Physics Essentials
Waves

Physics Essentials Do Now

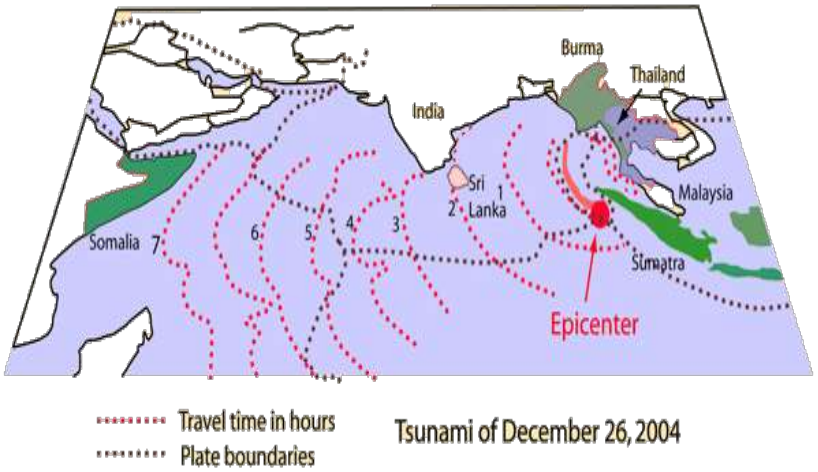
Do Now Question: What is a wave? What are some examples of waves? Draw or explain.

Physics Essentials Phenomenon

What is happening here?

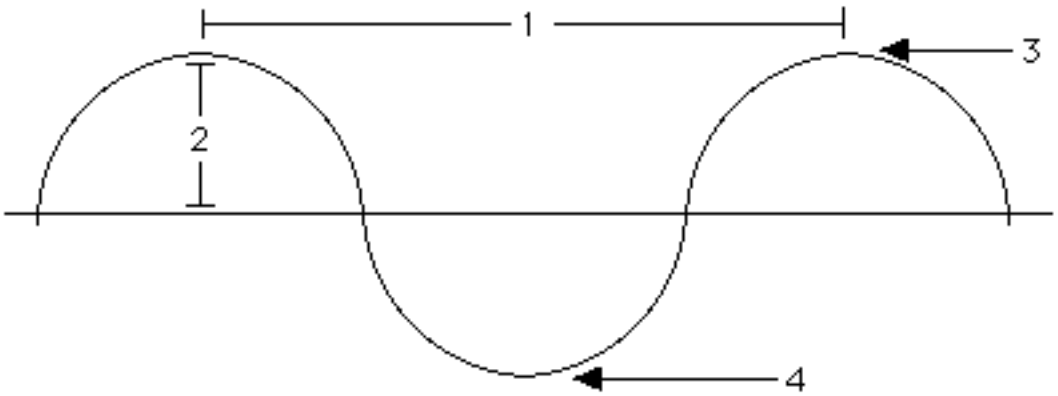
Physics Essentials Do Now

Question: How can we use what we know about waves to prevent loss of life from a tsunami?



