

From instructions provided in class to follow design process:

Analyze & Conclude

1. List the renewable energy sources you used.
2. Explain why you chose them instead of others.
3. How did that reduce air/land/water pollution?
4. Name 3 components in your design and describe the environmental benefit of each.
5. Choose 2 other features and explain how they reduce or recycle non-renewable resources.
6. How would you promote your design in the future based on availability of space and resources, environmental concerns, and price?

Students 1 & 2 (AP & JS)

1. We used solar panels, a small wind turbine, and heat from the sun to get power and heat our home/water.
2. We chose these sources because they have a minimal impact on our environment and are small and (relatively) cheap to set up. They also always produce power (during the day) so we don't have to worry about running out.
3. This reduced air pollution because we didn't have to burn coal for power. It reduced land and water pollution because we saved space by placing them on the roof. Using less space means less need for heavy machinery that can harm the environment.
4. Name 3 components in your design and describe the environmental benefit of each:
 - a. Greenhouse - We can grow our own food and not have to drive to buy food.
 - b. Battery - We can save energy from the day so we don't have to burn coal to use power during the night.
 - c. Electric SUV - Doesn't burn gas so it doesn't harm the environment.
5. Choose 2 other features and explain how they reduce or recycle non-renewable resources:
 - a. Water storage - stores water from the rain so we can use it for drinking
 - b. Skylight - Uses energy from the sun to heat the house so we don't need to burn coal in a furnace for heat.
6. In the future I would promote my design by saying that it uses less space by putting things like a miniature wind turbine on the roof. If in the future space costs more, this will save money. The house is also made partly of recycled materials which saves money on buying new materials.

Student 3 (HW)

1. Solar, geothermal, and wind.
2. They were the easiest and best ones to choose, for example wind and solar are relatively easy to install and use.
3. I used only renewable energy, and took steps to recycle, and minimize my carbon footprint trash.
4. Instead of just throwing away trash, we decide whether they can be composted or recycled before we throw them away. Next is renewable energy sources. I have many ways of generating power on my own, so I minimize the amount of energy I need to buy from power plants. Lastly, I have heavily insulated walls, so I can pay less for heating and cooling, as the temperature will stay in the home instead of escaping.
5. We compost any left-over food or decomposing materials we are finished using, and recycle anything else that can be recycled.
6. I would promote it as costly with medium availability with low environmental concerns. Because it is large, expensive, but has zero to none carbon footprint.

Student 4 (IP)

1. I used hydraulic power with the water wheel, connected to the water wheel as a generator, connected to the solar panels for heating/cooling and electricity.
2. I picked the water wheel because there was a river near the house for the pool and I thought it would be a good way to get energy.
3. Since I am using these forms of power I am reducing the use of fossil fuels which is reducing the amount of air, land, and water pollution. Although I had to get them to the house some way overall it does not affect me as much because I would be using them more then I would be using a car to repair or receive them.
4. My green house and garden are reducing the amount of car, pesticides and energy being used because I would have my own food and need to go to stores less, also I would have a screen over my garden so I would keep animals and bugs out, so I don't have to use pesticides. I have a mineral eco pool that gets water from a nearby river and hot springs to warm it. I have a grass roof, "Green roofs provide shade, remove heat from the air, and reduce temperatures of the roof surface and surrounding air" according to Using Green Roofs to Reduce Heat Islands.
5. The house has an electric car, but you don't need to use it much because they normally use their bike. Another feature are the solar panels for heating/cooling, and electricity.
6. I would list all the pros of this design and all the cons about previous designs, I would talk about how there's room for improvement and ways that we could improve it.