CSI: Playing the role of a Detective

I am sure you have heard that detectives use fingerprints to solve crimes. Did you know that fingerprints are one of the best and easiest ways to identify a person! Why not try out the following activity with your family at home!

Interesting facts:

- Fingers have slightly raised lines that form patterns, and every finger has its own unique pattern
- Natural oils from the skin are left behind when a person touches something, leaving a fingerprint pattern. Forensic (detective) scientists study fingerprint patterns to match them to a particular person
- There are three basic types of fingerprint patterns. The three basic patterns are called Plain Arch, Ulnar Loop, and Plain Whorl.

<table>
<thead>
<tr>
<th>Plain Arch</th>
<th>Ulnar Loop</th>
<th>Plain Whorl</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Plain Arch fingerprint" /></td>
<td><img src="image2.png" alt="Ulnar Loop fingerprint" /></td>
<td><img src="image3.png" alt="Plain Whorl fingerprint" /></td>
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</tbody>
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In this activity, you’ll find a new way to enlarge your prints at home. You will also learn how to gather prints like a real detective!!
# Activity: Gathering, lifting and analysing fingerprints

## Equipment:

<table>
<thead>
<tr>
<th>Balloon</th>
<th>Marker</th>
<th>Baking Powder</th>
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<tbody>
<tr>
<td><img src="image1.png" alt="Balloon Image" /></td>
<td><img src="image2.png" alt="Marker Image" /></td>
<td><img src="image3.png" alt="Baking Powder Image" /></td>
</tr>
<tr>
<td>Sieve and Glass Plate</td>
<td>Sticky Tape</td>
<td>Coloured Paper</td>
</tr>
<tr>
<td><img src="image4.png" alt="Sieve and Glass Plate Image" /></td>
<td><img src="image5.png" alt="Sticky Tape Image" /></td>
<td><img src="image6.png" alt="Coloured Paper Image" /></td>
</tr>
</tbody>
</table>

## Method:

**Part I: Ballooning Prints**

1. Choose a finger. Gently colour your finger using the marker
2. Press your inked finger straight down onto the balloon. Tip: Don’t slide it around or the print will smear!

3. Wait a few minutes for the first print to dry. Then repeat steps 1 and 2 with a different finger and make another print on a clean part of the balloon.

4. Blow up the balloon slightly so the prints get larger. Tip: If they look blurry, let out some air until they are clearer.

5. Compare your prints to the patterns in the photo on page 1. Do you have a loop, arch or whorl at the centre of your finger print? Are both prints the same? Compare your family member’s finger prints to yours!
Extended Activity: Part II: Lifting (Gathering) Fingerprints

6. Place your finger tip firmly on the plate

7. Using the sieve, slowly dust a thin layer of baking powder over the surface containing your prints

8. Tilt the plate and gently tap it to remove extra powder.

   Tip: You can also blow gently on the plate until you see only a faint powder pattern where the finger prints were!

9. Carefully place a piece of sticky tape straight down over the prints and press it down
10. Lift the tape off and stick it to a piece of coloured paper. Could you identify these prints as yours? What type of finger print did you discover? Compare your finger print with your other family members.