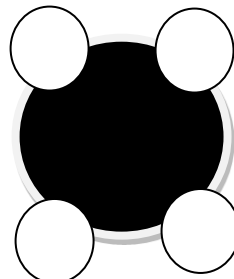
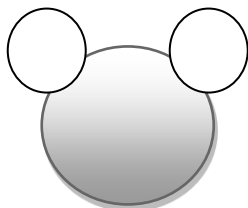
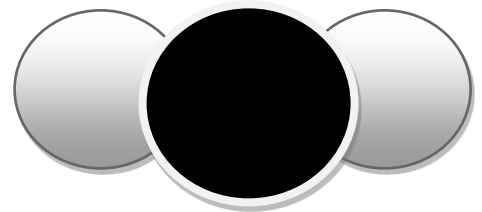
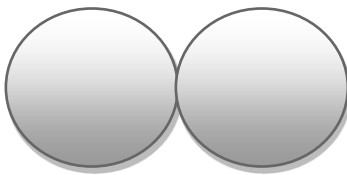


Review for Mid-Year Exam

The Material World

1. Define mass and give 2 examples of objects with the units mg, g, and kg. Explain how you would find the mass of a solid and of a liquid.
2. Define volume and describe how to find the volume of a regular object and irregular object. What are the units associated with each method?
3. Define density and give the formula to calculate it. Be able to compare densities using numerical data or by diagrams.
4. What is the difference between a physical change and a chemical change? Give 3 examples of each.
5. What are the indications or signs that a chemical change has occurred?
6. Create a diagram chart using the following terms: solid, liquid, gas, freezing (solidification), melting (liquefaction), boiling (evaporation), condensation and sublimation.
7. What kind of changes are the phase change?
8. Compare rocks and minerals using the words pure substance, heterogeneous mixture, and homogeneous mixture.
9. Express the following information as a density
 - a) An irregular object with a mass of 18 kg displaces 2.5 L of water.
 - b) A 250 g piece of rock has a volume of 50 cm^3 .
 - c) Metal A has a mass of 600 g and displaces 100 cm^3 of water while Metal B has the same mass and has a volume of 75 mL. Which metal has a higher density?
10. What happens to the density of air in a balloon if the volume is increased while the mass remains constant?
11. State the name and symbol of the first 20 elements from the periodic table.
12. What is a molecule?
13. What is the smallest particle of matter that can exist on its own?
14. Match the formula with the following molecular model given that:

gray = oxygen
white = hydrogen
black = carbon



15. For each of the molecules above, state the number of atoms of each element.
16. How is it determined where in the periodic table an element is placed
17. For each of the following, state the location and charge.
 - a) Proton
 - b) Electron
 - c) Neutron
18. If fabric softener is not used, sometimes socks stick together when they are removed from the dryer. Explain why that happens using the terms 'electrons' and 'static electricity'.
19. Complete the sentence with one word in the brackets: Same charges will (attract or repel) and opposite charges will (attract or repel).

Earth

1. Compare and contrast the terms rocks and minerals.
2. List the 3 types of rocks and describe how they are formed.
3. What are the 3 types of igneous rock and what are their characteristics?
4. What are the tests that we do on minerals in order to identify them? Briefly describe each test.
5. Define hardness and lustre.
6. Which scale is used to determine the hardness of a mineral?
What would a value of 1 indicate? What would a value of 10 indicate?
7. Draw the rock cycle using the following words: sedimentary rocks, igneous rocks, magma, sediments, metamorphic rocks, weathering and erosion, heat and pressure, melting, solidification
8. How is soil formed?
9. Order the soil particles from small to large: sand, gravel, clay, loam.
10. What are the 4 types of soil?
11. Define renewable sources of energy and non-renewable sources of energy. Give 3 examples of each.
12. Name 2 events that can cause wind.

Technological World

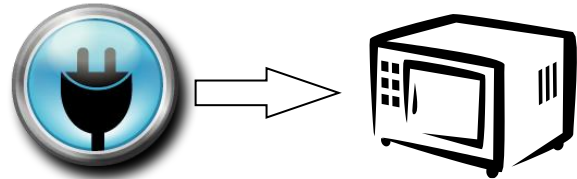
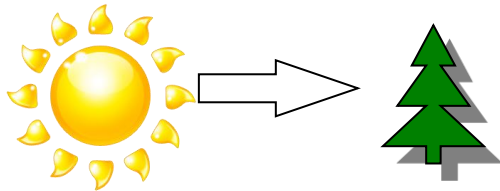
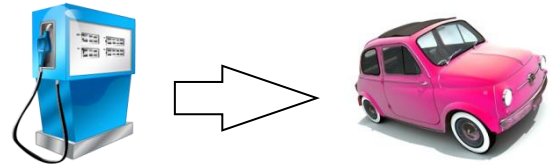
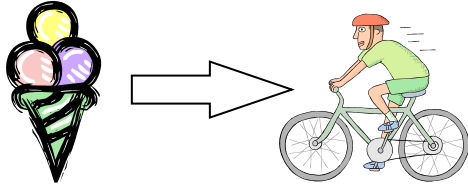
1. Give 2 examples for each of the following simple machines: wedge, pulley, wheel and axle, inclined plane, and lever
2. Use arrows to show each of the following types of motion: rectilinear, alternating, circular, and oscillatory.
3. Define simple machine.
4. List the types of basic machines and give two examples of each.
5. List the three classes of levers and give two examples of each.
6. How is the class of lever determined?

7. State whether each statement is true or false:
 - a) machines allow humans to use less force
 - b) machines allow human to do less work
 - c) the closer to the fulcrum the load is, the more effort force must be applied.



8. Define fulcrum, load, and effort force, and indicate them on the diagram of the wheelbarrow.

9. Indicate the energy transformations happening there (before and after the arrows).



10. What is a technological system?
11. Write the characteristics of a system for a dishwasher. Include the overall function, the controls, the inputs, the processes and the outputs.
12. What is a manufacturing process sheet? What information is found on it?
13. What is the difference between motion transmission and motion transformation?
14. Look at the pictures below. Do they transmit motion or do they transform motion?
Name the systems.