Physics Ess Do Now

Label the wave with the vocabulary: **trough, crest, wavelength, amplitude**



Today's Schedule

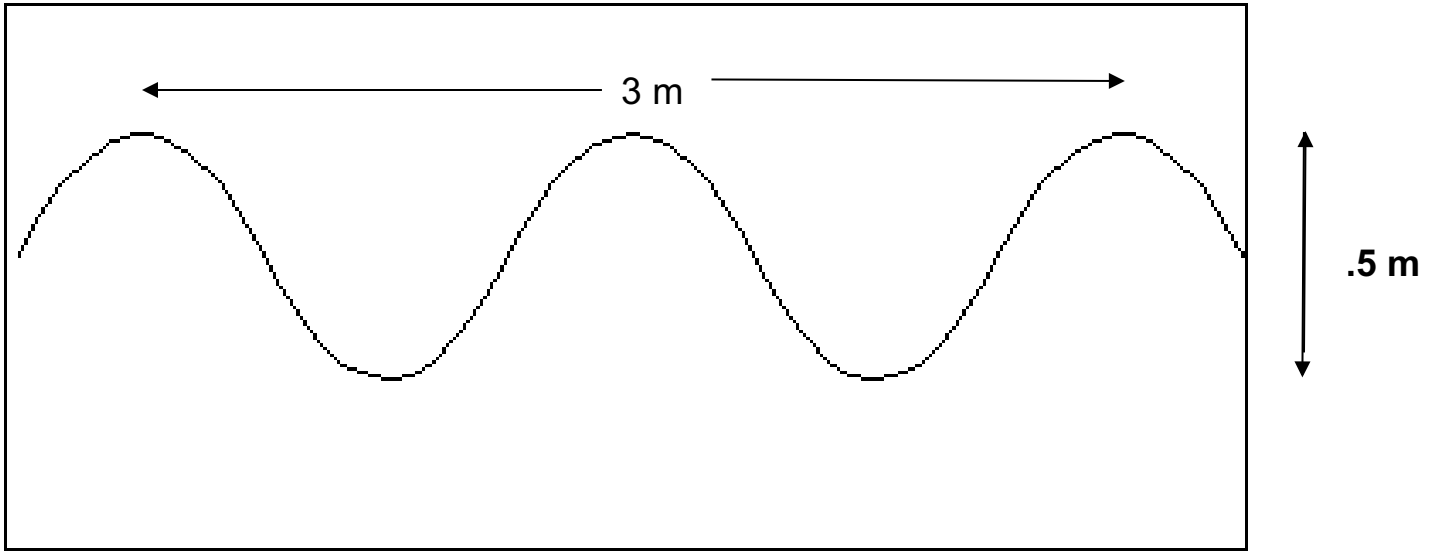
1. Organize Binder
2. What is Modeling
3. Waves Phenomenon
4. Pair Up (Physics Buddy!)
5. Class Discussion on Models

Organize Waves Unit Binder

1. Calendar
2. Waves Tutorial
3. Waves Mini Lecture Notes

Phenomenon

What is the amplitude of the wave? Wavelength? Number of waves?



Wave Stations

- Travel with your physics buddy
- Only one group at a station
- Take your data, ask question, whisper only

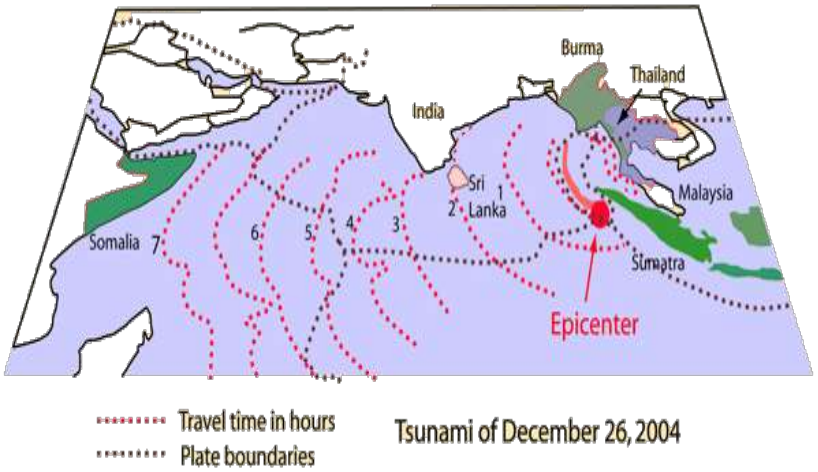
Physics Essentials Friday December 6, 2019

Agenda:

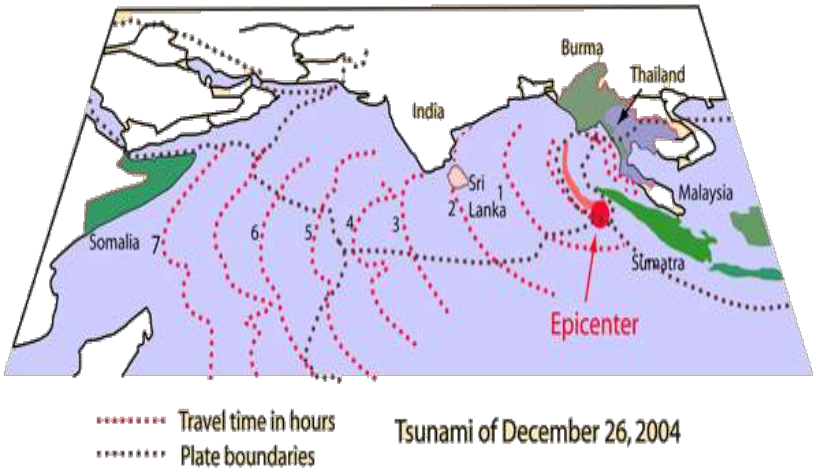
- No Do Now
- Go over Wave Stations
- Tsunamis

