Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

WebQuest: Roller Coaster Physics

**Instructions:** Working with your partner, go to each website, then answer the questions. Have fun!

1. **Go to** [**MyPhysicsLab.com**](http://www.myphysicslab.com/RollerSimple.html)
2. Start with the first roller coaster track, the “Hump”
3. Explore the controls.
4. When you change the mass, how is the motion of the ball affected?
   1. Increase mass:
   2. Decrease mass:
5. When you change the gravity, how is the motion of the ball affected?
   1. Increase gravity:
   2. Decrease gravity:
6. Where on the track does the ball have the highest velocity (speed)?
   1. Why?
7. Go to[**Amusement Park Physics** at **http://www.learner.org/interactives/parkphysics/coaster/**](http://www.learner.org/interactives/parkphysics/coaster/)
8. Read the introduction. Which do you prefer, wood or steel?
9. Click on “Begin”
10. Explore different coaster designs. Finalize your favorite and record the description below:
    1. Height of the first hill:
    2. Shape of the first hill:
    3. Exit path:
    4. Height of the second hill:
    5. The loop:
11. How was your final design rated? Was it safe? Was it fun?
12. **Go to** [**Funderstanding.com/slg/coaster**](http://www.funderstanding.com/slg/coaster/)
13. Explore the different settings.
14. On your favorite coaster design, what was the maximum speed? What was the time?
15. **Finally, go to** [**Roller Coaster Game** at **http://puzzling.caret.cam.ac.uk/game.php?game=roller**](http://puzzling.caret.cam.ac.uk/game.php?game=roller)
16. Read the instructions and see if you can use your understanding of roller coaster design to progress through the levels. Count how many trials it takes to conquer each level. (See if you can beat me – I could not get past Level 4 in a reasonable amount of time….)

|  |  |
| --- | --- |
| Level | Number of Trials |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
|  |  |
|  |  |
|  |  |
|  |  |

***Congratulations on the completion of your Roller Coaster WebQuest!***