

# Science Experiment



## Question.

How do eggshells react to different liquids?

### Vocabulary

Teeth  
Liquid

Material

Enamel

Eggshell

Protection

Damage

# Experiment Time!

WALT: Plan an enquiry and record observations

Tooth enamel and an egg shell are made from similar materials and they both have similar functions so we are going to investigate the effect of different liquids on egg shells to give us an idea of what they might do to tooth enamel.

# Key Questions

- What things do you think are bad for our teeth?
- How can we look after our teeth?
- What is similar about eggshells and tooth enamel?

# Key questions before you start the experiment

- How can you find out the effect of different liquids on eggshells?
- What type of eggs will you use? Will you use raw eggs or will you hard-boil them? (Ask an adults opinion for this question).
- What liquids will you use and why?
- Can we make this experiment fair and what things should we keep the same? (What variables are there?)
- How will you know if the liquid has made a difference to the eggshell? (**How often will you observe the eggs** and what will you do to **test the shell at the end** of the experiment?)

# Planning the experiment

## Equipment needed

- 3 Eggs of similar size
- 3 cups of similar size

I have chosen these 3 liquids:

- Vinegar
- Coca-Cola
- Orange juice

For this experiment, I will also put one egg in water, as that is natural and neutral (not acidic or alkaline).

## Method (Plan)

What will you do with the eggs?

- I will put each egg in a cup and cover each one with a different liquid.

What will you observe?

- I will observe any changes to the eggshell and to the appearance of the liquid.

When and how will you observe them for changes?

- I will check them daily, every afternoon.
- I will look closely and record what I see.

# Planning and predictions.

## **Hypothesis**

What do you think will happen to each egg?

Make a prediction.

- Vinegar and coke are quite acidic, so I think that these liquids will affect the shells of the eggs most.
- I wonder if orange juice or Coca-Cola will change the colour of the shell? I think the colour may change.

## **Fair test**

What things should we keep the same and how will we make it a fair test?

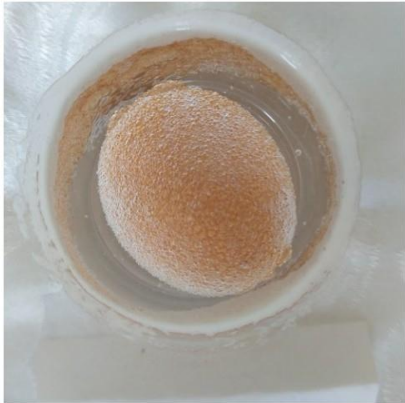
- Each egg should be totally covered with the liquid.
- They should all be put in at the same time and left in the same place (in case of the effects of sunlight etc.).
- They should be left for the same amount of time.

# Starting our experiment

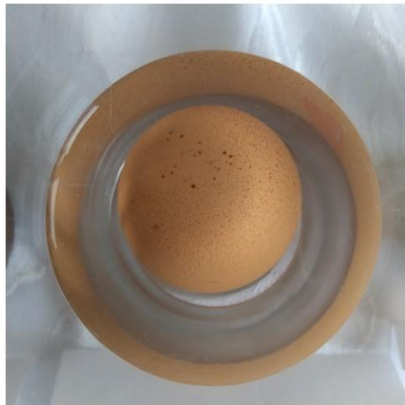
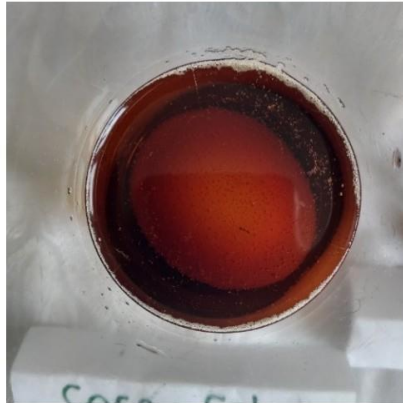