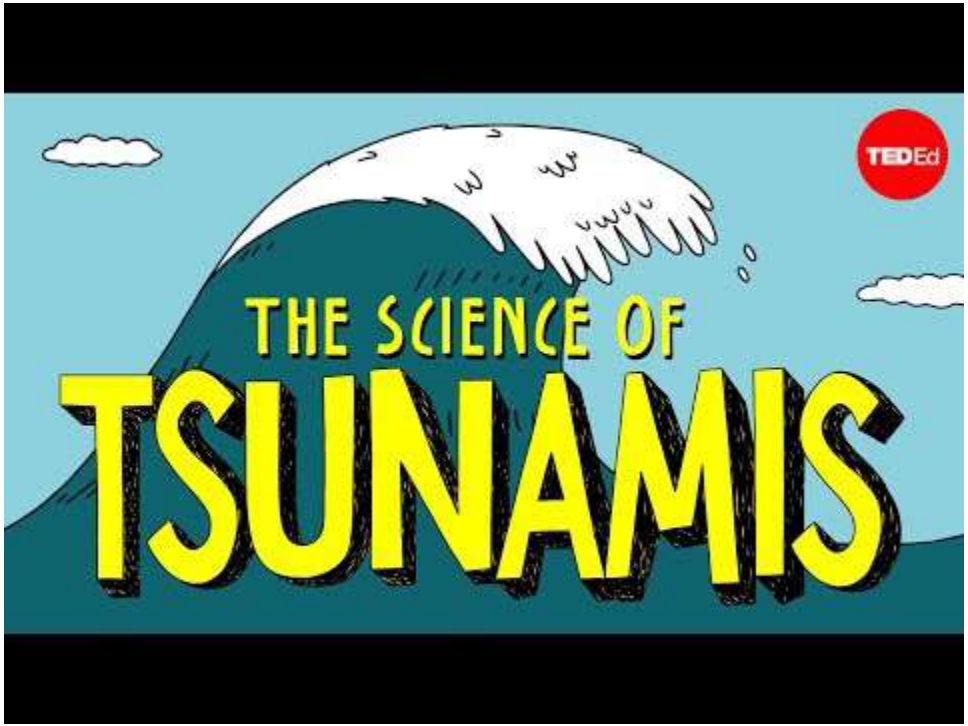
Physics Essentials Do Now

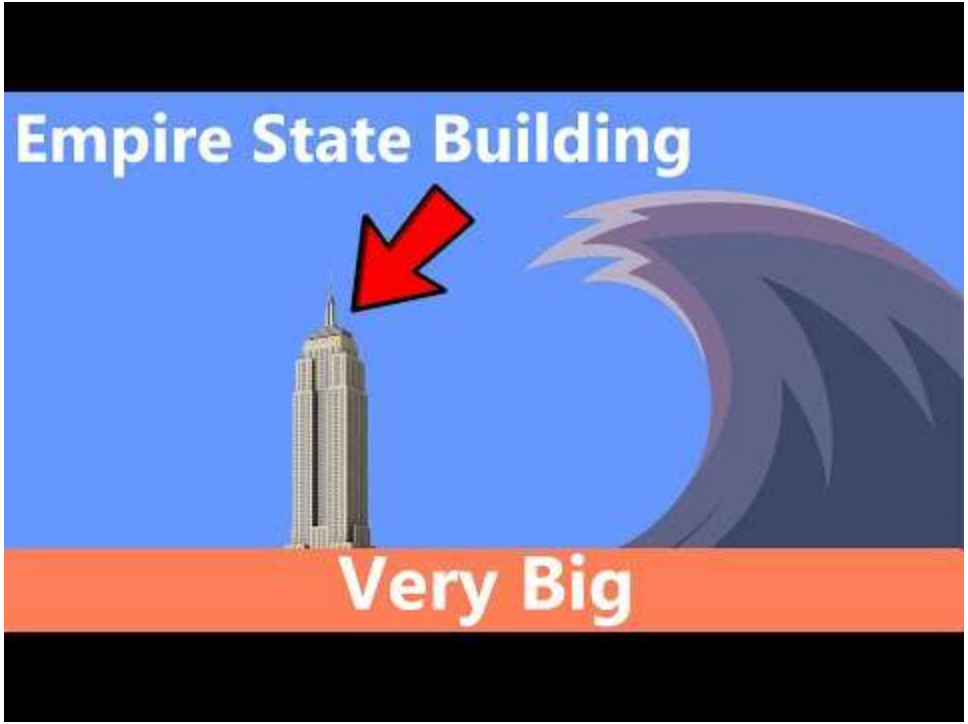
Question: What do you know about tsunamis?



