

Physics Research Topics and Projects

Explain how a rainbow is made. How is a double rainbow made? Explain this to the class.

How does a microwave oven work? Explain this to the class.

Demonstrate a laser light from about 200 feet away shining on a dime in a dark room. Is the shadow as you would expect? Have the class come see your set up. Explain to the class what is happening.

The engineering team a couple years ago built a PAL (power assisted litter). One of the things they needed from the physics students is the power requirement for the motor. Power is energy per second. We can figure out how much energy it takes to lift a mass a certain distance, and if we divide that by how long it takes, we have power. Calculate the power requirement to lift a 100kg person up a 30 degree slope at a rate of 4km/hr. Explain this to the class.

A vacuum pump can be used to make a ping pong ball cannon. Demonstrate this for the class and explain the physics behind it.

I have a large mirror. Have a person stand with one leg on each side. Filming from the front in the right place, the camera will “see” two legs. If the person lifts the leg in front of the mirror, it will appear that two legs are off the ground. If the background is about the same as the reflection in the mirror, it will look like the person is floating. Try to get a video clip that is convincing.

Explain ocean tides.

Using the formula for calculating gravitational force, show what percentage higher you should be able to high jump if the moon is directly above you compared to at your side.

Research some of Albert Einstein’s contributions to physics and present to the class.

Research how computer chips are made (semiconductors) and present to the class.

Research magnetically levitated trains, and explain them to the class.

Create a presentation on Velocity and Acceleration for an 8th grade science class.

Or select your own project or research topic and check with me before proceeding very far.