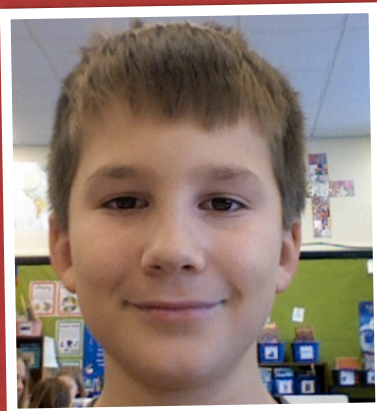


PINBALL MACHINE

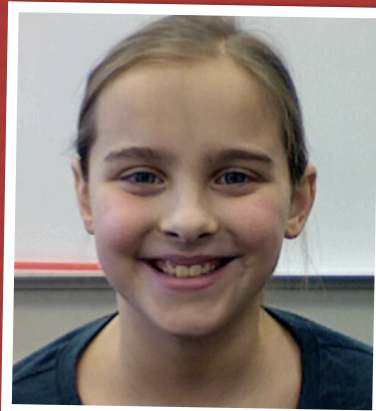


HOW SCIENTIFIC IS A PINBALL MACHINE?

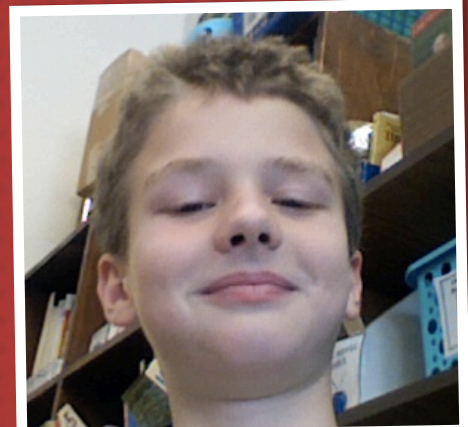
WRITTEN AND CREATED BY:



LUKE HULSMAN



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marbles on a ramp

This experiment is called marbles on a ramp, and that is exactly what it is! We started by making a small ramp and placing a marble at the top and as it rolled and we timed it. Then we wrote it down we noticed that the steeper the ramp was the faster the marble went down. This was happen because the **gravity** took over, gravity used **force** to pull it to the earth. As it is pulled to the earth the marble goes faster, this is called **acceleration**. But **friction** slows it down, what we think is fast could go faster if friction did not exist, if it did not the **speed** would increase faster. The more weight the marble the slower it would go this is because of friction and gravity, gravity pulls it to the earth and friction takes over.

Did You Know???

Did you know Gravity is more powerful closer to the earth.



Life Connection Story... Once a upon a time I had bundled up and was heading outside, hoping to build a fort in the deep snow drifts near my grandparents house. When I opened the door I was blasted with a icy wind. As I headed up the hill to the snow drift that appealed to me, suddenly I was knocked down the hill and fell backwards on to the sled and the gravity acted and a slid down the hill then if going backwards wasn't good, I fell off the sled and my back met the snow and I slowly stopped, but with a bucket full of snow in my back! " cold! cold! cold!" I was chattering my teeth as I headed back in.

Vocabulary

Speed - when you go fast
Force a strength or energy as an attribute of physical action or movement.

Acceleration when you are going one speed and then a faster speed.

Gravity A force that pulls you to the earth

Weight it is a pull of gravity on a object.

Friction is the rubbing o is f a surface, it can produce heat.

making a bulb light up

Where's the science?

I learned a lot about making a light bulb light up, I learned that you can use metal things to complete a circuit and the reason it is science is that you can learn how to use a switch and you can use loads. A load is something that can have electricity in it to make it move like a sound box and a light bulb and a fan etc. It is REALLY fun learning about ELECTRICITY I also learned how to make a complete circuit all you need to do is put batteries in a battery holder then connect the alligator clips to the battery holder then connect the other side of the clippers to the bulb stand then the bulb will light up and you can do the same thing with loads and you can make the loads make noise and you can do lots of other stuff



Did You Know???

The light bulb was invented by Thomas Edison



once I was trying to make a complete circuit until I accidentally got the alligator clippers stuck on my finger it hurt a lot, but I didn't get shocked, I felt like yelling out "OUCH"

Vocabulary

Electric Current is a flow of electricity
Open circuit means that the circuit is not on.

Closed circuit means the circuit is off.

Load a load is a sound box and a fan etc.

Switch a switch is something that turns something on.

Conductor is something that lets electricity go through.

magnetism

The science is in the **FORCE** that will pull the metal up on the **MAGNET**. And if there are not enough coils the clips will fall down with **GRAVITY** forcing the #Item down.

Did You Know???

DID YOU KNOW THE MAGNETS CAN FLOAT ON CONTACT? IF THEY ARE ON A POLE OF THE OPPOSITE POLE THEN THEM THAT IS.



Life Connection Story...

I SAW THE MAGNET FLOAT I SAID "HOW DOES THAT WORK." AND AT FIRST I HAD NO CLUE HOW IT WAS HAPPENING, BUT THEN MY TEACHER TOLD ME HOW IT WORKS AND IT WAS VERY COOL

Magnetic attraction= For information about objects and devices that produce a magnetic field, see a magnet. For fields that magnets and currents produce, see magnetic field.

