

LO: recognise that DNA is made up of genes which help to determine characteristics of living things.



Has anyone ever told you that you have features from your mother, father or an aunt, uncle, a grandmother or grandfather?

Do you have a sibling that you look like or are you completely different?

Think of one feature that you share with a parent or sibling.



In order to study DNA,
scientists have to extract
it from cells.



How can we extract strawberry
DNA?

DNA Investigation



Make sure you have an adult to help you.

- First make sure you have watched the video clip that shows you how to carry out the DNA investigation you are about to do.
- Now follow the instructions to undertake the investigation.



Aim: An Investigation to extract DNA from strawberries.

You Will Need:

Strawberries

Transparent sealable plastic bag (freezer bag)

100ml of water

Washing up liquid

Salt

Filter paper (from a coffee machine)

Funnel

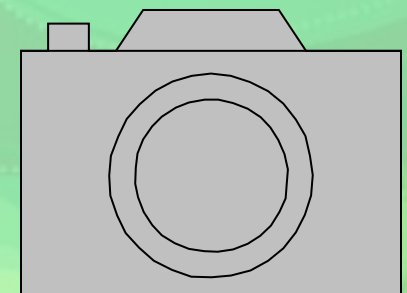
Jug

Methylated spirit

2 transparent beakers



Take a photograph of your experiment as evidence and if you can, post it on the school blog,



1. Put the strawberries (without their stems) into the plastic bag and squeeze out all the extra air before sealing tightly.

2. Mash the strawberries with your hands for about 2 minutes until they are mushy.

3. Mix in the 100ml of water, a pinch of salt and a squirt of detergent into the bag containing the squashed strawberries. This is your extraction liquid.



4. Squeeze out the air and seal the bag again.



5. Mash the strawberry mixture in the bag with your hands for another minute.

6. Place the filter paper or sieve inside the funnel and set the funnel on top of the jug (so that it will empty into the jug).



7. Pour the strawberry mixture from the bag into the funnel. Let it drop through the Filter paper or sieve until there is no liquid left in the bag.

8. Put the funnel, filter paper or sieve and the strawberry pulp to the side.

9. Pour the liquid strawberry juice into a small transparent container.



The next two steps are very important!



10. Carefully pour the surgical spirit into a tea spoon and gently pour it on top of the strawberry juice. The spirit will form a layer on top of the juice.

Do not let the alcohol mix with the strawberry juice!



11. Let the contents sit for a few minutes. You should see stringy, whitish stuff collecting between the two layers of liquid. This is DNA! You can gently pull the DNA out with the skewer if you want.



Discussing results: What did you find?



What have you learnt?

Why did you mash the strawberries?

Why did you add a salt water solution into the mixture?

What challenges did you experience during this investigation?



Discussing results: What did you find?



The detergent releases the DNA into the solution. The surgical spirit causes the DNA to come out of the solution.

DNA

- DNA acts like a recipe holding the instructions telling all living things how to develop and function.
- Your DNA is a long strand and Genes are a section of that strand.

