# ForensiKit

# **Fingerprint Fuming**

# Who is The Prankster?

#### **Materials needed:**

- Disposable plastic flatware, bowls or plates (Tip: Prints will be easier to see on non-white surfaces)
- Assorted snacks (nuts, wrapped candies, dried fruit, etc.)
- Newspaper or disposable covering for your work surface

#### The scenario:

You and your group are planning a snack for later. A prankster messes with your snacks. Who was it?

Alternative – Your group is planning a crafting project. Use craft supplies (beads, buttons, rhinestones, etc.) in place of snack foods.

- 1. Prepare your workspace.
  - Work outside if possible. Cyanoacrylate fumes are messy.
  - No matter where you work, spread out some newspaper or other disposable covering to protect the work surface.
- Set the table with the appropriate number of place settings for your group, and have each group member place snack food(s) in their bowl or plate.
- 3. Draw straws or use a similar method to anonymously select The Prankster.

- 4. Have everyone in the group go their separate ways for an agreed-upon time like 30 minutes.
- 5. During that time, The Prankster should return and modify each person's snack.
  - Possible modifications: Empty a plate or bowl, combine snacks, replace one snack with a different one, etc.
- 7. When the group reconvenes, it should be clear that the snacks have changed. Can you identify whodunit?
- 8. Wearing gloves, empty out the bowls and/or plates and take them and the flatware to your outdoor work area.
- 9. Use the Fuming for Prints procedure to use cyanoacrylate fumes to develop the fingerprints on your evidence.
  - If your evidence is light in color, the developed prints may be hard to see. Follow the Applying Fingerprint Powder procedure to make them more visible.
- 10. Use your cell phone camera to take photos of the developed prints for closer examination.
- 11. Congratulations! You've collected your evidence. Now, you need to get comparison prints to identify The Prankster.
  - Visit https://forensikit.com/fingerprint-fuming/ to find out how

### **Procedure**

#### **Fuming for Prints**

- 1. Gather all materials in a well-ventilated work area.
- 2. Protect the work surface with newspaper.
- 3. Follow the instructions on the Peel & Fume packaging.
  - When the prints turn white and are visible to the naked eye, the process is likely complete.
  - To test, gently wipe the edge of a print. If it doesn't smudge, it's ready.

#### **Applying Fingerprint Powder**

- 1. Before opening the vial, give it a gentle shake. Use the powder in the lid to load the bristle tips of the brush.
  - · Make sure the vial is tightly closed before shaking.
  - Using too much powder is the most common mistake, so exercise restraint. DO NOT dip the brush into the vial.
- 2. To reveal the latent print, gently spin the brush in your hand and use the lightest of pressure to apply the powder.
  - Brush in the direction of any ridges that begin to appear.
  - Stop brushing when you can see the ridges of the latent print.

## **Did You Know?**

Cyanoacrylate is the active ingredient found in very strong, fastacting adhesives commonly labeled "Super Glue" or "Krazy Glue."

Cyanoacrylate vapors are attracted to sweat and skin oils. The vapors combine with fingerprint residue and moisture in the air to form a crystallized white polymer known as polycyanoacrylate.

This process is commonly referred to as Super Glue fuming or CA fuming.

The process was discovered in 1977 by Japanese hair and fiber expert Fuseo Matsumura.

- » Matsumura applied cyanoacrylate glue as an adhesive on microscope slides he used to examine trace evidence.
- » When latent prints "magically" appeared on those slides, Matsumura theorized a possible correlation to the cyanoacrylate.
- » Matsumura presented his findings to a colleague, Masato Soba, who eventually developed the concept of cyanoacrylate fuming.

CA fuming is used to process nonporous and semi-porous pieces of evidence. It does not work on porous items like cloth or paper.

