

Save On Energy Grant

Hello, grant committee.

My name is Hollee Kelley, and I am the physical education teacher at Selma Street Elementary School in Dothan, Alabama. Selma Street Elementary is a Title I school in which a vast majority of our students live in poverty. We are attempting to build a physical education program that provides our students with an opportunity to participate in a variety of different activities while instilling relevant and practical lifelong learning skills. By introducing students to a variety of different activities and sports, we hope they will find one they can participate in for life. Furthermore, due to the obesity epidemic in our country and specifically in our region, physical education is a crucial component of, and compliments one's academic curriculum too. To confront the obesity epidemic, Alabama has developed one of the most influential physical education curriculums in the United States. According to the National Association for Sport and Physical Education, it recommends "60 minutes a day of physical activity for children and adolescents. All schools should provide 150 minutes per week of instructional physical education for elementary school children, and 225 minutes per week for middle and high school students throughout the school year." Their research proves that physical exercise decreases childhood obesity, as well as increases academic performance and standardized test scores. Physical education then, is uniquely positioned to not only increase a student's cognitive and physical ability, but their social and emotional skills also.

Due to our financial constraints, however, it is very difficult to raise money to purchase equipment and other items needed to play certain activities. It is my hope that this grant is not limited to classroom teachers only. As we try to break negative stereotypes in regards to physical education, my approach is to motivate and influence students to try different activities outside of their comfort zone.

As you may can tell, we are very passionate about what we do, and we believe we can make a positive impact on our student's current and long-term physical well-being. If Selma Street Elementary was selected to receive the Save on Energy grant, it would allow us to purchase the equipment needed for the lesson that follows. By incorporating a relevant and pragmatic topic such as energy conversation into our physical education curriculum, we can encourage our student's physical well-being, as well as teach and promote a higher level of civic responsibility in regards to energy conservation. I thank you in advance for your time and consideration of our application.

Sincerely,

Holley Kelley

Save On Energy Teacher Grant

Lesson name: Fitness Wheel

Equipment: 8 fitness Polyspots, 16 Polyspots, 8 Aerobic Steps, 8 Foam rings, 8 Basketballs, 8 Jump ropes, 8 Hula hoops, 8 Bicep weights, 8 Push up mats, 8 Cones, 4 Large mats, 6 Hurdles

Grade levels: K-8th

Number of students: 10-100

Purpose of lesson: To inform young students about the importance of environmental energy conservation, as well as conserving energy for their bodies while participating in physical activity.

Description of lesson: Coach, "Can someone raise their hand and tell me the meaning of energy," (and then allow subsequent pause for student's answers). Then describe a basic definition of energy. According to the U.S Energy Information Administration, "energy is the ability to do work" (2016).

Did you know that energy comes from the Sun and Earth? We need energy to supply electricity to our homes and schools. Can you imagine life without electricity? We would not be able to turn on lights in school, supply running water, have air conditioning during the hot months, or heat during the cold months. Energy is broken up into two different groups; renewable and nonrenewable energy. We see all over the world how nonrenewable energy hurts our planet. So just like we must be responsible by fueling ourselves with proper energy by eating good foods, we should also be responsible and try to use more renewable energy sources in everyday life.

One form of renewable energy that is becoming much more popular are wind turbines. While windmills have existed for centuries, scientists and engineers have created new machinery to help us conserve greater amounts of renewable wind energy in order to decrease pollution. Industrial wind turbines resemble a pin wheel toy. According to the federal government's Office of Energy Efficiency & Renewable Energy, "the energy in the wind turns two or three propeller-like blades around a rotor. The rotor is connected to the main shaft, which spins a generator to create electricity. The wind turbine works the opposite of a fan. Instead of using electricity to make wind, like a fan, wind turbines use wind to make electricity" (U.S. Department of Energy, 2016).

People not only need to conserve energy for the environment, but should also conserve energy in their bodies too. Water, fresh food, and physical activity are basic resources needed to create and conserve energy in order to maintain a healthy body.

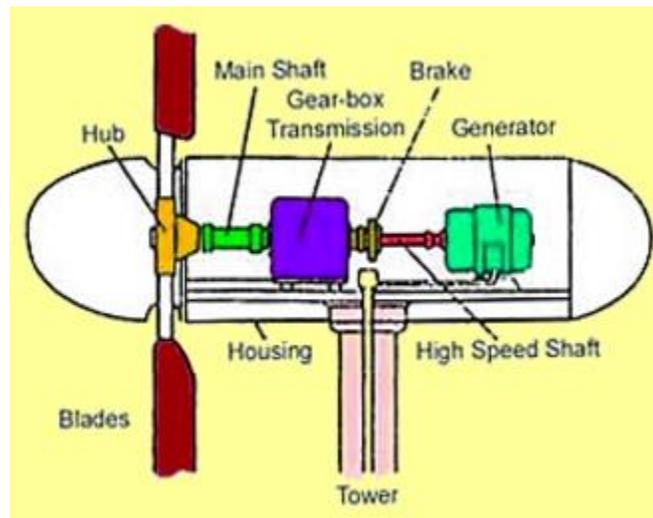
Today we are going to discuss and demonstrate energy conservation, both environmentally and personally. The fitness wheel activity resembles and works much like an industrial wind turbine. Each student activity station is intended to increase and maintain the energy in our body, as well as demonstrate similarly how the parts of an industrial wind turbine operate.

