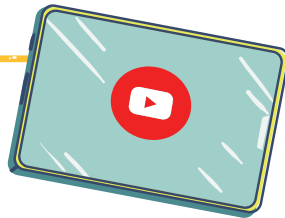


THE REALITY OF THE NEED FOR SPEED



Students will calculate the impact speed can have during crashes.

The need for speed is something you hear about in games, movies, and pop culture. There's this desire to acquire speed, especially when it comes to fast cars and driving. Yet, the impact speed can have on crashes, cars, and ultimately, people, can be surprising. Even just moving an extra 10 or 20 miles per hour can make a big difference in a crash. In this lesson, students will calculate the impact of speed and gain a better understanding of why it matters.



Instructions for the Lesson:

1. TALK ABOUT SPEED.

Before watching the YouTube video, have a conversation with students about speed. How do they think of speed? How much of a difference do they think it makes when it comes to a crash? What are some different driving scenarios where speed might come into play? For instance, high speed on the highway and high speed near a crosswalk or school zone are different speeds, but they both can have a major impact.

2. SHOW STUDENTS THE YOUTUBE VIDEO.

Have the YouTube video "Calculating a Car Crash" by Numberphile ready to show. Play the video and have students watch it all the way through at least once. Then go back into the video at the stopping point where he's making the calculation about kinetic energy. Write his equation on the board.

3. HAVE STUDENTS CALCULATE.

Divide students up into pairs or small groups. Then give them or have them come up with at least two different scenarios to calculate around speed. A good goal is to have both a car collision scenario and also a pedestrian collision. Have them calculate the kinetic energy for each scenario.

4. SHARE AND LEARN.

Have students share the different results and scenarios that they calculated. Have an open discussion with all students about what they learned and how it might have changed the way they feel about the need for speed.

Time Required:

15-20 minutes

Materials

- YouTube video
- Paper
- Calculator

Prep:

Watch the YouTube educational video "Calculating a Car Crash" by Numberphile. Understand how he calculates kinetic energy so you can demonstrate it for students.

Objective:

Students will understand kinetic energy and how this has a big impact on speed, especially when traveling at high speeds.

Elevate Your Lesson:

Here are some ideas for ways to expand this lesson:

1. Have students write out mini stories with scenarios to understand how they relate to real life. (Example: You're late to work, you're not paying attention on the way to the store, etc.)
2. Calculate kinetic energy for larger vehicles like semis to better understand how they can impact smaller cars in a crash.

Here's another great resource for learning about the impact of speed:

www.t-driver.com/know-the-risks/high-school/speeding/