



PRODUCT TESTING

Explores a variety of topics on the theme of product testing.
in2science.org.au

Year 8/9

Subject

Digestive System – Yr 8

Reactions – Yr 9

Covers

SU, SHE & SIS requirements of the Australian curriculum

Meet a Mentor

Rebekah is studying Food Technology at RMIT University

What are you aiming to do when you finish your course?

I've always liked the creativity of cooking and baking and find the pride I get from the finished product very rewarding. As I've learned more through my course I've become more and more interested in the role ingredients play in food and the physical and chemical changes that occur during its preparation.

When I finish uni, I'd love to work in a food technology lab doing research and product development for one of the large food companies.

What would you say to encourage younger people to follow a science-based career?

We all eat every day and we make many food choices in a day, so it's important to take an interest in what goes into our bodies. My friends laugh because I'm often talking about denatured proteins, bacterial toxins and other foody things. Science often has a reputation for being nerdy and boring – but it's just the opposite - it is so relevant to our everyday lives.

What has been the highlight of In2science?

Without doubt it's kids taking an interest in science and finding an aspect of it that they enjoy or is relevant to their interests. The best times are when you're working with a small group of students – it allows you to get to know the shy, quieter ones and to help kids who are struggling a bit to pick up the topic. It's very rewarding!



Curriculum Links

Use and influence of science

People can use scientific knowledge to evaluate whether they should accept claims, explanations or predictions (ACSHE160).

Questioning and predicting

Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge (ACSIS124 and ACSIS139).

Formulate questions or hypotheses that can be investigated scientifically (ACSIS164).

Planning and conducting

In fair tests, measure and control variables, and select equipment to collect data with accuracy appropriate to the task (ACSIS126 and ACSIS141).

Evaluating

Use scientific knowledge and findings from investigations to evaluate claims (ACSIS132 and ACSIS234).

Possible experiments

Pick a product/advert and investigate the claims made about it.

Antacids

Test how well different antacid brands neutralise stomach acids.

Detergents

Cut fabric into squares and stain. Test which detergent works best to clean.

Nappies

Add food colouring to water and pipette onto product. Measure maximum amount of water absorbed.

Iron in breakfast cereal

Mix cereal with water and extract iron with a magnet.

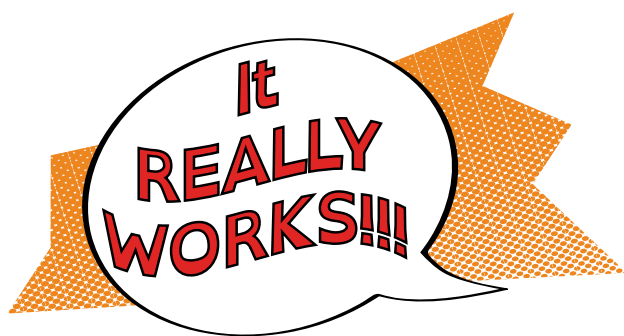
Toothpastes

Use boiled eggs soaked in coffee/ cola as tooth substitutes. Brush egg with whitening and ordinary toothpastes and compare results.

Further resources

www.latrobe.edu.au/in2science/resources

australiancurriculum.edu.au/Science/Curriculum/F-10



Lesson Idea

Aim

To investigate which antacids work best to neutralise stomach acid.

Lesson Outline

- Watch adverts for antacids; pick out key words and claims (eg: Gaviscon – [youtube.com/watch?v=Vx4t5ZFBEEo](https://www.youtube.com/watch?v=Vx4t5ZFBEEo))
- Plan an investigation to compare different antacid brands, pure calcium carbonate and bicarbonate of soda. There is scope to investigate different claims (eg: lowest amount needed to neutralise acid; fastest to neutralise if amount constant)
- Consider other factors (eg: cost, taste, branding, portability)
- Calculate cost per dose. Best value for money? *Numeracy*
- Evaluate 'best' product
- Produce own report/advert. *Critical and creative thinking*

Science Inquiry Skills

Identify variables: independent variable (brand of antacid), dependent variable (amount to neutralise, time to neutralise etc), control variables (amount of acid etc).

Scaffolding Inquiry with Questions

What do you want to know?

What do you think will happen?

Why do you think that?

How will you test your theory?

How will you make sure it is a fair test?

Curriculum Links

Reactions, Year 9

Chemical reactions, including combustion and the reactions of acids, are important in both non-living & living systems and involve energy transfer (ACSSU179)

Digestive system, Year 8

Multi-cellular organisms contain systems of organs that carry out specialised functions that enable them to survive and reproduce (ACSSU150).

Mentor Support

How your In2science mentor can assist.

Whole class

- Describe how they use SIS in their own studies
- Answer questions about science careers

Small Groups

- Question students about their hypotheses and the reasoning behind them

One-on-one

- Help individuals plan and carry out experiments.
- Emphasise how to make sure the test is fair.