Magnetic field= A **magnetic field** is the magnetic influence of electric currents and magnetic materials. The magnetic field at any given point is specified by both a *direction* and a *magnitude* (or strength); as such it is a vector field.

Magnetic pole= One of the two ends of a magnet

Electromagnet= An **electromagnet** is a type of magnet in which the magnetic field is produced by an electric current. It can be used to pick up other metal objects

1st law of motion

The first law is inertia. Inertia is when an object wants to stay at rest, and a object in motion wants to stay in motion. And they will inertia force is acted upon it. That force could be: air, an obstacle, or a another force, these will slow it down and stop it may have a reaction

Did You Know!?

Theres always a equal reaction for every action.



Life Connection Story... One day me and my dad were going on a drive when the light suddenly turned red, as my dad pushed the brake and I was leaning forward, inertia, and my seatbelt jammed and the breath was knocked out of me. "Ow," I said in my head. "you o.k?" my dad said "Yeah," and we were back to driving.

Vocabulary

Inertia means that if something is moving it wants to keep moving but it always gets stopped.

Force means you are pushing something.

Mass is the weight of something.

Acceleration means you are going fast.

Action & Reaction means for every action there has to be a reaction.

Motion means something is moving.

2nd law of motion

Where's the science?

There is a LOT of science in this. It means that more force makes you go fast and more mass makes you go fast. more mass=more force needed to accelerate an object and the second law of motion is Force = Mass x acceleration and I learned that More mass requires more force to continue acceleration at the same speed

Did You Know!?

That the short way to say the second law is $F=MA$



Life Connection Story... once when I went sledding I went really fast the whole time because I weigh a lot and I ended up crashing a lot I ended up with a face full of snow

Vocabulary

inertia means that if something is moving until it is slowed down or hit.

Force is put on lots of objects.

Mass is how you weigh someone

Acceleration means you are going fast.

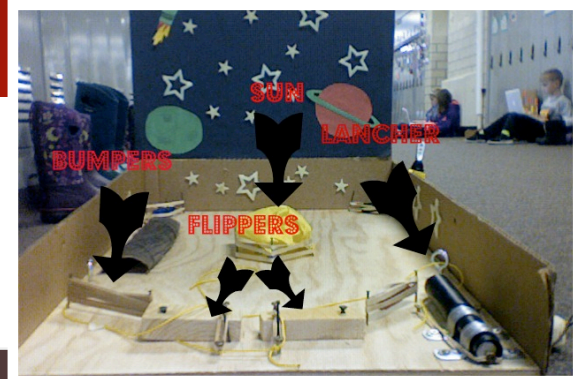
Action & Reaction means if there is an action there has to be a reaction.

Motion means something is moving.

Newton's 3rd law of motion.

Where's the science?

The science is in the force that when the ball hits wall and bounces back, This is because of the the 3rd newton's law, action and reaction. When someone threw the ball, the action, and the ball hit the wall the ball bounced back, the reaction.



Did You Know???

Did you know That if you are in space you can throw a ball and it go on forever

Inertia: **inertia** is the resistance of any physical object to change in its state of motion, including changes to its speed and direction.

Force: In physics, a **force** is any interaction which tends to change the motion of an object.

Mass: This article is about the scientific concept. For the substance of which all physical objects consist, see Matter. For other uses, see Mass (disambiguation).

Acceleration: **Acceleration**, in physics, is the rate at which the velocity of an object changes over time.

Action & Reaction: **Acceleration**, in physics, is the rate at which the velocity of an object changes over time.

Acceleration, in physics, is the rate at which the velocity of an object changes over time.

Life Connection Story...

I once was running from my brother on top of my stairs in my bedroom. Then I reached the stairs and I hit my brother and then hit the corner of the wall with my lip and I was bleeding so bad there was blood on my stair on the way down to tell my mother I never want to do that again

P.S. I was okay thankfully!!!

Glossary

Acceleration - in physics, is the rate at which the velocity of an object changes over time.

Action & Reaction - means if there is an action there has to be a reaction.

Closed circuit - means the circuit is off.

Conductor - is something that lets electricity go through.

Electric Current - is a flow of electricity

Electromagnet - An **electromagnet** is a type of magnet in which the magnetic field is produced by an electric current. It can be used to pick up other metal objects

Force - a **force** is any interaction which tends to change the motion of an object

Friction - is the rubbing is of a surface, it can produce heat.

Gravity - A force that pulls you to the earth

Inertia means that if something is moving it wants to keep moving but it always gets stopped.

Insulator - something that does not allow electricity to go though

Load - a load is a sound box and a fan etc.

Magnetic attraction - For information about objects and devices that produce a magnetic field, see a magnet. For fields that magnets and currents produce, see magnetic field.

Magnetic field - A **magnetic field** is the magnetic influence of electric currents and magnetic materials. The magnetic field at any given point is specified by both a *direction* and a *magnitude* (or strength); as such it is a vector field.

Magnetic pole - One of the two ends of a magnet

Mass - is the weight of something.

Motion - means something is moving.

Open circuit - means that the circuit is not on.

Speed - when you go fast

Force a strength or energy as an attribute of physical action or movement.

Switch - a switch is something that turns something on.

Weight - it is a pull of gravity on a object