Question: How are tsunamis related to what we are learning about in class?




TEDEd
THE SCIENCE OF
TSUNAMIS


Empire State Building
Very Big

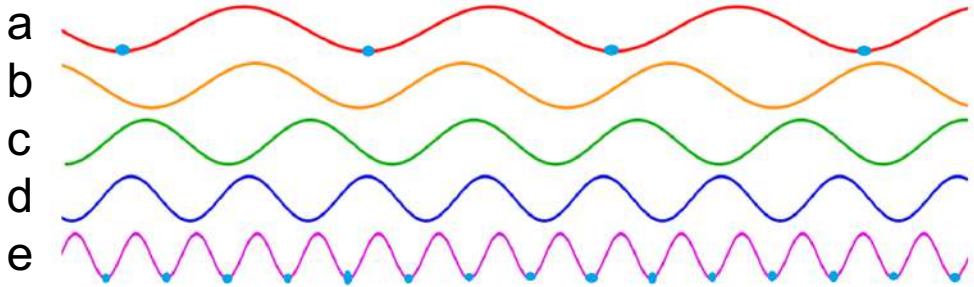
Organize Waves Unit Binder

1. Do Now
2. Calendar
3. Waves Tutorial
4. Waves Mini Lecture Notes
5. Wave Stations
6. Wave Practice (2)

In Class Work Expectations

Physics Essentials Do Now

1) Rank the waves from shortest to longest wavelength.
2) Rank the waves from highest to lowest frequency.
3) As frequency increases, what happens to the wavelength?
4) As frequency decreases, what happens to the wavelength?



Organize Waves Unit Binder

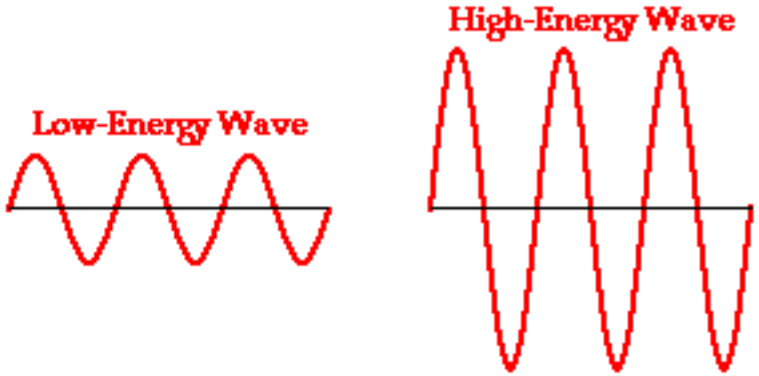
1. Do Now
2. Calendar
3. Waves Tutorial
4. Waves Mini Lecture Notes
5. Wave Stations
6. Wave Practice (2)
7. Sound Webquest

What is pitch?

