

(20 pts) Approx. 3 days

The second part of our unit focuses on machines of various kinds. Here you'll be asked to do some research of your own into the 6 simple machines. After that, you'll watch some videos on some pretty cool complex machines and take some notes. Finally, you'll investigate one of our lab's complex machines and draw and label a picture to illustrate how it works.

1. Start things off by watching the overview *Machine Research* video.
2. Then, do some research online into the 6 simple machines listed below. Take some notes on each (a total of 1 page), that include a picture of what they are and how they create mechanical advantage:

Inclined Plane	Screw	Pulley
Wheel & Axle	Wedge	Lever

3. Then watch each of the four videos on complex machines. For each, take some notes on how they work and which simple machines are at the core of their function. Brainstorm at least 5 other applications for those machines or for similar machines.
4. Next, pick one of the machines we have in the Makerspace & Lab. You can pick any of them, but some ideas are listed below:

<i>CNC Router</i>	3D Printer	<i>Tormach Mill</i>	Laser	<i>CNC Plasma</i>
T-Shirt Press	<i>Vinyl Cutter</i>	Large Poster Printer	<i>SSA1000 Press</i>	Saws or Drills

5. Find the machine you've chosen and draw a very detailed, full-page diagram of the main part of your chosen machine. It should be an impressive drawing... the kind you want to put up on the fridge at home.
6. Identify as many of the simple machines as you can within your chosen complex machine. Label them (all) on your diagram.

Part 1: Game Design Tasks	5 points	4-3 points	2-1-0 points
 Notes on Simple Machines	+ You did your own online research about all 6 simple machines + You took a full page of notes	- Your notes are less than a page - Your notes exclude a simple machine	- Your notes are lacking - You exclude more than one machine
 Notes on Complex Machines	+ Your notes cover characteristics of all 4 complex machines + Your notes include brainstorming ideas for new applications	- Your notes are not a full page - Your brainstorming lists are not at least 5 ideas long	- Your notes are lacking - Your brainstorming is missing
 Complex Machine Diagram	+ You chose a complex machine in the lab + Your diagram is very carefully drawn and includes all the parts/pieces	- Your drawing is missing key elements	- Your drawing is poorly done - You left out important parts of the machine
 Simple Machine Labels	+ You identified and labeled at least one of every type of simple machine + You labeled as many simple machines as you could find	- You labeled fewer than 6 simple machines	- Your labeling is skimpy and lacking

