

Activity 1.7 What is It?

1.) What is it?

1 Answer.) We have selected the third device and we believe it to be a hydraulic press. Normally, this device crushes and flattens metals, foods, and even whole cars. However, our hydraulic press is a portable one, hence it being smaller than most ones you've probably seen.

2.) What problem does it solve?

2 Answer.) The hydraulic press makes it very easy to crush and flatten metals and other large objects that, with human labor, would be very hard to crush. It can also be used for cooking by grinding up and flattening ingredients like cocoa powder. In the large industrial scale it can enable large sheets of

3.) What criteria were used to guide the design?

3 Answer) When you think of a hydraulic press, you would think of a very large machine that is used mainly for industrial purposes. When we were making our press, we wanted it to be smaller than most ones you see as well as cheaper and more accessible than others. This is a fairly small change but we wanted our hydraulic press to use man power (so through pumping) rather than using electricity. This saves electricity. However, there is also an electrical version for those who prefer it that way.

4.) What are the most important features of the design? What features allow it to perform its intended purpose?

4. Answer) What allows the small mechanism to perform such a large task is the simple premise that the force applied on one side of the press with transfer over to other side of the press, which is normally done with a incompressible fluid such as oil. Our design will includes a hand pump but if you want an easier way you can get the electric one instead of the hand pump. It is also extremely compact compared to other presses and this allows it to sit anywhere you want, whether it's your garage or kitchen.

5.) How does your product affect society and the environment?

5.) Answer) Our hydraulic press is more accessible to people, so more people could benefit from it's uses. Since we made a version of the press that doesn't use electricity, we could save energy this way, which is a growing concern these days.

### Conclusion Questions

1.) Why is it important for engineers to be creative and think outside the box?

1. Answer) Engineers must be able to be creative and think outside the box because they need to think of solutions to problems no one has thought of before. They constantly need to think of new and unique features that will make existing technologies better. One of the main points of their job is to make things better and to come up with new ways of carrying out certain jobs, and that is all done with creativity.

2.) What other characteristics do you think engineers should possess in order to be successful problem solvers?

2. Answer) Engineers should also have good analytical skills, math and science skills (since those are the two subjects mainly used in engineering), and they are cooperative (so that they could work on problems with other engineers and put ideas together).