

DIGESTION DEMONSTRATION

BONUS ACTIVITY

BEYOND the
Chartwells
KITCHEN



Context

The process of digestion is amazing! It is how all of your food is processed into energy to power your body! So let's go through the digestion experiment that you just watched but with your class! During this experiment, you will visually demonstrate how food is processed by our bodies to extract the nutrients and energy...

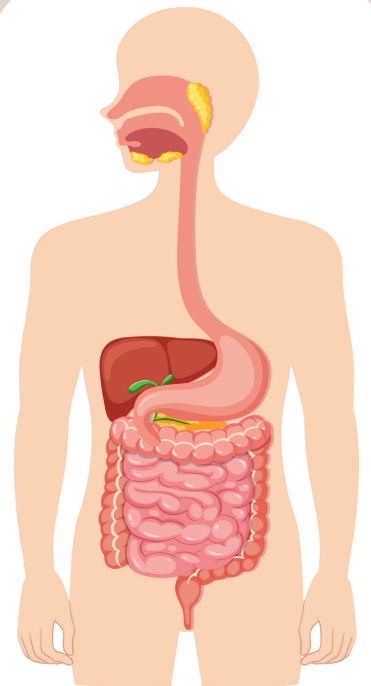
WARNING: THIS EXPERIMENT IS MESSY BUT A LOT OF FUN!

Tools and Ingredients

- Food: 2x slices of bread (preferably brown), 1x banana, 200ml orange juice, 100ml water, 3x food colouring
- 1x medium bowl, 1x pair of scissors, 1x masher, 1x piping bag, 1x pair of tights, 1x tray, 1x plate

Method

1. The Mouth: Place your bread and banana into your bowl. Start chopping up your banana and bread with your scissors to mimic the incisors and canines. Add your saliva (100ml water), an enzyme called amylase will also be in your saliva, so add some food colouring. Then start mashing your food (with your potato masher) to mimic the molars and premolars.
2. The Oesophagus (optional): The oesophagus is a long pipe that connects your mouth to your stomach. We used a long pipe to demonstrate this, but you could just describe and skip to step 3 if this is not an option for you. Our body uses peristalsis to move our food through our oesophagus, which are wave like muscle contractions.
3. The Stomach: Empty your food mixture into your piping bag. Add your 200ml orange juice to mimic the stomach acid, and more food colouring for enzymes. Make sure you are holding the top of the piping bag shut, then get squeeze and churn the food around in the stomach to make sure your orange juice is fully combined.
4. The Small Intestine: Our small intestine helps to further break down our food, and absorb the nutrients we have consumed. Your small intestine is around 500cm at 10 years old (we would recommend measuring this out with rulers!!!) Empty your mixture by cutting a whole in your piping bag (make sure you have a tray underneath), and empty it into your tights. You will need to add more food colouring here, as enzymes from the pancreas will help further digest the food. Slowly try and move your food through the small intestine using peristalsis movements.
5. The Large Intestine: The large intestine is where excess water is absorbed, so squeeze out any remaining liquid!
6. The Anus: Finally your mixture is ready to exit the digestive system, so cut a small hole in your tights to mimic the rectum, and squeeze your mixture out onto a plate!



Reflection Questions

What have you learned today?

What did you observe in the experiment?

How did this experiment make me feel?

If you could do this experiment again, what would you change?

If you could learn more about this topic, what would you like to know?

Top Tips

It would be recommended to split the pupils up in pairs or small groups to conduct the experiment.

It is important check the label/ ingredients of the food colouring before offering it to your pupils. Most blue food colourings are vegetarian, but please check if they are suitable for any religious beliefs, allergies or intolerances in your class!