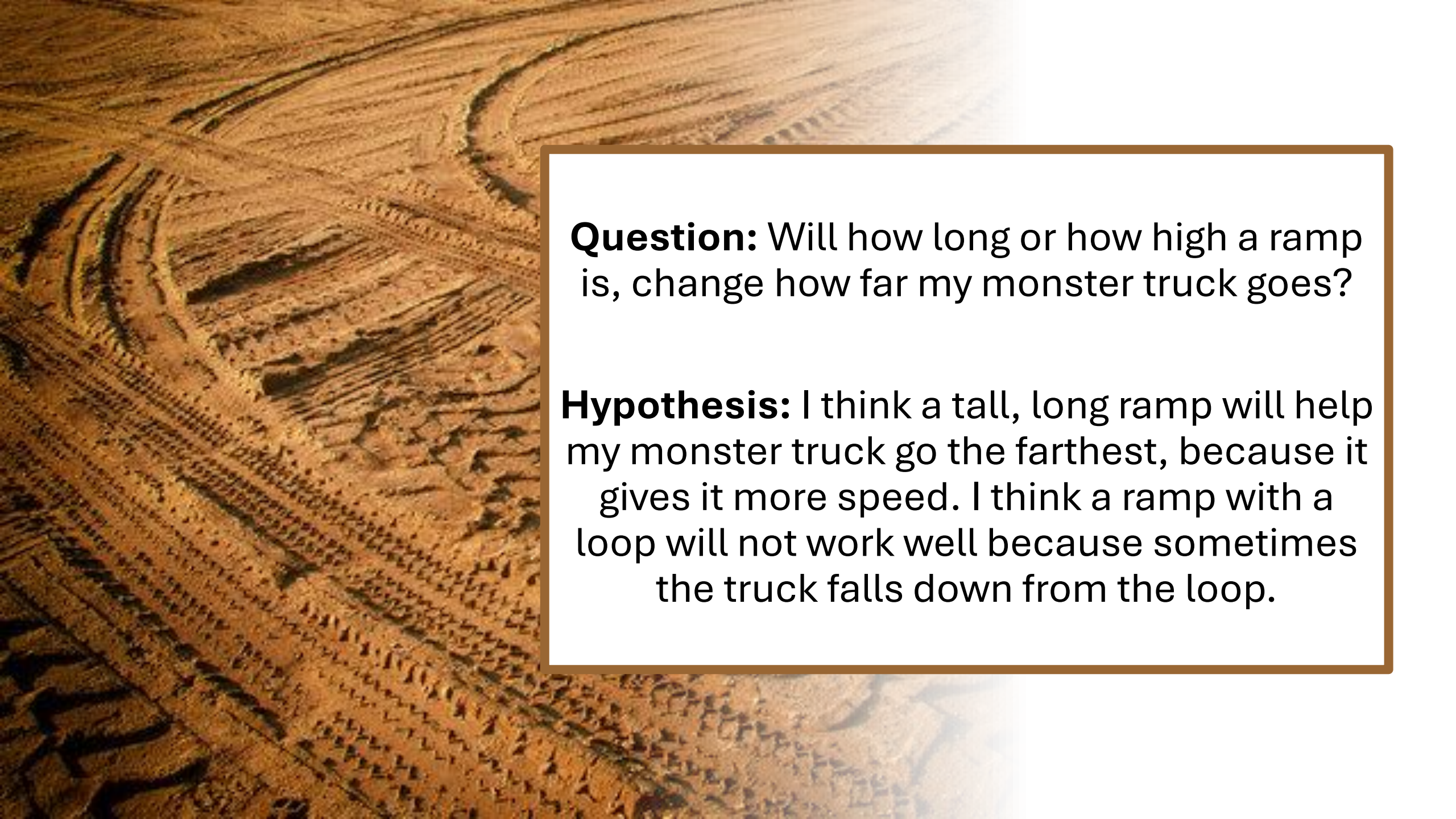
Monster Truck Launch Test!

How Far Can My Truck Go?

Introduction

I chose this science fair project because I love monster trucks – I am always building racetracks and launching my trucks as far as they can go. I want to find out how to make my trucks go as far as possible. This project is important because it helps me learn how ramps work and how gravity and speed make things move.



Question: Will how long or how high a ramp is, change how far my monster truck goes?

Hypothesis: I think a tall, long ramp will help my monster truck go the farthest, because it gives it more speed. I think a ramp with a loop will not work well because sometimes the truck falls down from the loop.

Materials

- Track
- Monster truck
- Tape
- Measuring tape
- Box
- Pen

Procedures

Using my track, I created 5 different ramps at different lengths and heights.

One at a time, I tested my monster truck on each ramp.

#1: Short length and high height

#2: Long and high height

#3: Short length and short height

#4: Long length and short height

#5: Ramp with a loop

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	Ramp	Inches
#1	short/high	192"
#2	long/high	~205"
#3	short/short	92"
#4	long/short	243"
#5	loop	fell off ramp

Results

Ramp Style	How Far Did the Truck Go?
#1: Short length and high height	192 inches
#2: Long and high height	205 inches
#3: Short length and short height	92 inches
#4: Long length and short height	243 inches
#5: Ramp with a loop	Fell off the ramp

Conclusion

The ramp that was long and not very tall made my truck go the farthest (243 inches). I think this is because it went slower and stayed steady. The tall ramps made the trucks go really fast, but they tipped over and didn't go as far.

I learned about:

- **Gravity:** Pulls the truck down the ramp
- **Speed:** How fast the truck moves
- **Velocity:** How fast AND in what direction the truck is going
- **Angle of the Ramp:** How steep or flat the ramp is
- **Friction:** How the truck slows down when it touches the ramp or the floor or a loop in the ramp
- **Distance:** How far the truck travels from the start of the ramp

Real World Applications

“In the real world, Monster Truck drivers can use my science project to learn how to build the best ramp to make their trucks go far so that their Monster Truck shows are more fun for everyone who goes.”