Name _____Date_____ Hour_____

Roller Coaster Physics Video (https://www.youtube.com/watch?v=H3UQiuDej38)

1. What does the term "stop height" mean and what role does it play in the design of a roller coaster?

2. At what point in a roller coaster ride is potential energy the highest?

3. At what point in a roller coaster ride does potential energy become kinetic energy?

4. Why do people feel a "rush or thrill" when riding roller coasters?

5. What is inertia?

6. How do negative G-forces affect your body?

7. Compare and contrast a near black-out sensation with a near red-out sensation?

8. How do roller coaster rides create the illusion of increased or decreased weight?

9. What is the legal limit for the maximum g-force that roller coasters can be designed to create?

10. What is the biological basis for this limit in question # 9?

11. What are some safety features found on roller coasters?

12. Roller coaster trains have several sets of wheels installed on them. What are the three sets of wheels on roller coasters for?

13. What is the maximum height of the "Superman the Escape" roller coaster?

14. How does the electromagnetic propulsion system work on Superman?

15. What would your dream roller coaster be like?

Below sketch a picture of your dream roller coaster. (If you hate roller coasters then your dream will be a nightmare –draw the scariest roller coaster you can think of.)

- ✓ It must have at least 2 hills and a loop or 3 hills and a turn (1 hill is your initial drop).
- ✓ Loops count as hills.
- ✓ Roughly indicate the height of each hill (in meters. remember a meter is just a little more than a yard. The tallest roller coaster in existence is 138 m tall).