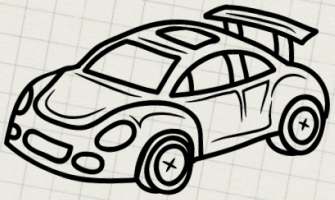
ALGEBRA WITH PULL BACK CARS

ACTIVITY GUIDE



Knowledgehook

Materials Required:

- Pull Back Car (one that when drawn backwards along the ground winds up and moves forward on its own when released)
- Measuring tape or ruler
- Stopwatch or timer
- Marker or tape to mark distances

Steps:

1. Introduction:

Explain that the activity is about understanding how distance is related to speed and time. Briefly discuss the formula: speed = distance/time

2. Speed Demonstration:

Set up a clear starting point and use the measuring tape to mark different distances (for example, 1 foot, 2 feet, 3 feet, etc.) on the floor or table.

Pull the toy car back a certain amount (let's say halfway, make sure to mark where you start the pullback so you can replicate it), and let it go. Using the stopwatch, time how long it takes to reach each of the marked distances and record the times.

3. Forming the Equation:

With the recorded times and distances, explain that we can express the relationship as an equation. Using the following formula, speed = distance/time you can calculate the average speed. For instance, if the car took 2 seconds to travel 2 feet, the average speed would be 1 foot/second.

4. Experimentation:

Now, ask the students to try pulling the car back different amounts (changing the speed) and measuring how long it takes to reach one of the marked distances.

Each student can form their own equation using their calculated speed from the experiment.

5. Calculating Distance:

Ask the students to predict how far the car would travel in a certain amount of time at their calculated speed. They can use the distance formula distance = speed * time for this.

6. Testing Predictions:

Finally, have students test their predictions by pulling the car back to the same position as before, timing it for the duration they used in their predictions, and seeing if the car stops near their predicted distance.

This hands-on activity not only makes the learning experience engaging but also helps the students better understand the relationship between distance, speed, and time in a real-world context.