Roller Coaster Research

Assignment: Before you can begin building a roller coaster you need to understand some of the concepts behind roller coasters. Explore the following websites and answer the questions provided for each website on a separate piece of paper. When you are finished you may go back to any of the sites to complete the extra activities.

As you are completing this research consider the following questions. You may want to write down notes on a separate piece of paper so that you have some ideas when designing your roller coaster.

- Can all the hills be the same height? If not, why? Can they get bigger or must they get smaller? How will you determine how big or how small the hills can be and still win this contest?
- Does the steepness of the hill count? Is it better to make the hills steep or not so steep? Why?
- How curvy should the tops of the hills and the valleys be? Should you design sharp turns or smooth turns? Why?
- What provides resistance on the roller coaster causing the marble to slow down? How can this resistance be reduced?

Click on each website and then answer the questions below it on a separate piece of paper.

http://www.ultimaterollercoaster.com/coasters/

1. Why do people ride roller coasters?
2. Do you like to ride roller coasters, why or why not?

http://www.ultimaterollercoaster.com/coasters/records/

3. Read about the roller coaster records and choose the roller coaster that looks the most interesting to you, then write 2-3 sentences explaining the roller coaster and why you liked it the most.


4. How does potential energy relate to roller coaster design?


5. What forces are acting upon you when you are on a roller coaster?

http://adventure.howstuffworks.com/roller-coaster7.htm
6. Read about the loops of a roller coaster. Write 2 things that you learned from this page about loops and turns on a roller coaster.

http://www.learner.org/interactives/parkphysics/coaster.html

7. Read about roller coaster safety then design your own roller coaster. What rating did your roller coaster get? What factors did you have to change?

http://library.thinkquest.org/2745/data/openpark.htm

8. Test your knowledge of roller coasters and play the physics games. Write down 2 new things you learned while playing the games.

Your task is now complete. Build roller coasters on each of these websites and then make a drawing of the roller coaster you are going to build. The paper for this is in your roller coaster packet.


http://www.funderstanding.com/coaster

http://www.gamesgames.com/game/RollercoasterCreator.html