

## Objective

By the end of this lesson, you will be able to understand the basic principles of physics related to cars and their motion.

## Materials and Prep

- Toy cars or pictures of different types of cars
- Paper and pencil
- Open space for hands-on activities

No prior knowledge is required for this lesson.

## Activities

### 1. Car Types Exploration

Start by showing different toy cars or pictures of cars to the student. Discuss the various types of cars such as sports cars, sedans, SUVs, etc. Ask the student to identify the differences in shape, size, and design between these car types.

### 2. Car Motion Experiment

Take one of the toy cars and ask the student to push it gently on a smooth surface. Observe how the car moves and discuss the concept of motion. Encourage the student to think about what factors might affect how far the car travels.

Next, ask the student to push the car with different amounts of force and observe the changes in its motion. Discuss how force affects the speed and distance traveled by the car.

### 3. Friction Exploration

Ask the student to place the toy car on different surfaces such as carpet, tile, and a wooden table. Observe how the car moves on each surface and discuss the concept of friction. Encourage the student to think about which surface provides more or less friction.

Have the student experiment with adding weight to the car (using small objects like paperclips) and observe how it affects the car's ability to move on different surfaces. Discuss how weight and friction are related.

## Third Grade Talking Points

- "Physics is the branch of science that deals with how things move and interact with each other."
- "Cars come in different shapes and sizes, and each type has its own purpose."
- "When we push a car, we apply a force that makes it move."
- "The harder we push, the faster the car moves."
- "Friction is a force that resists motion and can make it harder for the car to move."
- "Different surfaces have different amounts of friction, which affects how the car moves."
- "Adding weight to a car can increase the friction and make it harder to move."