Name: _____ Hour _____ Date: _____ Unit **7.1**

7.1 Unit Challenge Organizer - Student

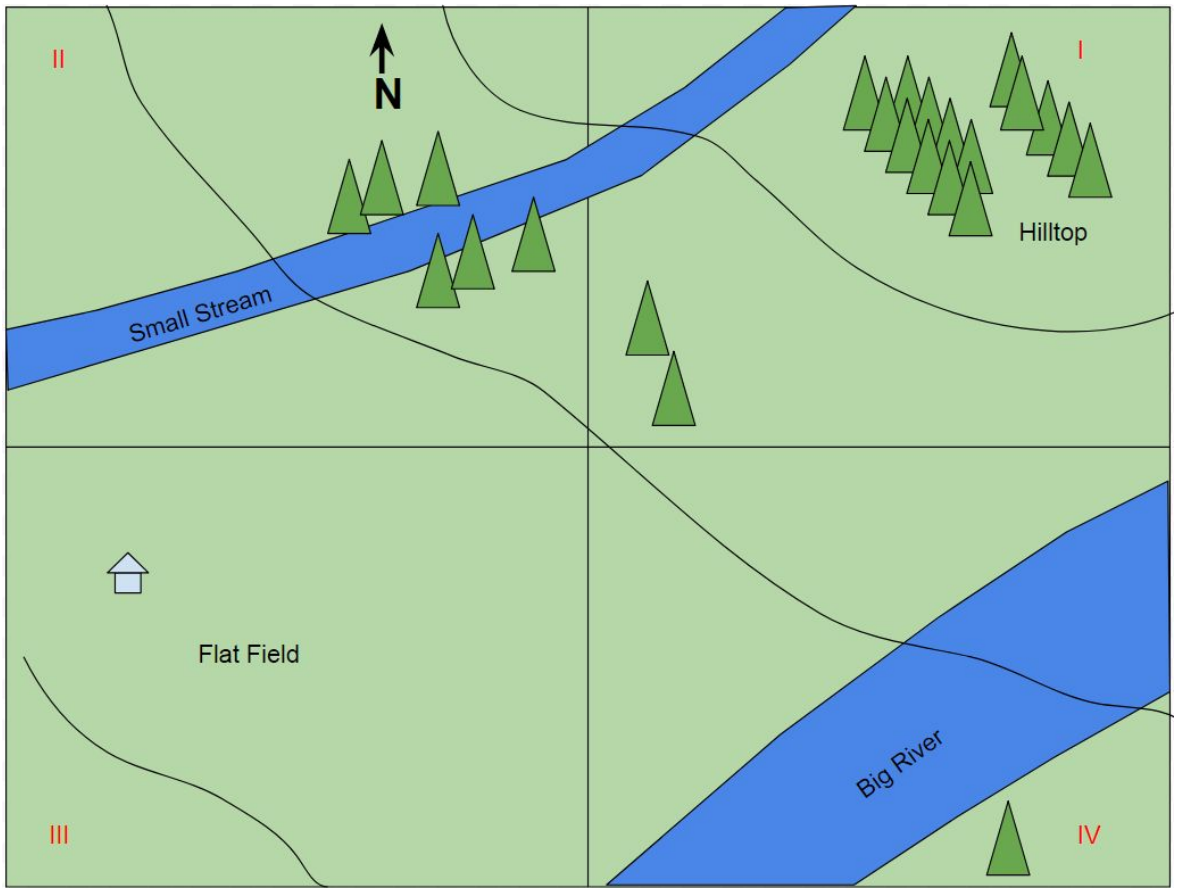
"Off the Grid!" Unit Challenge Scenario

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!

Map of your family's new land plot



Unit Bubble Map

L2: Engaging in Arguments from Evidence

Claim: "Wind and/or water are the best energy generation methods to use in our Unit Challenge."

Evidence:

Reasoning:

L3 Connect: Generator system Model

Name: _____ Hour _____ Date: _____ Unit **7.1**

L4 & L7 Connect

L4 Question: Where is the most appropriate place to build a hydroelectric generator as it relates to potential energy? _____

L7 Question: Where is the most appropriate place to build a hydroelectric generator? _____

Why?

