Figuring Out Fingerprints (Dusting for Fingerprints)

Sections

Joey Scouts | Cub Scouts | **Scouts** | **Venturer Scouts** | **Rover Scouts**

Scouts VICTORIA

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Challenge Areas

COMMUNITY | CREATIVE | OUTDOOR | PERSONAL GROWTH

Scout Method Elements

COMMUNITY INVOLVEMENT | LEARNING BY DOING | NATURE AND THE OUTDOORS | PROMISE AND LAW | PERSONAL PROGRESSION | PATROL SYSTEM

SYMBOLIC FRAMEWORK | YOUTH LEADING, ADULTS SUPPORTING

SPICES Growth Areas

CHARACTER | EMOTIONAL | **INTELLECTUAL** | PHYSICAL | SOCIAL | SPIRITUAL

The Adventure

Take a dive into the world of forensic science and learn about fingerprint analysis and dust for fingerprints using common household objects.

Plan

1. Investigate fingerprint analysis, what it is and what are some of the underlying principles. Why can they be used to assist investigation of crimes? There is lots of information available on fingerprinting but this is a good starting point.
2. Investigate types of fingerprints by looking at the features of a fingerprint supplementary and how they can be collected.
3. Investigate methods of collecting reference (known) fingerprints and fingerprint rolling.
4. Investigate why latent fingerprints (fingerprints which are invisible to the naked eye) are left on surfaces and if/how the surface affects the fingerprint.
5. Investigate fingerprint dusting and methods used by the police force and investigators.
6. Read the safety information and discuss with your leaders or another appropriate adult what safety equipment, precautions, and supervision may be required. Ensure that you have these safety measures in place before starting the 'Do' section.
7. Gather all the equipment that you need for your fingerprint analysis experience. You will need the following equipment: surfaces for placing fingerprints on, a soft loose brush such as a blush make up brush, fine loose powder such powdered foundation or icing sugar, a cloth, and gloves (ideally nitrile).

Do

1. Select a surface that you will place a fingerprint on. If you have pre-selected the type of powder you are using, the surface should be one that has good colour contrast with the powder. For instance, if you are using icing sugar, you do not also want to use a white or light-coloured surface.
2. Clean the surface that you will be dusting thoroughly with a cloth to remove an excess fingerprint. This will help you develop a clear fingerprint for analysis. A glasses lens cleaning cloth works well, especially on glass surfaces such as windows or drinking glasses.
3. Gently place a fingerprint on the surface. You want to make sure that you are not pressing too hard as this can obscure the print. The more oils on your finger, the better the print will be so it can be good to run your finger along your forehead prior to placing the print.
4. Put on a pair of gloves to avoid placing unintentional and excess prints on the surface.
5. Inspect where you placed the fingerprint and note your observations. Can you see the print?
6. Ensure that your powder is in an easy to access container. If using powdered foundation then, in many cases, the existing packaging should be fine. However, if you are using cocoa powder, icing sugar, or a similar powder, it is wise to place a thin layer of the powder in a bowl or on a plate.
7. Gently collect some of the selected powder on your soft brush. If the powder was not pre-selected, try to select a powder that contrasts well with the surface the fingerprint is on.
8. Tap off any excess powder from the brush.
9. Gently sweep the brush over where the fingerprint was placed. The powder should stick to the ridges of the fingerprints where oils have been secreted. Don't press too hard or you might brush away the fingerprint.
10. Repeat until you can fully see the fingerprint.
11. Inspect the fingerprint and identify characteristics and features of the fingerprint.

Review

1. Were you able to successfully develop the fingerprint through a dusting method?
2. What could you do that you think would improve the visualisation of the fingerprint? Do you think using more or less powder would help?
3. What did you enjoy most about dusting for fingerprints? What did you learn?
4. Do you think the surface that the fingerprint is deposited onto will affect the result? Why or why not?

Safety

- When inhaled, powder may cause respiratory irritation and trouble breathing. Take care not to inhale powders.
- Depending on the powder used, allergens may be present. Check individual allergies before starting.
- Whilst some powders used, such as icing sugar and cocoa powder, are edible some, such as foundation, are not. Do not consume any powders used in this activity.

Variations

- This challenge card can pair well with other forensic science-based challenge cards such as other challenge cards in the 'Figuring Out Fingerprints' series, Who Wrote It? Paper Chromatography, and Soil pH Testing, to create a forensics program or a 'Whodunit' night.

- If running as a ‘Whodunit’ night, you may wish to create some sets of reference fingerprints – see Figuring Out Fingerprints (Rolling fingerprints) – to compare to the dusted print.

- Investigate the impact of different powders and surfaces by changing one variable at a time. You can also investigate other variables such as the addition of moisturiser to hands before placing the print.
- Depending on the section, you can increase the difficulty of this activity by looking at different amounts of fingerprint characteristics.
- Depending on the section and challenge area used, this challenge card can also be paired with a police station visit or some other law enforcement related community involvement.
- You can lift the prints you have dusted using tape and paper as per Figuring Out Fingerprints (Lifting Fingerprints).