

Thursday 28<sup>th</sup> January 2021

O LO: Can I carry out a fair test to explore the effects of different liquids on eggshells to learn more about how we care for our teeth?

### Science - eggshell enquiry!

Today Class 4, I would like you to carry out an experiment to explore how different liquids affect and break down eggshells over time. You have several tasks to complete today to do this:

- Read through the instructions below to set up your own eggshell experiment!
- Complete the template placed after the instructions to fill in your prediction, equipment you are using and the method you are carrying out.
- Carry out your experiment.
- Check your eggs over time (e.g. in 3 days, 5 days, 7 days,). Log your results each time you check them. What has happened to the eggshells? Have they stained/changed colour? Have they broken? Has the egg shell disintegrated completely?
- Evaluate your results, why do you feel that certain eggshells stained more so than others? What does that tell you about the liquid that you put the egg in and what it may do to our teeth? Does it mean that it would stain our teeth more over time as well? What happened to the eggshell that was covered in toothpaste and then dropped in the liquid? Did it stain more or less? Write a little paragraph for me at the end of the enquiry (so after the few days wait before you check the eggs) to explain the possible answers to these questions. If you find that your experiment has not helped you answer every question, think about what you could do next time to improve your experiment.

Instructions to set up your eggshell experiment:

You will need:

3 eggs

3 jars or glasses

3 different liquids (in this example I have chosen coffee, coca cola and vinegar, but please use whatever is available to use at home. It will be really interesting to see the difference in the information we find based on the different liquids everyone uses!).

Toothpaste (to wipe onto one of the eggshells all the way around)



1. Pour the same amount of fizzy drink, vinegar and coffee (or whatever liquids you are using) into each glass. Think about your variables here, is this a variable that we could keep the same?
2. Add a whole raw egg (still in its shell) to each glass. Choose either the egg that will go into the coffee or coca cola (not the vinegar!) to cover in a small layer of toothpaste all the way around. This is so we can monitor the effect of the toothpaste in fighting what the liquid could do to the egg!
3. Leave the eggs for approximately three days. If, after you have checked them, you don't see much change then you can put the eggs back into the liquid and check again after 5 days has passed (from the lesson today) and even 7 days if necessary.
4. Remove the eggs when you are happy that you can see a possible affect from the liquid.
5. Rinse the egg kept in vinegar and rub gently until the shell comes away.



Fill in the template on the next page with your write up about the experiment. You are welcome to write out the subheadings yourself in a notebook or on lined paper if you feel you want more space to add further detail about your experiment.

Eggshell enquiry:

My prediction:

I predict that

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Equipment:

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Variables:

My independent variable (the variable I change is): 

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My dependent variable (the variable I measure is): 

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My controlled variable (the variable I keep the same is): 

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Method (description of how I carried out the experiment):

1. 

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2. 

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3. 

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4. 

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5. 

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6. 

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Results (what I have found out):

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Evaluation (strengths of my experiment and how could I improve it?)

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