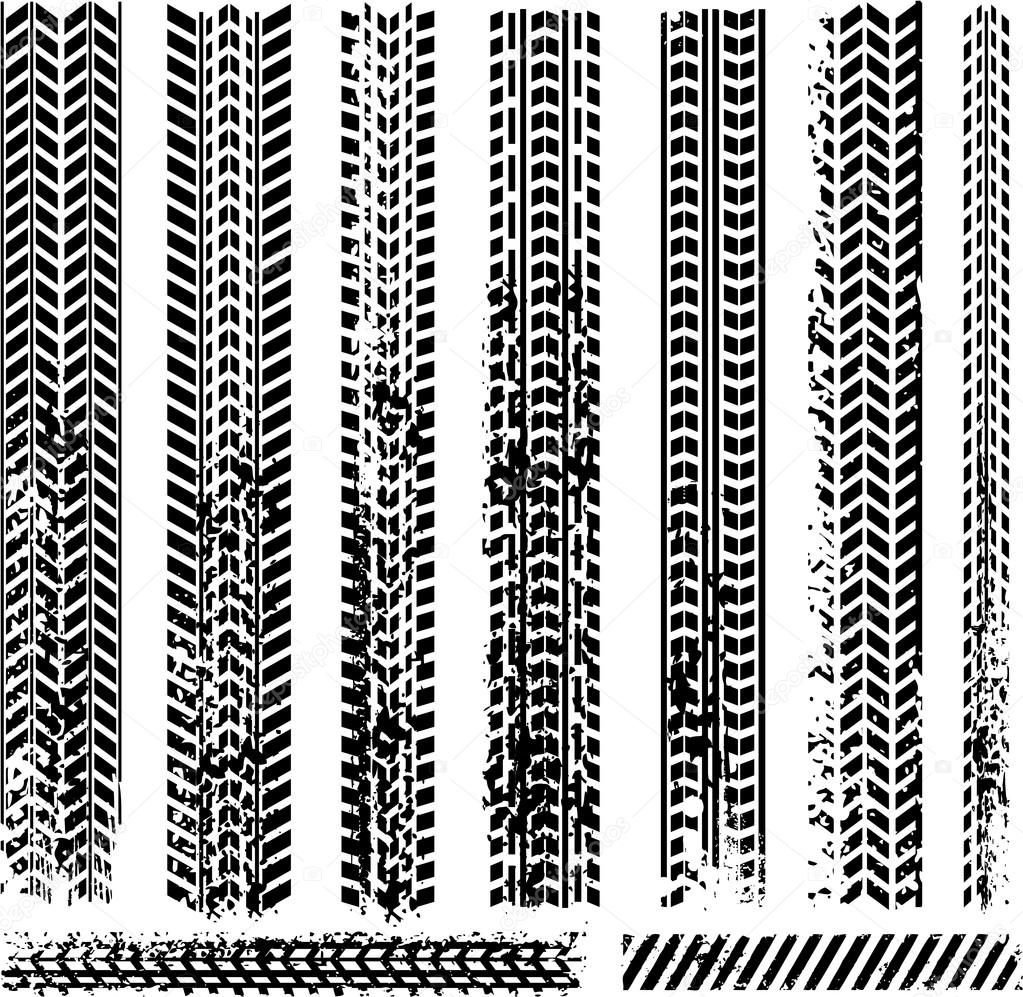
Unit 7: Impression Evidence:

Tire Treads

By the end of this section of the unit, you will be able to:

* Describe the features of tire impressions and skid marks used to help identify tire(s) or a vehicle’s wheelbase, track width, and/or turning diameter.
* Compare and contrast skid marks, including how they are produced, when they are produced, what they look like, and how they can be used to reconstruct events leading to a collision.
* Analyze impression evidence to determine if it is consistent with evidence from a crime scene.

Unit Vocabulary

* Tire tread: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Ribs: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Grooves: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Patent print: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Plastic print: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Axle: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Track width: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Wheelbase length: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Turning diameter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Skid marks: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Yaw marks: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Tire scrub: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

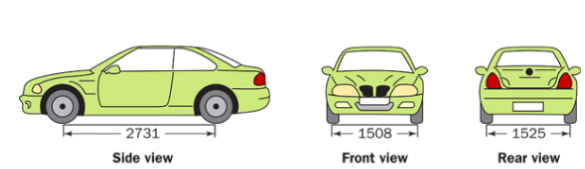
**Tire Treads and Impressions**

* Tire treads
  + ridges and grooves channel \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Made of Ribs and Grooves
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_ – the “ridges”
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – the “valleys”
* Can be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Tread patterns can indicate the type of vehicle that left the mark
* Link a suspect or victim to a crime scene
* Reveal events that took place at the scene

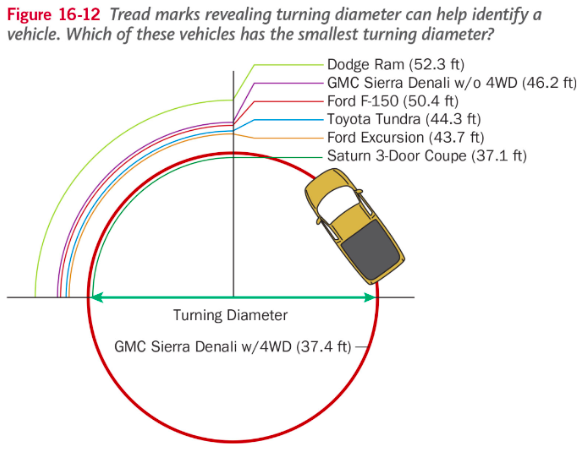


**Recording Tread Impressions**

* Count ridges and grooves across the tire width
* Note unique characteristics—wear or pebbles embedded in the grooves
* Create a print of the suspect’s tire impressions through one revolution
* Compare impressions from the crime scene and suspect’s tire

**Identifying a Vehicle**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + From center of tire to center of tire
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + From center of front axle to center of rear axle
* Turning diameter
  + The space needed to turn the car in a complete circle



**Real-Life Vehicle Measurements**



**Types of Treads**

* ­­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – most common design
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – better traction in wet and wintery weather but wears unevenly
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – moves water and slush away efficiently if put on correctly



**Need New Tires? Ask Abe**

* The Penny Test
  + In the United States, tire tread depth is measured in \_\_\_\_\_\_\_\_ of an inch
  + New tires typically come with \_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_ tread depths
    - Some truck, SUV and winter tires may have deeper tread depths than other models
  + The U.S. Department of Transportation recommends replacing tires when they reach \_\_\_\_\_\_\_\_\_\_\_ and many states legally require tires to be replaced at this depth.

**Tired Tires**

* Just like shoes, the wear patterns can tell you a lot about the tire

