

# NEATH PORT TALBOT COLLEGE COLEG CASTELL NEDD PORT TALBOT

## School of Maths & Science Science Practical

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### Impression Evidence – Shoe marks

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#### ◆ Aim

*At the end of this experiment you should be able to:*

1. Cast an impression of a shoe mark found at a crime scene.
2. Compare and contrast the shoe mark to footwear from known suspects.
3. Evaluate the value of the evidence in a court.

#### ◆ Introduction

Shoe prints found at the crime scene can help to indicate the point of entry, point of exit and direction of travel.

The shoe size may provide information about the person's height or gender.

The depth of the shoe print can provide information about the person's weight or whether they are carrying a heavy item.

Tread pattern may reveal information about the persons job, interests or economic status.

Observations about print spacing and angle of multiple shoe prints can reveal information about the persons gait or height.

#### ◆ Safety

##### Control Measures

- The wearing of safety **glasses** and a **laboratory coat at all times** will be sufficient to take account of most hazards and significant risks
- All waste is to be placed in the labeled container immediately after use
- You are reminded of the need of good laboratory practice in order to maintain a safe working environment.

##### Hazards

**Harmful! Irritant**

Dentstone casting material



## ◆ Procedure

### Casting a Shoe Print

1. Make a shoe impression in a sand box, ensuring plenty of detail is visible.
2. Protect the impression using hairspray.
3. Mix the plaster to the consistency of pouring custard and pour carefully into the impression.
4. Leave the cast to harden for at least 45 min.
5. Clean the selected shoe of any soil.
6. Use the inkless printing system to make a print of the shoe, as if taken at a police station.
7. Once the cast has hardened sufficiently, remove it from the sand and brush gently, taking care not to break the cast or destroy the print detail.
8. Compare the cast with the ink print and identify at least 3 features that show the prints come from the same shoe.

A cast taken in this way can be used as a form of comparison to printed impressions taken from suspect shoes at a police station.

While the impression is hardening, make imprints of any suspect shoes for comparison or elimination purposes.

1. Open the 'BIG FOOT' printer and uncover the 'ink' pad on the Right hand side.
2. Place a clean sheet of reactive paper onto the sponge layer on the left hand side.
3. Place the suspect/elimination shoe onto the ink pad, pressing down firmly to ensure that the ink covered the whole of the underside of the shoe.
4. Press the inked shoe firmly down onto the treated paper and lift away cleanly to ensure that no smudging occurs.
5. Leave to react and develop for a few seconds
6. Record all details on the reverse of the print and use as a comparison to the impression made earlier.

## ◆ Conclusions

Write a report and draw conclusions as to the origin of the impression print recording all details and marks which match.