

# Tire Tracks Challenge

## Teacher Information

### Materials Needed:

8-12 toy cars (Hot Wheels or Matchbox size work best, look for distinct types of tires or use some tools to create your own wear patterns on them)  
Large white construction paper  
Copies of Tire Tracks worksheet  
Ink pads

**NOTE from T. Trimpe:** I use the micropore ink pads available from Quill – Item # 901-21281. The ink pad is made from a harder material than the standard foam pads and holds up well to repeated use for this lab.

### Preparation:

1 – Label the cars with letters. As you create the original tracks in the next step, make a key for your records showing which numbers on the Tire Tracks worksheet correspond to the letters on the cars.

2 - Roll the tires of each car on the ink pad and then roll across the Tire Tracks worksheet. Be sure to label the cars to help you keep track of each set. If there is not enough space on the worksheet, make the tracks on another piece of paper and cut/paste a good sample the best tracks into the boxes.

**NOTE from T. Trimpe:** A sample of my Tire Track Challenge is available on page 3 of this document.

3 - Make copies of the Tire Tracks Challenge worksheet (one per group.)

### Activity Directions:

#### **Day 1:**

1 - Give each group a large sheet of construction paper along with rulers & paper towels.

**NOTE from T. Trimpe:** A PowerPoint to introduce the activity and challenge is available on the Forensic Science page of my website in the Impression Evidence section.

2 - Give one car to each group and an ink pad. Allow time for each group to make a set of tracks on a plain white sheet of paper. Have the groups pass around the cars so each group has a sample for each car. Save the sample tracks for the challenge activity during the next class period.

**NOTE from T. Trimpe:** I set up 6 sets of cars (3 cars in each set) that can be passed around the room from group to group. You might also consider setting up stations around your room. Place a few cars and one ink pad at each station. Have the groups rotate through the stations to create their own tracks.

#### **Day 2:**

1 - Pass out copies of the Tire Tracks Challenge page and allow time for the students to identify the tracks and then check their answers.

**NOTE from T. Trimpe:** I have several identification labs that are races – the first group done receives a prize and bragging rights. I require the groups to have an answer for each item before they can check their answers the first time. I mark the ones that are incorrect and the students keep working until they get them all correct (or until at least half of the groups are finished.) To make it more challenging, provide more than 8 cars. The students will need to create tracks from all of the cars, but only some of them will be matches.

2 - Discuss how tire tracks can be used to solve crimes.

**Extension Idea from T. Trimpe:** Thanks to Chris Taylor, my favorite mechanic, I have a set of 10 actual tire treads that I have the students use to make ink prints. They use black tempera paint (thinned with a little water) and sponge brushes to coat the tread and make prints on pieces of white paper. I hang several "Mystery Tracks" in my room that I made before class and see if the kids can match them to the real treads.

# Tire Track Challenge



Group Members: \_\_\_\_\_

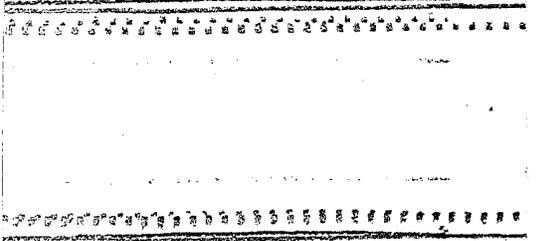
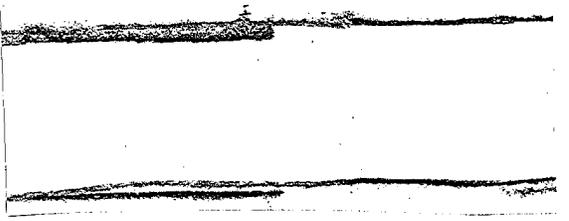
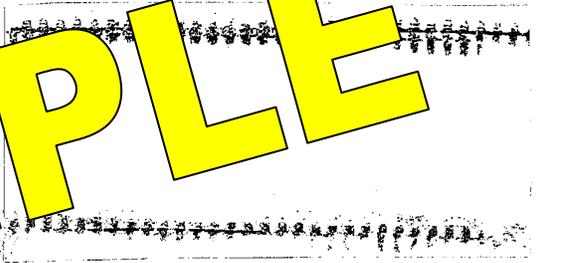
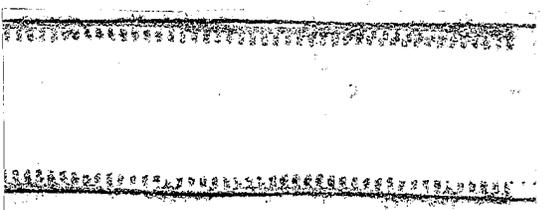
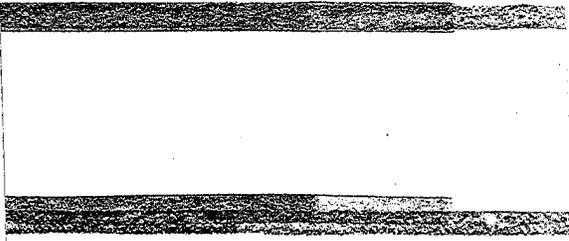
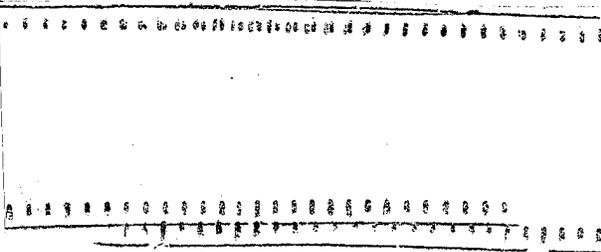
Work with your investigative team to identify each set of tracks shown below. Use the cars provided, ink pads, and white paper to make a set of sample tracks. Compare your tracks with the ones shown below and then write the letters in each box to show the matches.

#1 <input data-bbox="110 583 188 684" type="checkbox"/>	#2 <input data-bbox="1463 554 1544 655" type="checkbox"/>
#3 <input data-bbox="110 947 188 1047" type="checkbox"/>	#4 <input data-bbox="1463 917 1544 1018" type="checkbox"/>
#5 <input data-bbox="110 1310 188 1411" type="checkbox"/>	#6 <input data-bbox="1463 1281 1544 1381" type="checkbox"/>
#7 <input data-bbox="110 1673 188 1774" type="checkbox"/>	#8 <input data-bbox="1463 1644 1544 1745" type="checkbox"/>

# Tire Track Challenge

Group Members: \_\_\_\_\_

Work with your investigative team to identify each set of tracks shown below. Use the cars provided, ink pads, and white paper to make a set of sample tracks. Compare your tracks with the ones shown below and then write the letters in each box to show the matches.

<input type="checkbox"/>	#1 	<input type="checkbox"/>	#2 
<input type="checkbox"/>	#3 	<input type="checkbox"/>	#4 
<input type="checkbox"/>	#5 	<input type="checkbox"/>	#6 
<input type="checkbox"/>	#7 	<input type="checkbox"/>	#8 

**SAMPLE**