

REVERSE ENGINEERING ACTIVITY

This activity is the result of a number of discussions with other tech ed teachers in an attempt to address a number of issues. The first one is that many students today do not have an innate curiosity about what makes things work. They do not just take things apart to see how they work. Secondly, with the ever increasing amount of electronic devices our students seem to have, their understanding of how they work is decreasing. Probably the most important reason for this activity is to introduce students to electricity and electronics at a basic level. Given the amount of electronic devices present in our world today, it is up to us as technology teachers to create an awareness about the extent that electronics is a part of our lives and hopefully create interest and enthusiasm to further pursue this field.

The first step is to have students bring an item in to take apart. Start early reminding them that they need to find something. Ideally the item is something that doesn't work already. Depending on what item the student brings in, they will then need to research how it works. On one of the attached sheets, there is a list of Internet web sites which have a wealth of information about mechanical and electronic devices. Probably the most extensive is the HOW STUFF WORKS site. I e-mailed the author and received permission to make limited (less than 10) copies of any information students may need for their device.

When students begin actual disassembly of the device remind them that they are taking apart, not demolishing. Electronic components need to be carefully removed from PC boards for later categorizing and mounting (hot glue gun) to the attached components sheet. Larger parts and components can be mounted on materials such as cardboard or pegboard and held in place with twist ties. The Jughead's Information Station web site has sections on identifying electronic components. I have also showed students how to use basic electrical testing equipment such as ohmmeters, voltmeters, and continuity testers to "test" parts of their devices. Several students brought in small engines to disassemble giving me the opportunity for further discussions about types of engines and their operation and applications.

Any questions about this activity, contact:

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