

Exploring Simple Machines

Complete **(ONE)** of the following by **Monday, March 4th**.

This activity will be mostly completed at home because of the equipment involved. This can be worked on in partners (maximum of two) if the partners live close to one another and can get together regularly. I am giving the last class today (Friday) for the students to do some planning as partners or individuals. *(this project will be made mostly at home)*

Simple machines are 1.Pulleys 2. Levers (and gears) 3. Wedge 4. Screw 5. Inclined Plane (ramp) 6. Wheel and axle

1. Make one or more Lego creations that give a **working** example of **at least 3** simple machines being used, such as pulleys or gears or both. (For example if your creation uses multiple pulleys this only counts as one type of simple machine. Explain and demonstrate how your device(s) works on a video clip as well as bring it in and explain it to the class . See samples on Showbie or You tube.
2. Create a Rube Goldberg display. This is a series of items that are set up to use simple machines to work together to complete a job. (You have probably seen examples where the ball rolls, knocks over the can that trips a pulley to lift the weight that triggers the seesaw etc. and food falls into the dogdish/pops a balloon etc) *Try to use all 6 simple machines.* Minimum 3 types of simple machines(using only the minimum would receive a score up to 70) (not counting any screws holding it.) Make a video explaining how it works and showing it in action.
3. Do an experiment about pulleys and write up the experiment for how you did it and what you found out. (Title, Purpose, Materials, Observations, Data Tables, Conclusions: What I found out) Example 1: you could test why do some pulleys have a large wheel and a small wheel rather than pulleys of the same size? How does this affect its performance? 2. Example 2: Show how a single pulley works vs a double system. You could look in books on science fair ideas or online and do a simple experiment. Get guidance from an adult for a lab type format for the write up. I have pulleys to fit example 2 that can be requested to borrow.
4. Make a poster about the different types of simple machines; pulleys, wheel and axle, levers, screw, inclined plane and wedge. What are the types? How do they work? Make a poster with explanations.

We are heading toward the end of the term and as such I cannot give any extensions on the project. Please have your video/poster or report ready to present on the 4th.