

PINBALL MACHINE

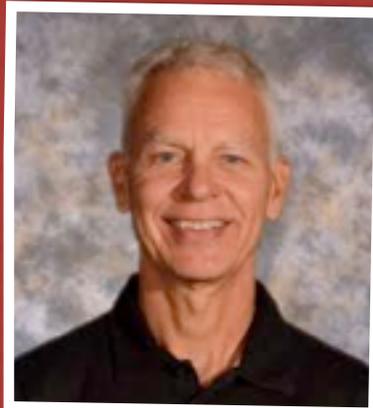


HOW SCIENTIFIC IS A PINBALL MACHINE?

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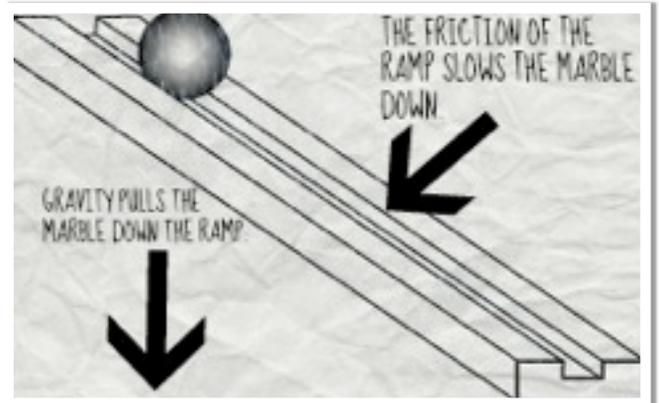
Marbles on a Ramp

Where's the science?

In this experiment there are a lot of **forces** acting on the marble. For example **gravity** is pulling the marble down the ramp because it is tilted toward the ground. The **acceleration** of the marble depends on the **weight** and **size**. The **friction** of the ramp slows down the marble.

Did You Know!?

If you were to race a big marble and a small marble they would end at about the same time. Even though the big marble starts out slow and the small marble fast!



Life Connection Story...

Sledding is like the marbles on the ramp, when I race my mom my mom always goes farther and I go faster. My mom starts out slow but she goes farther than me because she has more mass like the bigger marble. I have less mass like the smaller marble and I accelerate fast and I go really fast but I don't go very far. Sledding is just like marbles on a ramp.

Vocabulary

Speed-how fast an object is moving

Force-a push or pull on an object

Acceleration-an object speeding up

Gravity-the force that pulls things to earth

Weight- how heavy or light something is

Friction-the rubbing of surfaces, it can cause heat

Newton's 1st law of motion

Where's the science?

Newton's first law of motion is the law of **inertia**. Everything has **inertia** and wants to keep doing what it is doing. That is why when you car stops suddenly your body goes forward, that is because your body wants to keep going forward even though the car stopped. The same thing happens with when you accelerate quickly.

Did You Know?!?

If you pull a piece of paper really quickly from under a cup the cup will stay in the same place.

Life Connection Story...

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Vocabulary

Inertia- the force that makes thing want to keep doing what they are doing.

Force-a push or a pull on an object