



About this activity



In this activity you investigate to find out which washing product is the best at removing stains from fabric. Just like scientists in industry, you should try to change only one thing with each new test to keep the results fair.

Kit List

- ☑ 3-4 different washing products (see examples)
- ☑ 3-4 samples of stained fabric (squares cut from an old tea towel or T-shirt will do)
- ☑ 3-4 containers/washed plastic packaging (e.g. large yogurt pots or plastic bowls)
- ☑ Disposable gloves (advised if you have sensitive skin)
- ☑ Warm water (from tap)
- ☑ Timer (a phone timer will do)

Tip: For staining the fabric, use foods like margarine or chocolate spread which don't stain too severely.

Time: 1 hour

Watch out!



- Check for allergies before selecting food to test.
- Use disposable or rubber gloves to handle the washing products if you have them.
- Do not rub your eyes or touch your mouth whilst handling washing products.
- Do not eat or taste washing products or food items during testing.
- Avoid splashing water on skin and ensure all spills are cleaned up immediately.
- Hot water should be dispensed carefully by an adult.

WHICH WASHING PRODUCT?

Important words to understand:

- industry
- fabric
- product
- investigate
- mixture
- fair test
- change
- observe
- measure
- control
- variable



Not sure what they mean? You could use a dictionary to check (paper or online).

The Problem

The scientists at the Eco-Wash company are developing a new washing product and are unsure which type is the best for removing stains from fabric. Can you carry out a fair test to help them with their research?

OUR METHOD

- Take the fabric squares (roughly the same size) and stain each piece making sure each stain is the same size.
- Make a note of the starting measurements.
- Mix 1 tablespoon of washing product with 100ml of warm water and place into containers. Repeat for each product being tested.
- **Optional:** Place one piece of stained fabric in a container of warm water with no washing product to use as a control.
- Leave samples to soak for chosen length of time (e.g. 5 minutes).
- Remove each fabric from its container and rub 5 times.
- Rinse each piece of fabric under cold running water.
- Take final measurements.

THE THING YOU WILL CHANGE: The type of washing product

Washing Product Examples – choose 3-4 to test



automatic powder	automatic liquid	hand-washing powder
hand-washing liquid	washing-up liquid	liquid hand soap

THINGS TO KEEP THE SAME:

Type of stain	Type of fabric	Number of rubs
Size of stain (cm/cm ²)	Temperature of water (°C)	Amount of washing product (tbsp)
Soaking time (minutes)	Amount of water (ml)	Number of rinses

THE THING YOU COULD MEASURE (choose one):

Size of stain after washing (cm/cm ²)	Time taken to get rid of stain (minutes)	Visibility of stain (Scale 0-10) 0 = no stain 10 = heavy stain
---	--	---



How you will solve the problem...?

Recording your Results



	Starting Stain Measurement	Finishing Stain Measurement	Difference	Other observations
1				
2				
3				
4				

Now you must convince the Eco-Wash scientists that you have found best product.



THEY WILL WANT TO KNOW...

- How did you carry out your tests and make them fair?
- How did you test each type of washing product?
- What are your results?
- Which washing product was the best stain remover?
- Why do you think it is the best washing product?
- Why were the other products not as good?

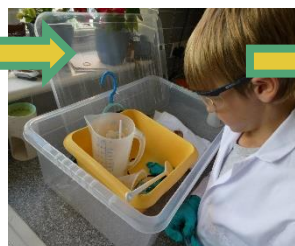
Write a short report or make a video to share your results with the Eco Wash company

Share it with us @ciecyork

Time to Investigate



1. Plan your investigation.



2. Get your equipment ready.



3. Measure out your ingredients.



6. Time to report your results!



5. Make careful observations



4. Carry out your investigation.

Lab coats are not essential for this activity – although the boys do look very dapper in them!

Follow up investigations:



- Is the washing product effective on different fabrics?
- Is the washing product effective at different temperatures?
- Is the washing product effective on different stains?
- What is the ideal length of time for soaking?
- Does rubbing the fabric have an effect on stain removal?
- Does the water to washing product ratio matter?
- What is the ideal amount of washing product?

Things to think or talk about:



- Why are some stains harder to remove than others?
- Examine the packaging of your chosen washing products and look at the list of ingredients. What mixture of ingredients have been used?
- Look at the language used on the packaging of your washing products or search on YouTube to find any TV adverts. Can you design a new advertising poster or TV advert for one of the products you tested using persuasive language?