



**BRONZE AWARD**

# WHY DO WE USE SHAMPOO?



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



**Practical  
project**

Compare shop bought shampoo to alternative liquid cleaning products.

**#home**

**#chemistry**

**#hygiene**



# 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](http://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](http://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](http://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](http://www.crestawards.org)

# STUDENT BRIEF

**BRONZE  
AWARD**

## Why do we use shampoo?

There are lots of different liquids that we use to clean things. In this project, you can do some experiments to see why we use shampoo to wash our hair. You will compare three different types of liquid cleaning product – shampoo, liquid soap and washing-up liquid (you could choose other products as well, if you like).

### Getting Started

Collect samples of human hair to use in your experiment. See notes in things to think about. You will also need three liquid cleaning products to test. These could be shampoo, liquid hand soap and washing up liquid.

Look at the hairs under a microscope. Describe, draw or photograph what you see.

What can the microscope show you that you can't see with your eye?

Does the tip look different to the root?

Can you see anything on the side of the hair?

Is there a dark line running through the middle?

Survey your friends or family about the hair cleaning products they use. Ask them if they think washed hair looks different - if they just say "yes", ask them how!

Wash your hair samples in the three different cleaning products. Dry them and look at them again under the microscope. Describe, draw or photograph what you see.

Remember, this needs to be a fair test, so you should think about controlling a number of things such as the amount of cleaner, the temperature of the water and the way they are dried.

How did the hair samples change when washed with (a) shampoo (b) liquid soap (c) washing-up liquid?

Did the hair samples feel any different?

To extend your investigation, you could measure the pH value of each cleaners and compare this to the results from your experiment.

### Things to think about

Before you get your hair samples, think about:

- How will you get the hair samples? Will they be cut hairs, or hairs that have been carefully pulled out?
- How many hairs from one person should you look at?
- How many hairs make one sample?

### Useful Resources

Try shampoos for different hair: anti-dandruff shampoo, shampoo for dry hair, shampoo for greasy hair, organic shampoo



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## BRONZE AWARD



### 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.

**Are there any hygiene issues you need to consider?**

### 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.