Classroom Organization: Students will be divided evenly into each station. There are ten stations in a rectangular formation around the gymnasium, ultimately intended to mirror the parts of a wind turbine. The stations will be organized as follows:

1. The first station resembles the wind turbine propellers. Students will wait behind their designated cone until the coach says "go." The first student in line will run one lap around the outside of each station, jumping the hurdles, before

returning to their designated cone, and high fiving the next person in line. The next student will then immediately begin the second station.

2. Stations two through ten resemble the machinery inside the wind turbine. The second station is a polyspot with an assigned exercise resembling the connecting hub.
3. The third station is an aerobic step portraying the main shaft of the wind turbine.
4. The fourth station requires students to dribble a basketball powering the gear box.
5. The fifth station entails a jump rope exercise to boost the transmission.
6. The sixth station necessitates jumping side to side or front to back from polyspot to polyspot with one's feet together, which mechanically power the wind turbine's brakes.
7. The seventh station involves a hula hoop spinning power to the generator.
8. The eighth station mimics a push-up mat as the housing cover of the machinery.
9. The ninth station is a bicep weight rendering the example of the high speed shaft.
10. The tenth station is a sit-up mat used to illustrate the sturdy base of the turbine's tower, as well as each student's personal core muscles on their bodies. After the student completes this station, he or she will return to the designated cone and wait their turn to run a lap.



Students cannot move forward to the next station until the student behind them taps their shoulder. This allows each station to run smoothly and be occupied by only one student. It is important to note that each student activity station is needed to allow the wind turbine to work properly.

Measuring Students' Knowledge: Towards the end of the activity, the teacher will ask students aged kindergarten through fifth grade several question that pertain to the energy lesson.

1. What is energy? –The ability to do work.
2. Where does environmental energy come from? –The Sun and Earth.
3. Is it important for us to save energy? –Yes!
4. What are ways we can save environmental energy? –Turning off the lights in our home; don't leave the water on; use fans instead of turning down the thermostat (air conditioning).

5. What are ways we can save our body energy? –Eating healthy; drinking plenty of water; exercising.
6. Is pollution good for the environment? –No!
7. What is the name of the machine that uses wind to create energy and stop pollution? –A wind turbine.

Students in sixth through eighth grade will be given a hand out quiz at the end of the lesson to assess their knowledge and learning comprehension about the recent activity. The following questions are administered:

1. What is the meaning of energy? –Energy is the ability to do work.
2. Where does environmental energy come from? –Environmental energy comes from the Sun and Earth.
3. Name the two categories of energy? – Two categories of energy are renewable and nonrenewable energy.
4. What are ways we can save environmental energy? –Two ways to save energy in our homes are turning off unused lights, and turning off excessive running water. Also, use fans instead of turning down the thermostat (air conditioning).
5. What are ways we can save our body energy? – We can save our body energy by eating healthy, drinking plenty of water, and exercising.
6. What is the name of the machine that uses wind to create energy and stop pollution? – The name of the machine is a wind turbine.
7. What does the wind turbine produce? –The wind turbine produces renewable electricity.
8. Why is the wind turbine important for our environment? –The wind turbine is important for our environment because it reduces pollution.
9. Explain how the fitness wheel relates to a wind turbine. –The first station resembles the propellers on the wind turbine. Stations two through ten are the different parts that help the wind turbine produce energy.

(Example quiz in Appendix A)

Classroom Goal and Objective: This goal and objective of the Fitness Wheel activity is twofold. First, the intent is to introduce an engaging physical activity designed to encourage participation and motivation in regards to childhood physical activity. Secondly, the intent is to teach students the importance of something as serious as energy conservation, and as industrial wind turbines are appearing in greater numbers, by making students aware of these devices at an early age, they will, hopefully, be more welcoming and supportive of other renewable energy sources as adults.

Reference List

Energy Kids, U.S. Energy Information Administration, EIA. 2016, Retrieved from <http://www.eia.gov/kids/energy.cfm?page=1>

ENERGY.GOV, Office of Energy Efficiency & Renewable Energy, Forrestal Building, Washington, DC. (2016). Retrieved from <http://www.energy.gov/eere/wind/how-do-wind-turbines-work>

Pop Quiz

Save on Energy Fitness Wheel

Name: _____

Date: _____

Directions: Please answer questions with complete sentences.

1. What is the meaning of energy?
2. Where does environmental energy come from?
3. Name the two categories of energy?
4. What are ways we can save environmental energy?
5. What are ways we can save our body energy?
6. What is the name of the machine that uses wind to create energy and stop pollution?
7. What does the wind turbine produce?
8. Why is the wind turbine important for our environment?
9. Explain how the fitness wheel relates to a wind turbine.

Fitness Wheel

Stations:

1. Hurdles
2. Exercise spot
3. Aerobic step
4. Basketball
5. Jump Rope
6. Jumping & landing polypspots
7. Hula hoop
8. Push up mat
9. Bicep weight
10. Sit up mat

