

PINBALL MACHINE

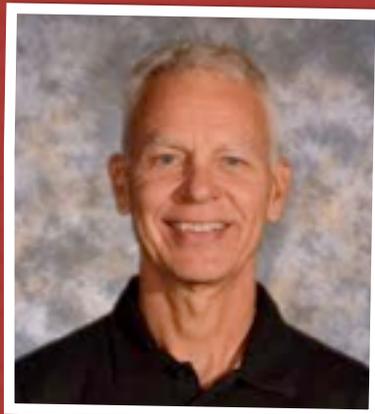


HOW SCIENTIFIC IS A PINBALL MACHINE?

WRITTEN AND CREATED BY:



CHUCK COMMERET



STEVE BOUMAN



NOLAN MANNES

Table of Contents

Chapter	Author	Page
Marbles on a ramp	Myla Meygaard	3
Making a Bulb Light Up	Elise Dannenberg	4
Magnetism	Nolan Mannes	5
Newton's 1st Law	Elise Dannenberg	6
Newton's 2nd Law	Myla Meygaard	7
Newton's 3rd Law	Nolan Mannes	8
Glossary	ALL	9

Magnetism

Where's the science?

Magnets are something that attracts something else, and if you held something metal close to the magnet, the metal thing will attract to the magnet (**magnetic attraction**). An **electromagnet** can attract many things like a paper clip, this is how we made it: we had a nail and wrapped it with wires then connected paper clips to it.

We put circular magnets on a pole and then they would start to kind-of float, they would float because if you put north to north they would repel and start to float on the pole, if it was a north to south they would attract they would be called the **north pole** and the **south pole**. (**magnetic pole**) If there is a magnetic bar, on one end would be labeled south, one would be labeled north, if u put a north side to another north side they will repel, if you put a north side next to a south side it will attract.

That is called a **magnetic field**.

Did You Know!?

Did you know that if you put a magnet on your hand and then another magnet on the other side of you hand, the magnets will try to connect to each other, and they would stay on your hand.



Life Connection Story...

One day my small dog Bear, was chewing on the charger cord, it survived, it didn't get hurt, we were glad that it was fine. We were concerned that he would get hurt.

Vocabulary

Speed is how fast or how slow you go.

Force is a push or a pull.

Acceleration is when the speed changes.

Gravity helps you to stay on the ground.

Weight is something that is heavy or light.

Friction can stop a ball from rolling down.

Newton's 3rd Law

Where's the science?

inertia is lazy, but it wants to keep on moving. **Force** can pull stuff, but if there wasn't any force it wouldn't go any where. If you were rolling a marble down a ramp, sometimes it changes speed, that is called **acceleration**. **Mass** can be different sizes and different shapes. **Motion** is a movement in many different speeds. **Action** is when something is moving and **active**, but **reaction** is not always active. If I got poked, my **reaction** would be OUCH! If I was in the car and I got in a crash that would be a lot of **action**.

Did You Know???

Did you know that motion is even in different shapes?

When we run, your legs go up and my feet are sort-of in the air, and that is a different shape than standing.



Picture with label and arrows
Use PicMonkey

Life Connection Story...

One time I jumped into the pool and made a small splash, then my dad jumped in and he made a huge splash. My dad is heavier than me so that is like **mass**.

Vocabulary

Speed is how fast or how slow something goes

Force is a push or a pull

Acceleration is when it changes speed

Weight is how heavy something is

Friction can stop something from going somewhere.

Gravity helps you from floating