

Name: _____ Date: _____ Period: _____

Roller Coaster Energy Web Quest
An Investigation of Potential and Kinetic Energy

Take a virtual ride on the Millennium Force at Cedar Point! Follow Link 1 and select the video option and press play.

<https://www.cedarpoint.com/rides/Roller-Coasters/Millennium-Force>

1. What does a roller coaster have to do with science and energy?

Check out the energy in a roller coaster ride! Read the article and play the picture on this page to answer the questions below. (Link 2)

<http://science.howstuffworks.com/roller-coaster3.htm>

2. What is potential energy? At which point is potential energy the greatest?

3. What is kinetic energy? At which point is kinetic energy the greatest?

Open the link below. Click the VIEW button. (Link 3)

<http://illinois.pbslearningmedia.org/resource/hew06.sci.phys.maf.rollercoaster/energy-in-a-roller-coaster-ride/>

4. What do you notice about the relationship between potential and kinetic energy and the path of the coaster?

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Take a second virtual ride, this time on the Top Thrill Dragster! (Link 4)

<https://www.cedarpoint.com/rides/Roller-Coasters/Top-Thrill-Dragster>

5. Make a sketch (below) of what the roller coaster track looks like. Label the point at which the coast has the greatest potential energy **AND** the greatest kinetic energy.

What is the best seat on a roller coaster? Read here! (Link 5)

<http://science.howstuffworks.com/transport/engines-equipment/question624.htm>

**If the link does not open, Google “Best Roller Coast Seat”. The first link from How Stuff Works is the correct link. Click this link

6. As your roller coaster climbs to the top of the steepest hill on its track, when does the first car have the greatest potential energy? When does it have the greatest kinetic energy?

Create your own coaster! Keep in mind all that you have learned about potential and kinetic energy to make this coaster run! (Link 6)

<http://www.brainpop.com/games/coastercreator/>

7. If you are riding in your roller coaster, how do you think your speed is related to your kinetic energy?

8. What makes a successful roller coaster?

9. Want to make another coaster? Try Links 7 and 8!

<http://www.learner.org/interactives/parkphysics/coaster/>

<http://kids.discovery.com/games/build-play/build-a-coaster>