support students' learning that include:

- pizza boxes (shop-bought or takeaway) for strength testing
- materials to design and make pizza boxes

Running the pizza box project with your SEND students

DESIGN & MAKE PROJECT

Introduce the project

Use the PowerPoint **slides 2-4** to introduce the context for the project.

Engage students with discussion about what makes a pizza; what types of pizzas have they eaten; where pizzas first came from; and why we eat so many of them in the UK?

Slide 5: Play the video clip *Amazing Pizza Processing and Packaging factory* (0-2.30mins) showing how pizzas are made.

Ask the students what they think happens next to the pizzas.

For students who can communicate through writing and/or drawing, introduce their workbook. This can be used to help guide students through their project and to capture their learning. A project diary is included within the workbook. This can be used to help students record their project work (with drawings or writing).

The Widgit vocabulary sheets can support literacy and communication here.

Main task

Introduce the problem the students are to tackle and their main 'design and make' task with **slides 6-7** .

Slide 8: Show the video clip *Amazing Pizza Processing and Packaging factory* (4.30-6.20mins) where pizzas are packaged.

Recap the learning from the video clip. Use **slide 9** to prompt discussion about why the pizzas are packaged on a board with clingfilm and finally boxed.

Testing pizza boxes

Explain to the students that they are going to carry out some tests to find out which pizza boxes are the strongest. Ask the students why the boxes need to be strong and ask for ideas as to how they could strength test a range of pizza boxes. Prompt discussion about how pizza boxes need to be strong enough to protect the pizza during:

- transportation from the factory to the shop (when they are stacked in boxes)
- storage in shops (when they are often stacked in fridges or freezers)
- the journey home from the shop to the home

You might choose to direct your students' ideas for testing by sharing examples of how card packaging is tested by companies. You can find examples of this here: packmojo.com/blog/5-ways-to-test-the-strength-of-your-packaging/

Before beginning the testing, discuss with your students how they can make their tests fair.

In the workbooks, students should record how they will test their boxes, carry out the tests, then record their results. Where appropriate, carry out repeat tests.

Optional: To extend your students' testing and investigation skills, you could challenge students to find out which packaging materials are recyclable, and which are likely to end up in landfill.

Use the PowerPoint **slides 11 and 12** to introduce learning and discussion about recycling signs and how to encourage people to put their pizza packaging into recycling bins.

Running the pizza box project with your SEND students

DESIGN & MAKE PROJECT

Design and make a pizza box

Encourage the students to use their findings to help them select the best materials to make their boxes.

Optional: Some students may benefit from making a 'pizza template' to help them design and make a box that fits their pizza. They could cut out a circle from scrap materials such as card or cardboard.

To support the development of their design ideas, encourage them to look at existing pizza boxes and/or allow them to select some pictures from the internet.

Depending on the abilities of your students, support them to either make a template from a disassembled pizza box or make their own box.

You might also choose to discuss:

- what might make the best-shaped box for a pizza
- materials that are safe and unsafe to use in food packaging
- **Optional:** Whether materials that can be recycled locally might be better to use

Using PowerPoint **slide 12**, ask them to see if they can spot information on the boxes such as the pizza's name, weight, etc.

Depending on the abilities of your students, prompt relevant discussions such as:

- What is the best way to add design and information on the box?
- How can they add information that is clear to understand?

Encourage the students to add key information to their own designs and boxes.

Tell others

For students to secure their Bronze Awards, ideally, they need to reflect and share their learning about their project.

Use PowerPoint **slide 13** to help students to think about what they have learnt through their project work. Support students to reflect and present their work in a way that is suitable for them.

Useful resources

Free printable pizza box templates:

allfreeprintable.com/pizza-box-template

Amazing Pizza Processing and Packaging factory:

youtube.com/watch?v=5x1A3R-cF4g

5 ways to test the strength of your packaging:

packmojo.com/blog/5-ways-to-test-the-strength-of-your-packaging/

Optional: Make a pizza

If time and resources allow, assemble and/or make pizzas with your students. You could use either pre-made pizza bases or make a batch of dough.

Pizzas should be made and consumed in a food technology room. Check for allergies beforehand. Encourage students to wash their hands before and after handling foodstuffs.

For students who need additional support to follow verbal instructions, use the Widgit vocabulary sheets to support this activity.

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