

### Off the Grid! 7.1 Unit Challenge

- Your parents are fed up with paying their electric bills. They've decided to go completely off the grid. They are going to build a house on a plot of land they've already purchased. There are no electrical lines nearby and your parents have no intention of hooking up to any external electrical source. You are horrified at the thought of having no phone, no game devices, no TV/DVDs, no light, no refrigeration and no hot water.
- Your parents have given you a map of the land, and you're pretty sure you could design an electrical generation plan that uses wind energy and/or water energy to generate electricity for the devices you want to use on the property. Your parents have agreed to let you try to create this electricity generation plan, but they have a limited budget and they have concerns about environmental impacts. They also don't really know how electricity is generated and have never heard of kinetic, potential, or electromagnetic energy.
- You will have to teach them about these forms of energy and convince them your plan will work. Your challenge is to design an electrical generation plan that stays within budget, has limited environmental impacts, and generates enough electricity for your household, AND to convince your parents it will work. Otherwise, you're IN THE DARK!

