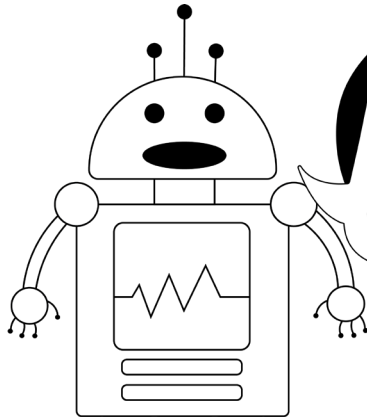


Reverse Engineering (Part 1)

This activity was created by Robyn.

Everything around us is engineered from raw materials. We can think about the raw materials that make up everything surrounding us in two ways.

- 1 As separate material parts to be formed into tradable goods (wood, aluminum, rocks). The pre-engineered materials.
- 2 As engineered technologies that can be broken down into their raw materials, like pencils or computers.



Engineering and reverse engineering also follow steps and processes like **algorithms**, too! I reverse engineered the pencil below back into its raw materials! Do you think you could do the same thing with another object in your home on page 13?

The piece that fixes the shaft of the pencil to the eraser is made of aluminum. Aluminum is a metal that is mined from the crust the earth.

The writing tip of the pencil is made of graphite, that is mined from our precious planet.

The eraser that fixes all our mistakes is made from a mixture of pumice, a volcanic rock, and rubber, a naturally forming substance.

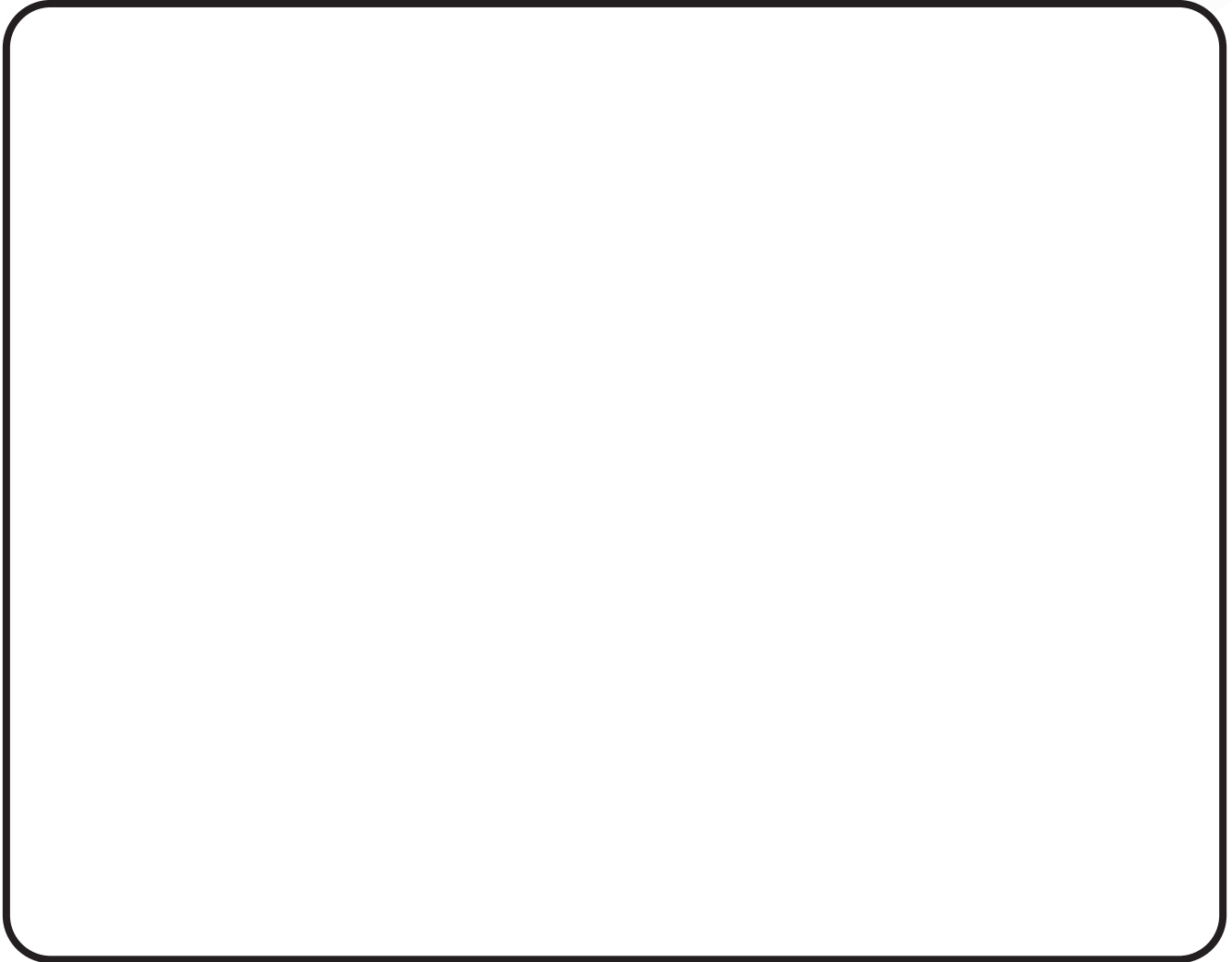
The shaft of the pencil is made from milled trees, or more commonly known as wood. Trees grow naturally in our vast forests.

Date: _____

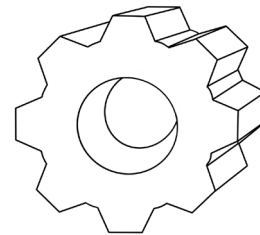
Name: _____

Reverse Engineering (Part 2)

Choose an object in your home to reverse engineer and draw it in the box below! You can either draw the full object or broken down like the pencil on page 14.



Now, just like Esiw did with the pencil break your object down into its raw materials and list them here:



It is really important to remember that these raw materials aren't infinite. We need to use these materials sparingly and with caution.

Try going for a walk and looking at what is around you. What can be engineered into technologies?