

Modern Physics Unit

- 1 week of teaching material
- 2 Lessons in Office and Google Format and Daily Teaching Schedule
- 1 Unit Test with Answer Key
- 1 Quiz with Answer Key

Students will learn about:

- Classical vs. Modern Physics
- Einstein's Special Theory of Relativity
- Michelson and Morley
- Postulates of Special Relativity
- Time Dilation & Length Contraction
- Quantum Theory
- Max Planck and Energy Quantum
- Photoelectric Effect and Equation
- Conservation of Energy
- Applications of the Photoelectric Effect

Modern Physics and the Photoelectric Effect

Lesson Topics Include:

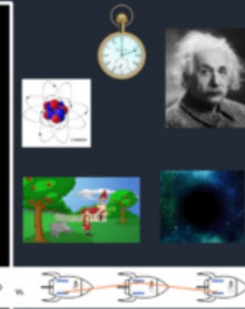
- Classical Physics
- Modern Physics
- Quantum Theory
- Max Planck and Energy Quantum
- Photoelectric Effect and Equation
- Conservation of Energy
- Applications of the Photoelectric Effect



SENIOR PHYSICS

Frames of Reference and Relativity

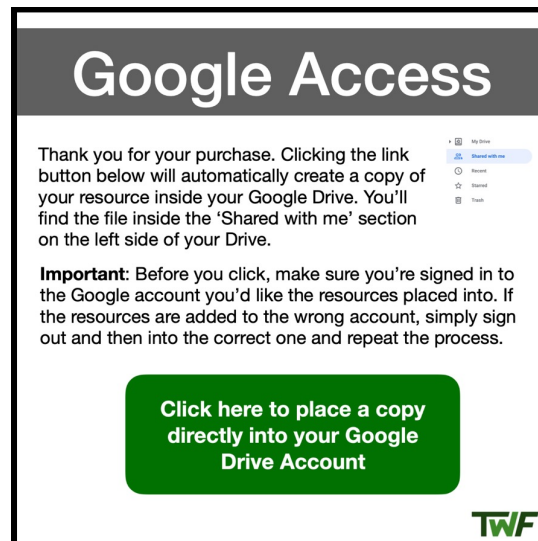
- Newtonian Physics
- Problems with Classical Physics
- Modern Physics & Einstein's Special Theory of Relativity
- Michelson and Morley
- Postulates of Special Relativity
- Time Dilation
- Length Contraction
- Practice Questions



TWF

Office and Google Versions

- The lessons inside this unit come in both PowerPoint and Google Slides format
- Each lesson also contains an Exit Ticket that you can use to check for student understanding
- Your resource is perfect for distance learning and integrates seamlessly with Google Classroom as I've included a link that will automatically create a copy of the resources and put them directly into your Google Drive with one click

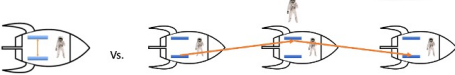


Thank You For Your Interest

Inside the Unit

- 1 week of teaching material
- 2 lessons
- Office and Google versions of EACH lesson
- Teacher and student versions for each lesson
- Many videos and simulations embedded into the slides
- Student notes in Word and Google Doc

Time Dilation 



• Notice that for someone viewing the light from outside the spaceship, the light needs to take a longer path (orange line) therefore, its distance travelled (d) is increased.

• Since 'c' is constant and d increases, t must increase as well

$$c = \frac{\Delta d}{\Delta t}$$

Time Dilation 



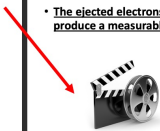
• Notice that for someone viewing the light from outside the spaceship, the light needs to take a longer path (orange line) therefore, its distance travelled (d) is increased.

• _____

$$c = \frac{\Delta d}{\Delta t}$$

The Photoelectric Effect

- Photoelectric
Photo $\rightarrow$ photons Electric $\rightarrow$ produces electricity
- Light is shown on the negatively charged, photosensitive metal surface which ejects electrons into a vacuum space
- The ejected electrons are attracted to the positive plate and produce a measurable current



Photoelectric Effect Simulation

Videos embedded directly into the slides. One-click access.