



Teachers Resource sheet
Episode 10



Curriculum Strand - Environmental awareness
Strand Unit – Science and the environment

Aims and Objectives:

To introduce the class to forensic science and help them apply the principles of forensic science to a hypothetical crime. Use the scientific process to solve a fictional crime.

Class plan

Suggestions:

- ✓ Ask warm up questions with the class
- ✓ Watch the video
- ✓ Fill out the first two questions of the investigator's sheet (see resources below)
- ✓ Do experiments in class
- ✓ Complete the investigator's sheet

Resources contained in this print out:

- ✓ Some warm up question suggestions
- ✓ Class plan suggestions
- ✓ Experiments to do in class (resources and instructions are included)
- ✓ The Science Investigators Forensics episode can be accessed here:
<https://scienceinvestigators.wordpress.com/about/episodes-and-resource-sheets/>
- ✓ An investigator's sheet for pupils to discuss and fill out for each experiment

**Curriculum Question Suggestions with answers. Explaining:
Forensic Science**

Question 1

What is forensic science or forensics as it is often called?

Answer

Forensics describes the use of scientific tests and techniques to help solve crimes. Forensics draw on what we have learnt in many different fields of science, including biology, chemistry, engineering, genetics, and medicine.

Question 2

What is DNA?

Answer

DNA stands for deoxyribonucleic acid. Every living thing has its own DNA. It is an essential molecule for life. It acts like a recipe holding the instructions telling each living thing how to develop and function. A person's DNA holds the code for every cell in their body, and every person's DNA is different. So your DNA is like a special recipe book just for you. We can extract DNA from anything.

Question 3

How might a criminal's DNA be found at a crime scene?

Answer

We can extract DNA from many things often found at a crime scene. We can find DNA on a piece of hair or in blood left at a crime scene. We can take the DNA from these things and match it up to a criminal or a suspect.

EXPERIMENTS

Forensics can get messy so you will need...

- ✓ Protective clothing (art bibs work well)

To clean up:

- ✓ Kitchen towel & rubber gloves & cleaning agent

Experiment: Extracting DNA

For this experiment you will need:

- ✓ Washing-up liquid
- ✓ A small beaker
- ✓ A test tube
- ✓ A Ziplock plastic bag
- ✓ A sieve
- ✓ A tweezers
- ✓ Some fruit
- ✓ Top Tip: Strawberries, kiwis, banana's work best.
- ✓ Salt.
- ✓ Rubbing alcohol (you can buy this in the chemist, adult supervision is needed)
- ✓ Water
- ✓ A spoon

Directions

1. Pour some water into the beaker
2. Add washing-up liquid
3. Add some salt and mix them all together
4. Put your fruit into the bag and squash it (being careful no to burst the bag)
5. Pour the mixture from the beaker into the bag
6. Pour this liquid back into the beaker through a sieve
7. Use a spoon to squash any lumps through the sieve
8. Pour this mixture from the beaker into the test tube
9. With the help of an adult, add rubbing alcohol
10. Watch what happens

Well done, you have extracted DNA from the fruit!

INVESTIGATORS SHEET

What are we going to do?

What do you think will happen?

What actually happened?

Why do you think this happened?
