



BRONZE AWARD

TREATMENTS FOR DEHYDRATION



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



**Practical
project**

Test different oral rehydration salts to learn more about the causes and consequences of dehydration

#biology

#health

#holidays



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

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Treatments for dehydration

In this project, you will find out about the causes and consequences of dehydration. You will devise some experiments to investigate the constituents of commercially available oral rehydration salts (ORS), a common treatment for dehydration.

Getting started

You should start by doing some research to find out about the causes and consequences of dehydration. Find out about how to treat dehydration including the use of oral re-hydration salts (ORS) and what they contain.

Find out how to test for levels of glucose and salt using Benedict's test.

Buy a number of commercially available oral re-hydration salts and carry out experiments to confirm that the ORS contains the active ingredients that the manufacturer claims.

Most re-hydration salts contain glucose and salt (sodium chloride). Devise experiments to test that your sample contains these ingredients.

You will need to present and comment on the results of your research and your tests on the ORS.

Pure water is an electrical insulator but becomes a conductor when salts (like sodium chloride) are dissolved in it. You could use a battery and an ammeter to set up a circuit to check the electrical conductivity of your samples of ORS. You could compare your measurements with the electrical conductivity of distilled / de-ionised water and with a salt solution that you have made up yourself. From this you should be able to arrive at some conclusions about the presence of salt in the ORS.

Things to think about

How will you make your test fair?

Will you test the salts as a powder or made up into a solution?

How many times will you test each type of oral hydration salt?

Useful resources

Benedict's test is a standard test for glucose - you will find the instructions in most GCSE Biology/Science text books - ask your group leader or mentor for help.

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Health and safety

A science project 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!

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.