

Name _____ Period _____ Date _____



Wind Power

STEM Sims

Lesson 4: Maximizing Dollars

Since wind is an unlimited resource, the cost of converting wind power to electricity should only be dependent on the original construction of the wind turbine and its maintenance. Can you design a wind turbine that saves consumers the most money?

Doing the Science

1. Start the Wind Power Simulation by clicking on the “Sim” tab.
2. Select the “Make Turbine” button.
3. Choose the “Number of Wind Turbines on Farm.” (Values 1, 2, or 3)
4. Select each turbine and choose a Tower Height and Blade Radius.
5. Click on the “Submit” button.
6. Choose “January” from the Calendar menu.
7. Select the “Start” button.
8. After the completion of the run, click on the “Money Saved” button at the bottom of the screen and record the information in Table 1.
9. While keeping the Calendar month constant (January), change the tower height and blade radius to find the most cost-effective wind turbine structure. Make sure to record your data in Table 1. Complete five trials in total.

Table 1.

Trial #	Tower Height (m)	Blade Radius (m)	Money Saved (\$)
1			
2			
3			
4			
5			

Do You Understand?

1. Which turbine design resulted in the greatest saving of money?
2. Why do you think that the turbine design from question #1 was so effective at converting wind power to electricity? Please list two or three reasons.