

Save Our Gravity Web Quest

(Borrowed and modified Morristown West HS)

The Problem

Gravitron, the evil warlord of River Ridge High School, has stolen all of the gravity from Pasco County in the hopes of being able to overpower and dominate all of the River Ridge Knights sports teams. In order to prevent this from happening, you (the students) must complete this Web Quest. Gravity will only be restored once this mission has been completed and all answers and problems solved. Good luck! Knight fans everywhere are depending on your success! This message will self-destruct in 5 seconds or maybe not!

The Task

You, as a member of the Pasco County Gravity Alliance, must use the web links that are provided on this web page to answer each of the following questions about gravity. Write down, on a sheet of paper, the answer to each question.

The Process

1. In his famous experiment on gravity, Galileo dropped objects from what famous landmark?
2. What are the two characteristics of a free-falling object?
3. *Scalars* and *vectors* are similar, but not exactly the same kind of measurements. To confuse Gravitron, explain the difference between these two terms?
4. Gravitron can be weakened by explaining the difference between *distance* and *displacement*. What is the difference?
5. Find the mathematical formula for calculating acceleration.
6. If the velocity is constant, describe the slope of the graph on a position vs. time graph. _
7. If a ball was dropped from the Empire State Building, or from the Golden Gate Bridge, or from the Statue of Liberty, and from the top of a table, tell Gravitron how long it would take each of the balls to hit the bottom. Fill in the table below:

Dropped from:	Time (seconds)
Empire State Building	
Golden Gate Bridge	
Statue of Liberty	
Tabletop	

8. According to the popular story, how did Sir Isaac Newton come up with his Universal Law of Gravitation?

9. To further confuse Gravitron, we need two meanings for the word **gravity** that have absolutely nothing to do with math or science. What are the two other meanings?

10. Once all other questions have been answered, if you can give your weight on the Earth and your exact weight if you were on the moon, you can successfully end Gravitron's hold on Pasco County's force of gravity. Please give your Earth weight (in pounds) and your moon weight (also in pounds) to free our Knight athletes.

Resources

[Science and Technology Encyclopeda: Gravity](#)

[Describing Motion with Words: Speed and Velocity](#)

[Sir Isaac Newton](#)

[Why Gravity Causes Things to Fall: Drop Something](#)

[History of Gravitational Theory](#)

[Free Fall and the Acceleration of Gravity](#)

[Describing Motion with Position vs. Time Graphs](#)

[Moon Connection](#)

[Describing Motion with Words: Distance and Displacement](#)

[Describing Motion with Words: Acceleration](#)

Evaluation

After successfully finding the answers to the above gravity questions and writing them down on your paper, you will hand them in to your Gravity Leader (your teacher). You will be given gravity points for each correct answer, and your total gravity rating (your grade) will be determined by how many of the 18 required answers you successfully found. For example, if you answer 9 of the 18 questions correctly your gravity rating would be 50%. In order to get a passing grade, you must answer twelve of the questions correctly.

Conclusion

Congratulations! You have stopped Gravitron from his attempt to eliminate the River Ridge force of gravity. By doing so, you have set free all the citizens of River Ridge. Hopefully you have also learned a little about gravity and its relationship to everyday life. We hope that you will continue to learn more, about not just gravity but about many other forces at work in nature that affect our everyday lives in so many ways!