

Physics Internet Scavenger Hunt

For each site below, follow the link(s) and begin your hunt for information! Once you are done, you can go back and explore any of the sites in greater detail! Enjoy! Go to www.thesciencequeen.net then click on student resources>physics>physicsphun

Amusement Park Physics

1. Which horses on a carousel are moving the fastest: the ones on the inside or the ones on the outside? Explain your choice.
2. Which Law of Motion explains what happens during a ride on the bumper cars? Give an example.
3. Where do riders have a feeling of “weightlessness” on a pendulum-type ride? At what point on the pendulum-type rides do riders feel the highest g-forces?
4. Explain the “weightless water” trick. Hint: Go to the Free Fall section.
5. Out of the 270 million people who visit amusement parks annually, how many require a trip to the emergency room?

Speed Machines

1. How long can the SR-71 operate (at top speed) before it needs refueling?
2. Who devised the unit of power called the horsepower?
3. What type of vehicle is the Spirit of America? _____
4. What is its top speed? _____

Physics Classroom: Newton’s Law

- A. Give an example of Newton’s 1st Law of Motion.
- B. What formula is used to show Newton’s 2nd Law of Motion?
- C. In Newton’s 3rd Law, how many forces always act at once? Give an example of how this works.

Funderstanding

1. Create a working roller coaster. What is the coaster's top speed? _____
2. Sketch your coaster here:

Building Bridges

Choose **Forces** from the main menu.

1. Draw a line to match each **FORCE** to its best description.

Compression

A force that stretches a material apart usually causing it to become longer.

Tension

Bending•

A force that squeezes a material together usually causing it to become shorter.

Shear

A force that causes parts of a material to slide past one another in opposite directions.

Torsion

A force that causes a straight material to curve as one side squeezes and the other side stretches apart.

An action or force that twists a material.

2. Visit the **LOADS** section to explore the effect of external forces on the strength of a structure.

External Force	Description of Problem	How To Strenthen It
Weight of Objects		
Soft Soil		
Temperature		
Earthquake		
Wind		
Vibration		