

Centre of the Cell's 'Teethtastic' Challenge



Keeping your teeth healthy can be a tough job. There are various things you can do to maintain your teeth and gum health. Some of these different ways include; brushing your teeth twice a day for two minutes at a time, flossing and using mouthwash.

We clean our teeth to remove acid that sticks to the enamel from the food we consume. The enamel is a hard protective layer on the outside of our teeth that is high in calcium. Calcium can be burned away by acid, and the acid from our foods can cause cavities or decays in the tooth enamel if left untreated.

This acid can come from lots of different places, these can include:

- Sweet fizzy drinks/Fruit juice
- Citric acid (Oranges and Lemons)
- Vinegar and acidic foods
- Biscuits and crisps (Bacteria breaks down sugars in food and turn them into lactic acid)

But how can we remove this acid and is it effective?

Brushing our teeth is a great way to remove that acid and bacteria. Bacteria creating lactic acid is the biggest cause of acid in the mouth.

It is recommended to use a fluoride toothpaste to ensure the best clean. Fluoride is used to protect and rebuild lost tooth enamel.



Below we have a challenge to see how effective toothpaste and fluoride are in protecting our teeth.

Is fluoride **toothpaste** helpful in protecting our teeth from acid?



What you will need:

- Egg shells (4 pieces about the same size)
- 4 Cups/Glasses
- Toothpaste*
- Acid (Vinegar/Lemon juice or Fizzy sugary drink)
- Water
- Toothbrush/paintbrush

*check active ingredients for fluoride

What to do?

Because egg shells are full of calcium like our teeth, they can be weakened and worn away by acid. We are going to coat egg shells in toothpaste and see if they can protect the shell from the acid.

1. Fill two of the glasses with water, one of these will be our control.
2. Then fill two of the glasses with your choice of acid (We recommend vinegar).
3. Using the brush, mix together toothpaste and a small amount of water to allow the toothpaste to froth up.
4. Coat two pieces of an egg shell (back and front) in the toothpaste foam and place one in the water and place the other in the acid of your choice. (We used half shells).
5. Place the two remaining pieces of egg shell without toothpaste, into the remaining two glasses.
6. Place the glasses somewhere safe and cover them.
7. Check back in 24 hours to compare the different shells and record it in the table below. The glass with the water and no toothpaste will be our control, and the one we compare the others against.



	Has the egg shell changed?	Notes and details
Water and no Toothpaste	No (Compare the others to this)	
Water and Toothpaste		
Acid and Toothpaste		
Acid and no Toothpaste		