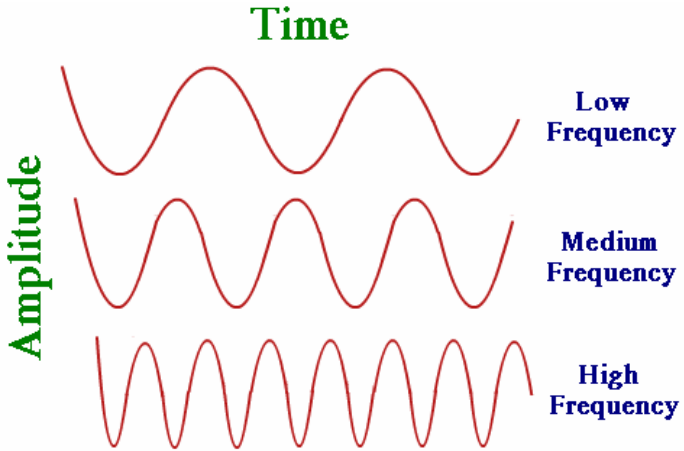
What happens when we increase the pitch of the wave?

Stations

- Read the directions
- For some stations there are more than one experiment
- Answer all questions
- Do not talk to other groups



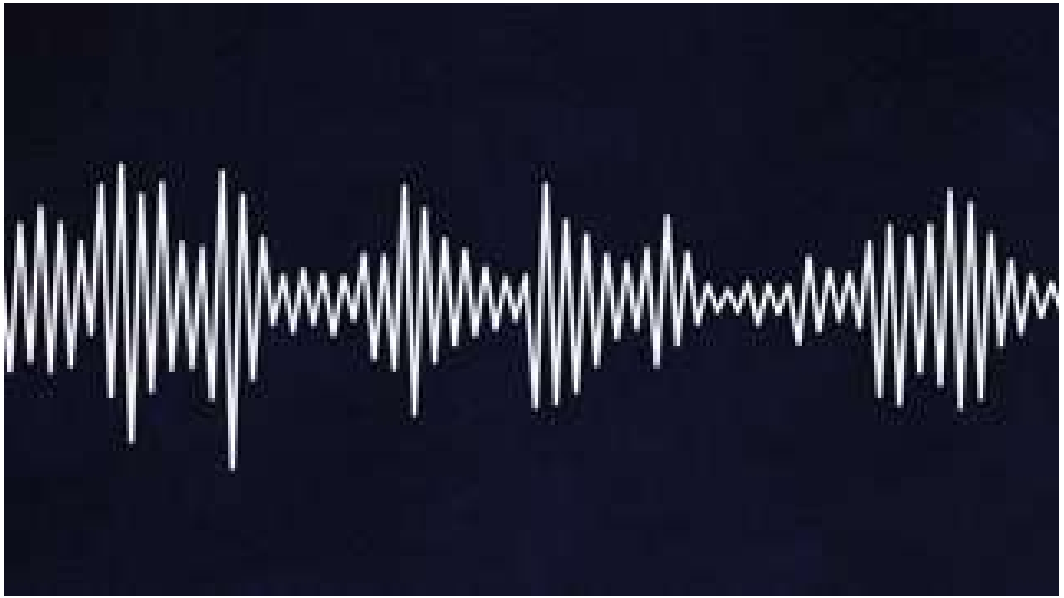
The amplitude of a wave is related to the energy which it transports.



Phys Ess Do Now

What sound wave would be the loudest?

If they all have the same frequency, what would happen to the sound?



Physics Essentials Do Now

List as many words as you can about sound.