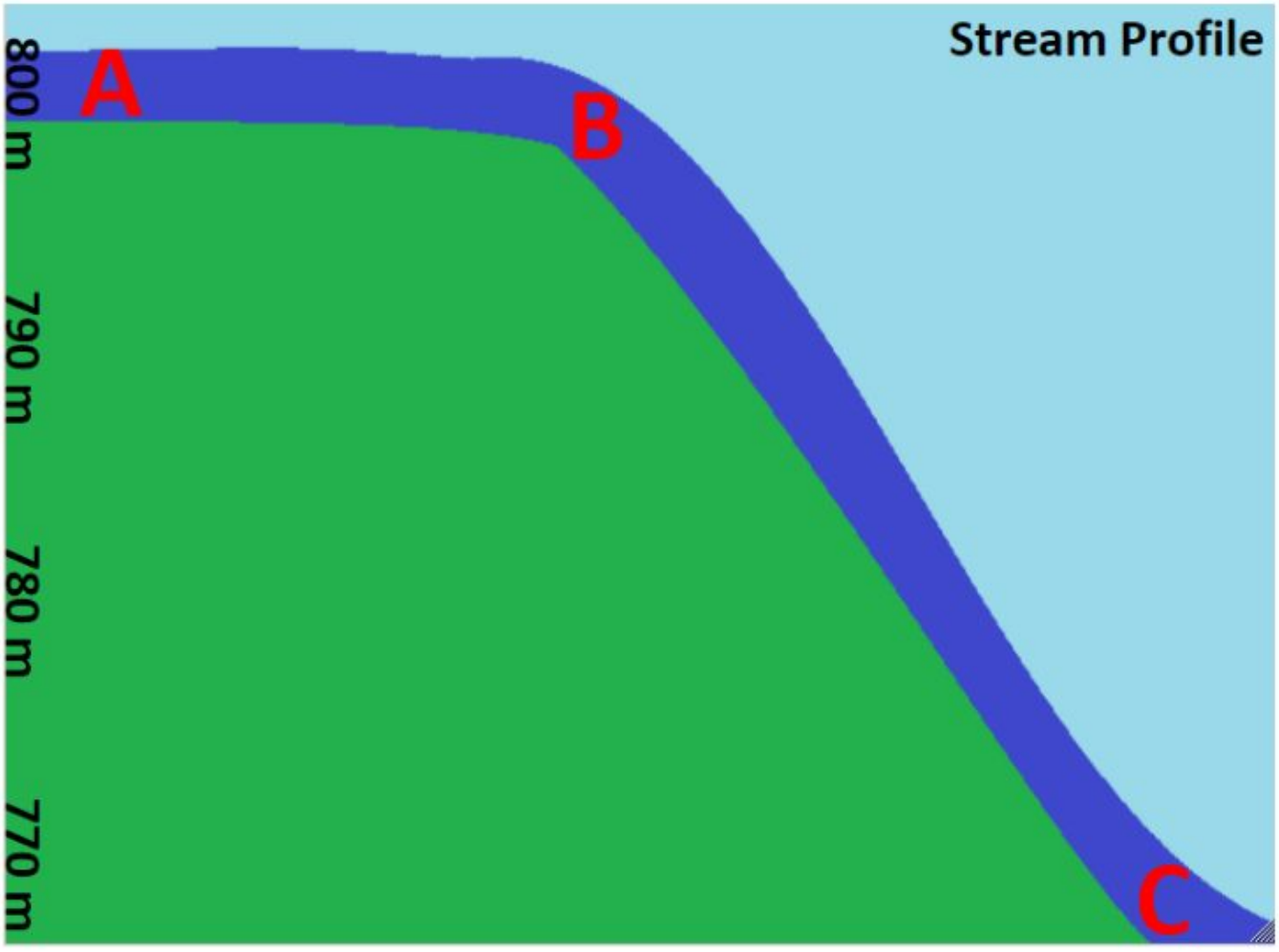
_____

_____

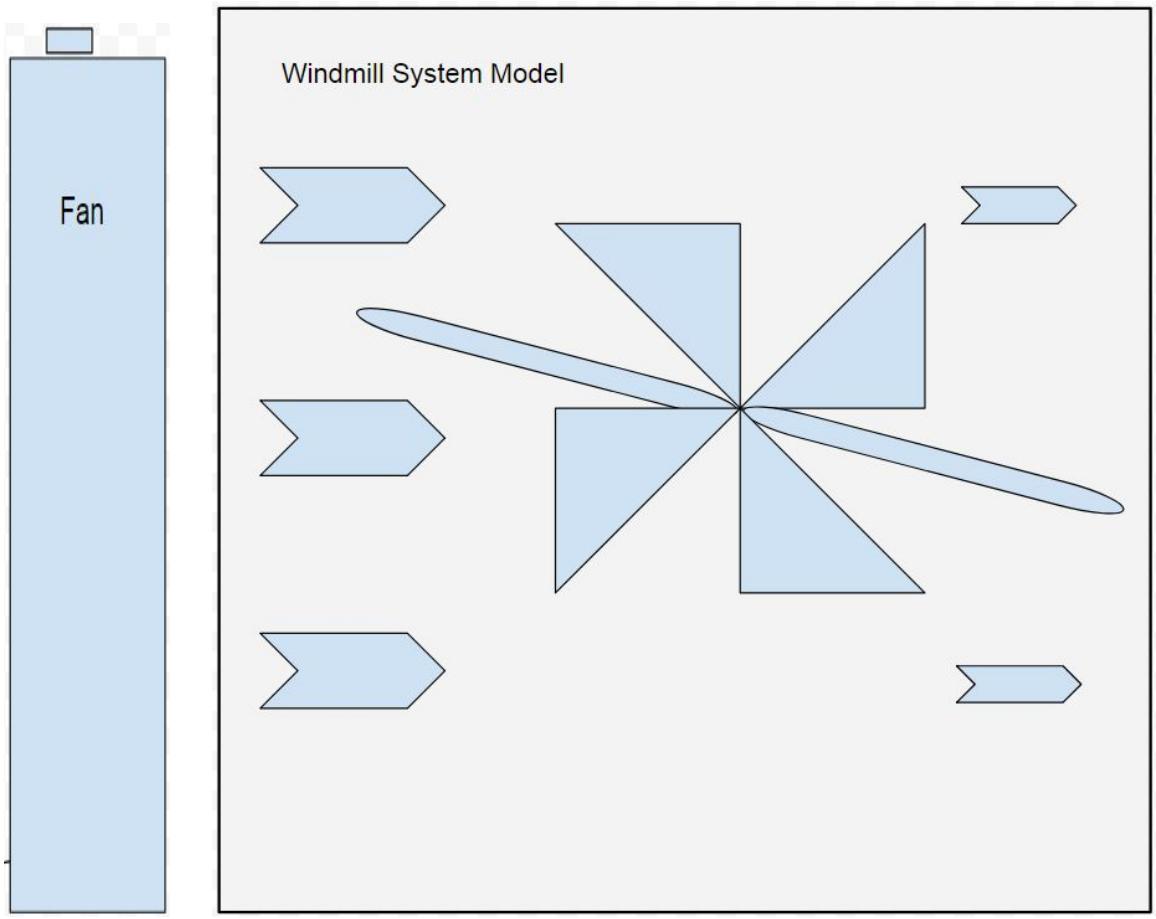
_____

_____

_____



L6 Connect: Windmill System Model



L10 Share: Audience Evaluation

As I listen to the presentation, I ...

(Put an X in each row to mark your answer)	**Not at All**	**Need More Information**	**Totally on Board!**
Understand the problem they are trying to solve.			
Can follow along with their models and explanations about their models.			
Understand their reasons for choosing the location(s) they did for their electricity generation unit(s).			
Feel as though they answered questions completely.			

As a member of the audience, I have listened closely to the group's plan for generating electricity on their parents' land.

Claim: The group's plan *will* or *will not* (circle one) convince their parents that generating electricity on their land is feasible.

Evidence: Provide evidence from the group's presentation that supports your claim.

Reasoning: Make connections between the group's presentation and what you've learned this unit to explain your reasoning for your claim.

