Warm Up

1. What is the work done by a 67.0 kg person who walked a distance of 2005 m?
2. What is the force on a 82.0 kg object traveling at 23.0 m/s if it took 35.0 sec to stop it?
3. What is the height of a school if a water balloon is thrown off the school with a horizontal velocity of 15.0 m/s and lands 73.0 m from the school?
4. What is the distance between two masses if one has a mass of 1615 kg and the other has a mass of 3050 kg and the gravitational force between the two is 0.540 N?
5. What is the final velocity of a ball thrown with an initial velocity of 37.0 m/s and has traveled downward a distance of 63.0 m?

Target

- I can explain how machines do work and the different types of machines.

Machines

- A machine is a device that make work easier for people by changing the force needed to do work.
- Consider a car jack, how does the force and distance of work change by using a car jack?

- The work you do to a machine is the work input.
- The work done by the machine is the work output.

- For the machine to do work, you must invest work into it.
- The machine itself is the not the source of energy for the work.
- The energy you invest is the energy a machine has to do its work output with.

- All machines require more energy than they use to do the work with.
- This ratio of work output to work input of a machine is the efficiency of the machine.
- e = Wo/Wi x 100%
- All machines have efficiency that is less than 100 percent.

Simple Machines

- There are six simple machines that make life easier for people.
- They are the lever, wheel and axle, inclined plane, wedge, screw, and pulley.

Compound Machine

- A machine that consists of two or more simple machines working together is a compound machine.
- Ex. Bicycle (wheel/axle and pulley)

Summary

- A machine is a device that converts force and distance.
- Cannot get more work out then what is put in.
- Efficiency cannot be 100% or greater.
- Machines can be considered simple or compound.

Assignment

- Gizmo Pulley Lesson
- Print the guide attached to the lesson.
- Go through the lesson in Gizmo and fill out the guide.
- Take a picture and send it to me.