

Who rode through the crime scene?

Tip: This activity works best with multiple people

Materials needed:

- Bicycle, wheelbarrow, garden cart, personal shopping cart, and/or other wheeled conveyance(s)
- Ruler or tape measure

The scenario:

A possible perpetrator has rolled through your crime scene in a wheeled conveyance of some kind.

You and your group must identify which wheeled conveyance it was.

1. Prepare your workspace.

- Work outside if at all possible. Inking can get messy.
- Find or create a spot of bare earth, the softer the better, where a tire track can be made.

2. Choose a member of your group to secretly pick one of the wheeled conveyances and make tire tracks in the selected location while the rest of you are elsewhere.

3. Take photos of the tire track(s). Include a ruler or tape measure in the photos for scale.

4. Collect the wheeled conveyances that plausibly could have left the track(s) found at the crime scene.

5. Working together, follow the procedures for preparing the ink and printing a tire, create tire prints for each of the possibilities.

- Label each print with which wheeled conveyance it came from, which tire it is, and any relevant measurements.

7. Compare the known tire prints to the track left at the crime scene.

- Examine the widths of the track and the tire prints. Can you rule out any possibilities for being too wide or too narrow?
- Analyze the tread patterns. Can you spot any similarities?
- For an extra challenge, work on your assessments independently. Compare your findings when you're finished.

8. Identify the wheeled conveyance you believe made the track at the crime scene.

- Confirm your finding with the group member who made the tire track.

Procedure

Preparing the ink

1. Place a drop of ink on the inking surface.
2. Use the roller to spread the ink across the surface.
3. Repeat one at a time until the surface is fully covered.
 - For tire prints, use four quarter-sized drops.
 - For palm/foot prints, use two pea-sized drops.

Printing a tire

1. Press the foam applicator on the inked surface several times.
 - The applicator is fully inked when the inking surface is mostly dry.
 - To ensure the applicator is evenly inked, don't wipe it across the inked surface. Press it into the ink.
2. Wipe the applicator across the tire tread to apply the ink.
3. Place the paper in front of the tire and roll the inked tread across the paper.

Printing a palm or foot

1. Press—don't wipe—the palm or foot on the inked surface.
 - Do not use the foam applicator.
2. Place a sheet of paper on a smooth surface.
3. Keeping the hand or foot relaxed, press it onto the paper.

Did You Know?

When documenting tire track evidence, an investigator should record the track width, tread width, wheelbase, turning diameter, and rolling circumference.

The rolling circumference of a passenger car or light truck tire is typically 6–8 feet.

Tread patterns are defined by a tire's individual tread elements known as tread blocks, the space allocated for each tread block known as pitch length, the arrangement of pitch lengths around the tire known as pitch sequence and other characteristics.

Tread patterns generally fall into one of three categories.

- » Non-Directional Symmetrical Tread Design – Created to rotate in either direction without losing performance, the tread will look the same no matter which way you look at it.
- » Directional Tread Design – Devised to provide best traction and handling in a specific direction, information printed on the tire will indicate the intended rotation direction.
- » Asymmetrical Tread Design – Made to be quieter and improve handling, this tread pattern is not the same on opposite sides and performs equally well rotating in either direction.

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