# Put each egg into a different liquid

Vinegar



Coca-Cola



Water

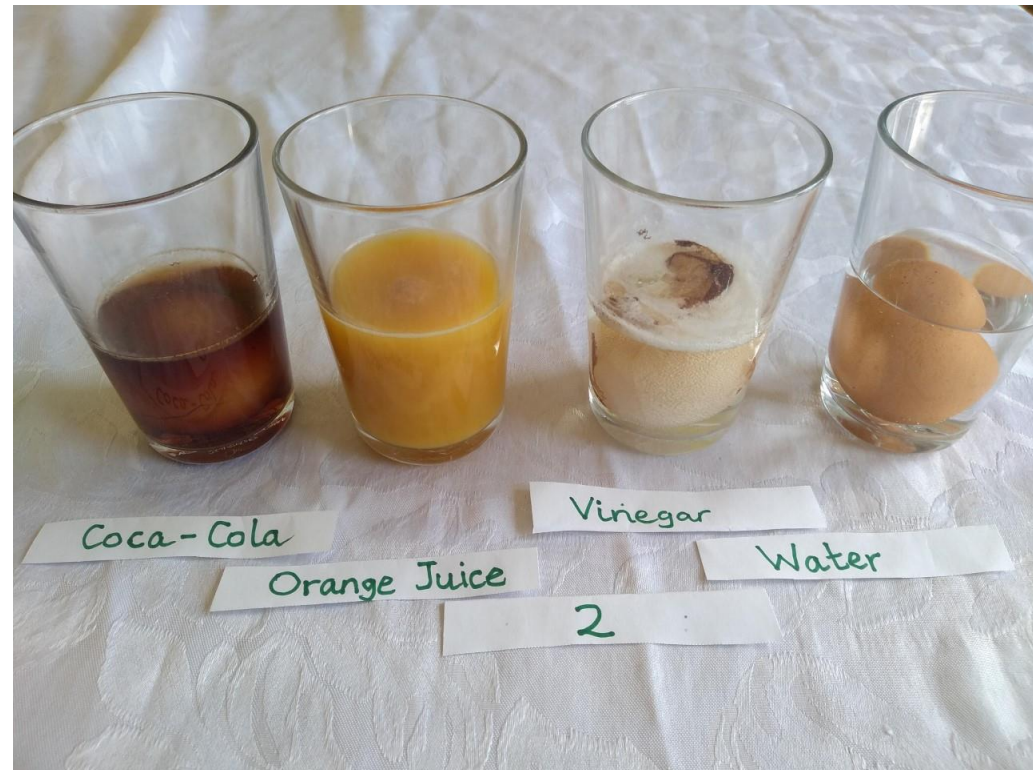
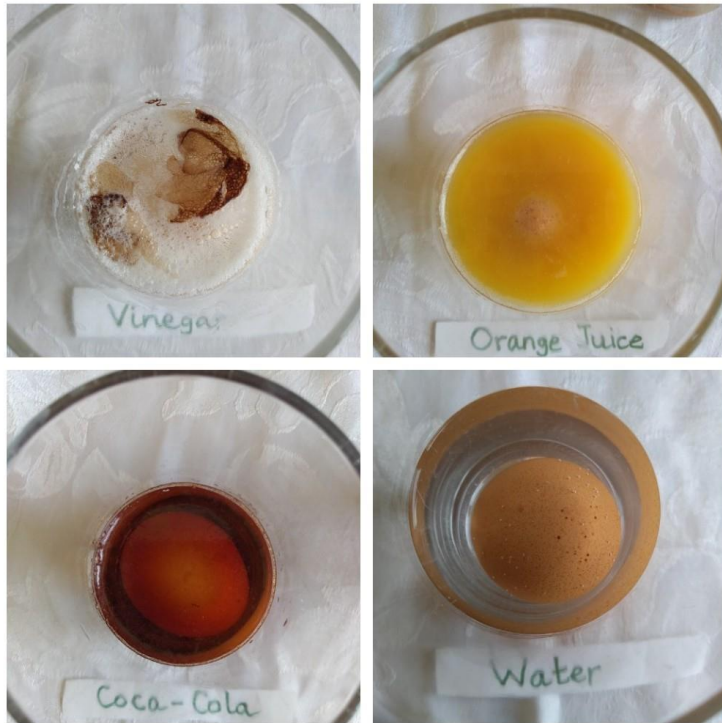


Orange Juice





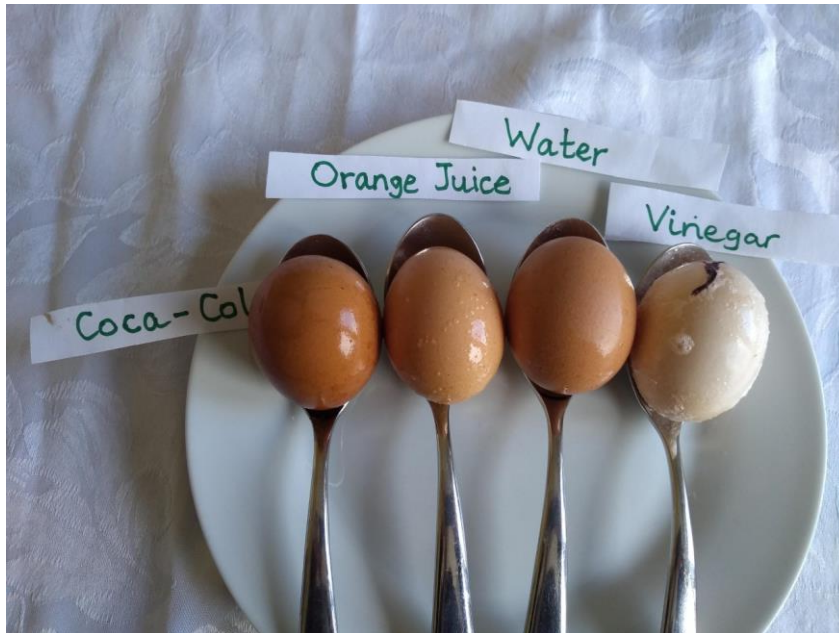
# Day 1 – after 24 hours Thursday



# Day 1



In just one day, how much have the eggs changed?



# Day 2 - after 48 hours Friday





# Day 2



The picture above shows the eggs yesterday.



This picture shows the eggs on day 2. What differences can you see, if any?

# Results

How will you collect your results?  
What will you observe and how?  
I will record the results in a table.

You should do this experiment  
and observe it for at least 3 days.  
When you feel that you have  
enough results, you can stop the  
experiment and test your eggs!

Day	Egg in Coke	Egg in Orange Juice	Egg in Vinegar	Egg in Water
Day 1 (After 24 hours)	The shell is more brown in colour.	The juice looks a little dirty. The egg is the same.	The egg has bubbles on it and has gone pale. There is brown colour in the vinegar.	No Change.
Day 2 (after 48 hours)	This egg looks more brown and the coke (liquid) looks paler! The egg has cracked but not leaked.	This egg looks similar to how it looked yesterday.	This egg feels more fragile and softer.	No change
Day 3				
Day 4				
Day 5				





Day 3 Saturday



Day 4 Sunday

Day 5 Monday

# Results

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Day 2				
Day 3				
Day 4				
Day 5				

# Analysis of results

## **Analysis**

We have found out that...

What did we find out and learn from the results?

- Use the information and evidence you collected to explain your findings.
- From your results, which liquids do you think can damage tooth enamel?

# Hypothesis and thoughts.

**Was your hypothesis right?**

Did the experiment turn out as you predicted?

**What would you change if you did this experiment again?**

**What other questions do you have?**