CREST AWARDS

BRONZE AWARD

MAKE YOUR OWN FIZZY DRINK

10H Typically 10+ hours of project work
Recommended for 11-14 year olds

Design & make project

Investigate different soft drink recipes and design an experiment to make the perfect fizzy drink.

#food

#chemistry

#engineering

HOW TO RUN CREST USING THIS ACTIVITY

Looking for some support? Find a mentor by contacting your local STEM Ambassador hub: **www.stem.org.uk/stem-ambassadors/local-stem-ambassador-hubs**

To use their project to achieve a CREST Bronze Award your students will need to:

- **Complete a minimum of 10 hours of project work**
- **Consider the broader impact of their project and demonstrate an innovative approach**
- **Complete the project workbook or short report in another medium**
- **Reflect on their work during the project using a student profile form**

Preparation

Ready to get going with CREST? Sign up for a CREST account here: **www.crestawards.org/sign-in**

Create a new Bronze Award project with the name(s) of the student(s) 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 students to use when running a CREST Award. You can download these when you create your CREST account by following the link above.

Encourage your students 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

So, your students have been hard at work and completed their CREST project, but don't let this 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 CREST Bronze Award

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

Log in to your CREST account at **www.crestawards.org/sign-in**

Select the project and upload a sample of the students' workbooks or other project evidence.

Check the participating students have 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 – CREST Silver.

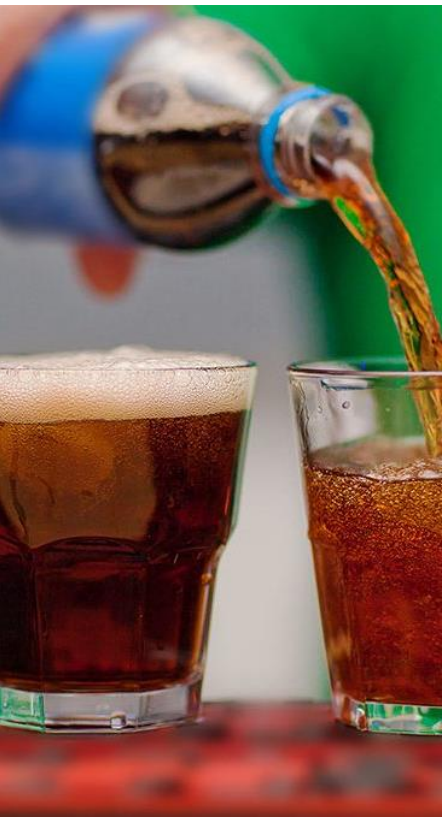
Don't keep all the fun to yourselves, encourage others to take part in CREST projects and share the wonder of science. For free ideas on how to get started, see **www.crestawards.org**

STUDENT BRIEF

BRONZE AWARD

Make your own fizzy drink

Commercial fizzy drinks are fizzy because carbon dioxide has been pumped through them. In this project you will investigate how to make your own fizzy drink using carbon dioxide. You can compare your homemade fizzy drink to fizzy drinks you can buy in the shops.



Getting Started

Check out the recipes below as examples of how you might make your own fizzy drink. Make sure you do a risk assessment and check this with your teacher.

Comparing your fizzy drink to a shop bought one: Buy a fizzy drink the same flavour as yours and compare:

What different ingredients do the two drinks have?

What do they look like? For example, is one cloudier than the other, or a different colour?

How fizzy are they? How much carbon dioxide is given off when you open each bottle?

How acidic are they? Measure the pH of the two drinks.

What are the shelf-lives of the two drinks?

What additives are there in the bought drink? Why do you think they have been put in?

The results:

How does your drink compare to the bought drink?

How could you improve your drink? Can you think of ways to make your improvements?

Write down your method for making your drink so that other people can use it.

Things to think about

People have also been able to make fizzy drinks for hundreds of years by fermenting them. This is when yeast is used to make the carbon dioxide. Think about how a fermented drink might

Find out about fermentation. What's needed for it to happen and what's produced?

We do not recommend making a fermented fizzy drink yourself, unless supervised by a teacher in a lab.

Useful Resources

Consider using one of the below recipes for your fizzy drink:

- https://littlebinsforlittlehands.com/fizzy-lemonade-science-project/
- https://www.sciencekids.co.nz/experiments/lemonade.html
- https://www.thoughtco.com/fizzy-sparkling-lemonade-made-with-science-607468

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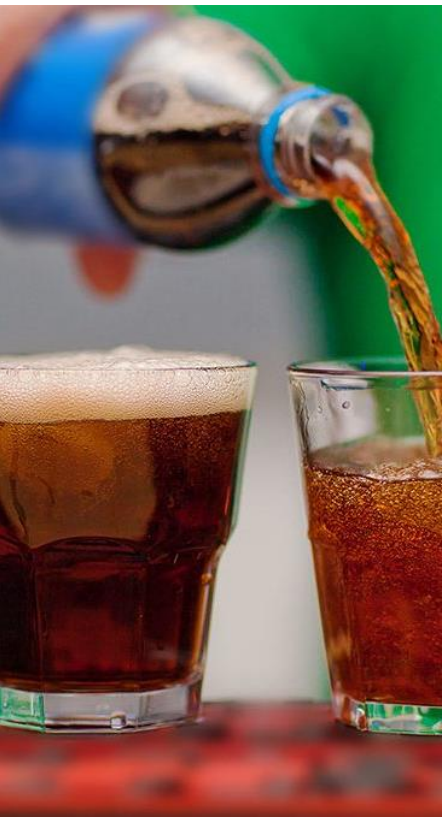

Health and Safety

A science project work is both dynamic and exciting but can also carry some risk. To avoid any accidents, make sure you stick to the following health and safety guidelines before getting started:

- find out if any of the materials, equipment or methods are hazardous;
- assess the risks (think about what could go wrong and how serious it might be);
- decide what you need to do to reduce any risks (such as wearing personal protective equipment, knowing how to deal with emergencies and so on);
- make sure your teacher agrees with your plan and risk assessment.

Remember, you should never drink anything that has been prepared in a laboratory or with laboratory equipment or chemicals.

Remember!

Science isn't just about data. The most successful projects will demonstrate good communication skills and show original ideas that address a real-world problem.

Look at the world around you and consider all the innovative ways that you could address the challenge. Even if things go wrong, use this to show what you have learned. Don't forget to use the student profile form to help structure your project.