



Science Virtual Learning

MPI Physics

Gravity 3: Acceleration of Gravity

April 15, 2020



Lesson: MPI Gravity 3 - Acceleration of Gravity
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Objective: To understand how the Force of Gravity creates an acceleration “g” on the surface of planets

- The following video discusses how the force of gravity between a planet and objects causes them to accelerate toward the planet at a constant rate, g .
- <https://youtu.be/jc04PXI51jE>

Video: Acceleration of Gravity



1. The radius of the Earth is 6.38×10^6 m, and the acceleration of gravity on its surface is 9.80 m/s^2 . From that data, calculate the mass of the Earth
- <https://youtu.be/DJ1QA1pQ9yQ>

Acceleration of Gravity – Example 1



2. The International Space Station orbits at an altitude of 400 km above the surface of the Earth. What is acceleration of gravity “g” on the Space Station

- https://youtu.be/Sa7shdPBF_4

Acceleration of Gravity – Example 2



Homework

The acceleration of gravity on the surface of Mars is 3.71 m/s^2 . The radius of Mars is $3.40 \cdot 10^6 \text{ m}$.

- a) From that data, calculate the mass of Mars
- b) At what distance from the planet will the acceleration of gravity be 1.00 m/s^2 ?

- Try to solve the problem yourself, then watch the solution video:
- <https://youtu.be/grxSqYlaAHg>



That's it!

