Christmas Energy

Essential Questions

- DIFFERENT TYPES OF ENERGY
- **TRANSITIONING FROM ONE ENERGY TYPE TO ANOTHER**

Learning Intention / Overview

Energy is required for all activities. Santa and his reindeer require energy too. This fun worksheet will allow students to think about kinetic and potential energy while thinking about everyone's favorite December topic – Christmas. Students are given different scenarios and are able to consider the key concepts of kinetic energy or something in motion versus potential energy where action could occur if there was a force applied. Let's hop aboard Santa's sleigh ride and travel around the world.

Methods / Teaching Strategies

- Review of kinetic and potential energy
- Independent practice

Assessment of Learning

- Christmas Energy worksheet (provided)

How might you customize or alter this lesson?

Key Learning Areas

Force, energy

Concepts Taught

Kinetic energy

Potential energy

Target Age

10 – 14 Year Olds

Duration

1 x 60 minute Session

You will need:

Christmas Energy worksheet

edgalaxy.com
Cool Stuff for Nerdy Teachers

Online Resources:

- http://edgalaxy.com/education-quotes
- http://edgalaxy.com/classroom-posters-charts/2013/9/10/14-educational-quotes-posters
- http://www.youtube.com/watch?v=iPnYfwLOw84

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Teaching Instructions

1. Begin by writing the words POTENTIAL and KINETIC on the board.

2. Provide students with a small piece of paper. They should write down an example of each. (POTENTIAL on one side; KINETIC on the other.) They do not have to include their name.

3. Collect the pieces of paper and discuss students' responses.

4. Provide students with an accurate definition of potential energy. Potential energy has the ability to do work, but is resting. A force would have to be applied to make the energy transfer from potential to kinetic energy.

5. Provide students with an accurate definition of kinetic energy. Kinetic energy means that whatever has this energy is doing work.

6. Once students have reviewed the definition of these basic energy forms, have students complete the Christmas Energy worksheet.

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Christmas Energy

Directions: Read each of the statements. Write **P** if potential energy is being described. Write **K** if kinetic energy is being described.

1. _____ Santa is taking a nap before boarding his sleigh. 	2. _____ Santa's reindeer launch into the air.
3. _____ Santa lands his sleigh on a rooftop. 	4. _____ Santa is standing looking down the chimney.
5. _____ Santa is eating some cookies and drinking some milk. 	6. _____ Presents sit under the Christmas tree.
7. Write your own example of potential energy relating to Christmas.	8. Write your own example of potential energy relating to Christmas.
9. Write your own example of kinetic energy relating to Christmas.	10. Write your own example of kinetic energy relating to Christmas.

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Christmas Energy – Answer Key

Directions: Read each of the statements. Write **P** if potential energy is being described. Write **K** if kinetic energy is being described.

1. POTENTIAL Santa is taking a nap before boarding his sleigh. 	2. KINETIC Santa's reindeer launch into the air.
3. KINETIC Santa lands his sleigh on a rooftop. 	4. POTENTIAL Santa is standing looking down the chimney.
5. KINETIC Santa is eating some cookies and drinking some milk. 	6. POTENTIAL Presents sit under the Christmas tree.
7. Write your own example of potential energy relating to Christmas. ANSWERS WILL VARY.	8. Write your own example of potential energy relating to Christmas. ANSWERS WILL VARY.
9. Write your own example of kinetic energy relating to Christmas. ANSWERS WILL VARY.	10. Write your own example of kinetic energy relating to Christmas. ANSWERS WILL VARY.

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