

BUILD A ROLLER COASTER LAUNCH!

SUPPLIES

– MATCHBOX CARS

- Avoid cars with a rounded backside and find cars that have a flat/straight edge so that magnets may be easily attached.

– MAGNETS

– 12 INCH RULER

- Measure the distance of how far the car goes.

– PAINT STICKS OR TEXT BOOKS

- Serves as the track to help guide the ride vehicle (matchbox car).

– SCOTCH TAPE

PURPOSE

Determine what materials are needed to make a ride vehicle travel and test how far it can travel with those materials. Harness the magnetic energy to create the right amount of propulsion needed to move the vehicle on the track at the ideal distance.

VIDEO

Go to the Disney Parks Blog to learn more about the science and technology that is behind *Disney Hollywood Studios Rock 'n' Rollercoaster* starring Aerosmith!

INSTRUCTIONS

1. ADD PROPULSION SYSTEM TO THE RIDE VEHICLE (MATCHBOX CAR)

- Use a piece of scotch tape to attach a magnet to the back of the ride vehicle (matchbox car)
- Make sure you do not tape the wheels.
- Once the magnet is attached, use another magnet to test which side the vehicle magnet attracts and attach the second magnet to a paint stick or ruler that will be used to propel the vehicle (matchbox car).

2. SET UP TRACKS USING EITHER TWO TEXT BOOKS/NOTEBOOKS OR PAINT STICKS.

- Use the matchbox car to measure the width between either the 2 (two) text books or 2 (two) paint sticks.
- Place the text books or paint sticks at the edge of the table/desk.
 - If using paint sticks, use scotch tape to adhere the paint sticks to the edge of the table/desk.

3. SET UP RULER TO MEASURE DISTANCE OF TRAVEL (SEE PHOTO)

- Place the ride vehicle (matchbox car) in-between the “tracks” (text books/paint sticks) at the edge of the table/desk so that magnet on the back of the vehicle is at the edge.
- Place the 12 inch ruler at the on one of the tracks with the first notch at the very front of the ride vehicle (matchbox car). This will allow for accurate measurement of the distance of travel.

4. CONDUCT THE EXPERIMENT

- When the track is set, the car is set, and the ruler is set, it is time to start testing the distance of travel.
- Set a goal for the distance, for example, somewhere between 6 inches and 10 inches.
- Have one participant hold the ride vehicle (matchbox car) while another participant places the paint stick with the magnet attached behind the ride vehicle (matchbox car).
- Participant holding the ride vehicle (matchbox car) takes their hand off the car to “launch” the ride vehicle (matchbox car).
- Use the ruler to measure the distance traveled.

