

THE WRITE STUFF

PROBLEM:

A local convenience store was robbed by a masked gunman. He did not speak but handed the clerk a note that said "Give ME all yuor Money!!!" There were no witnesses and the clerk cannot remember any identifying features about the gunman. The investigators have requested the lab examine the note for any identifying information.

ACTIVITY:

PRE-CLASS PREPARATION:

Layer one sheet of paper on top of another. Bearing down very hard, write the following (in printed letters):

**Jimmy—
Call Mom (856-348-1971)**

Remove the top sheet of paper. On the second sheet write:

Give ME all yuor Money!!!

This will have to be repeated enough times so that each student or group of students will have a note to analyze. Slight variations can be introduced between the notes, both in the written demand and the personal information.

IN THE CLASSROOM:

Each student or group of students should have their own "note" and a flashlight. Instruct the students to use the flashlight to see if they can uncover any identifying information from the note.

If the flashlight is held at an oblique angle (close to and nearly parallel to the paper), the indented writing (with the name and phone number) will be clearly visible.

TEACHER NOTES:

Analysis of indented writing has proven useful in a number of criminal cases. It has been used to discover personal information (as seen here), to match documents found at a crime scene to paper at a suspect's home or place of work, to permit handwriting analysis of larger samples, etc.

Oblique lighting allows us to see the small indentations in the surface of the paper because they produce shadows with greater contrast than the indentations themselves. The small angle of the light results in longer shadows that are easier to see and photograph. A questioned documents lab is often equipped with microscopes with digital cameras and pre-positioned oblique lighting sources to aid in conducting these types of exercises.

Another method of detecting indented writing is to use an Electrostatic Detection Apparatus (EDSA), which gives the paper a slight charge of static electricity. The page is placed under a thin cellophane film, charged, then lightly dusted with black toner powder. Since the electrical charge will be higher in the indented areas, the toner sticks better to these areas, making the writing legible.

MATERIALS:

- Bank robbery note with indented writing revealing personal information (one per student)
- Flashlight (one per student)

CLASSROOM MANAGEMENT:

This activity can be performed either by individual students or in small groups.

Given the simplicity in setting up this exercise, students may be interested in devising their own

scenarios and notes. This could easily be turned into a reciprocal activity where students create their own documents (criminal or otherwise) with indented writings, then exchange with a classmate so that each may decipher the others.

Students may also want to experiment with this technique to determine how and when it is most effective. For example, how far down in a stack of papers can a note written on the top one be read? Does this technique work better on certain types of papers than on others? Can some other method be used to read the indented writing (e.g. using silly putty to create a mold of the impression, which works well with cardboard).