https://academo.org/demos/virtual-oscilloscope/

Sound Stations

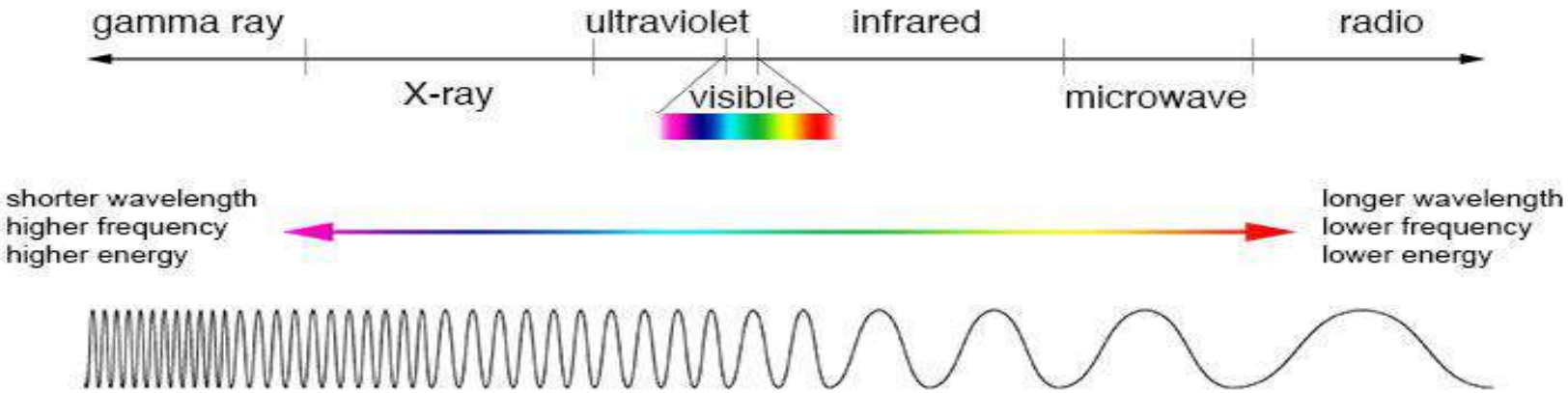
- What happened to the tuning fork near water and salt? Draw a picture too.
- When can you hear yourself clap best? Why do you think that?
- What happened to sound as the string got longer? As the rubber band got thicker?
- What sounds created vibrations in your throat? Which ones didn’t?
- What happens to the pitch when you decrease the amount of water?

Organize Waves Unit Binder

1. Do Now
2. Calendar
3. Waves Tutorial
4. Waves Mini Lecture Notes
5. Wave Stations
6. Wave Practice (2)
7. Sound Webquest
8. Sound Stations

Physics Essentials Do Now

Look at each part of the Electromagnetic Spectrum. Where have you heard some of the words before? Give specific examples.



Turn in Do Now Sheet

Open Binder/Folder Quiz!

Turn in to the Turn In Bin when done :)

EM Spectrum Technology Choice

Physics Essentials Do Now

Take out your Packet for your EM Spectrum Mini Poster

Questions:

1) What part of the EM Spectrum are you researching?
2) Is it high, low or medium frequency?
3) What other parts of the EM Spectrum is it near?
4) How it is used in everyday life?

Physics Essentials Do Now

What part of the EM spectrum are you most interested in learning about today? Why?

Take out your EM Spectrum Mini Project.

Gallery Walk

- Place your mini poster in the appropriate place in the lab.
- You should start at your own and rotate around the room to fill in your gallery walk sheet.
- Your voice should be at a whisper.

Physics Essentials Do Now

Use your EM Spectrum Gallery Walk.

1) What EM Waves are used in the medical field?
2) What part of the EM Spectrum is the most dangerous to humans?
3) What part of the EM Spectrum can we only see with our eyes?
4) Besides visible, what part of the EM Spectrum do you think is most useful to us? Why?

Agenda

- Do Now
- Physics Buddies
- Physics Buddies Pledge
- Go over EM Spectrum Gallery Walk
- EM Spectrum Assessment Revise
- Wavestown Activity

Physics Buddies

- Kaleb, Kimora
- Rian, Shania
- Autry, Nylah, Kadeejah
- Donny, Lizbet
- Xzavier, Trent
- Kionna, Kevin
- Ariyana, Sabastian
- Jaden, Cole
- Dalton, April
- Jacob, Cheyanne

Physics Essentials Wednesday

1) Do Now
2) Quick Quiz- Open Notes
3) Organize Binder
4) Complete EM Spectrum Gallery Walk if needed
5) Color Vision PhET

Do Now

Name all the colors you know!

Organize Waves Unit Binder

1. Do Now
2. Calendar
3. Waves Tutorial
4. Waves Mini Lecture Notes
5. Wave Stations
6. Wave Practice (2)
7. Sound Webquest
8. Sound Stations
9. EM Spectrum Packets (Notes)
10. EM Spectrum Gallery Walk
11. Wavestown


PURPLE DOESN'T
EXIST
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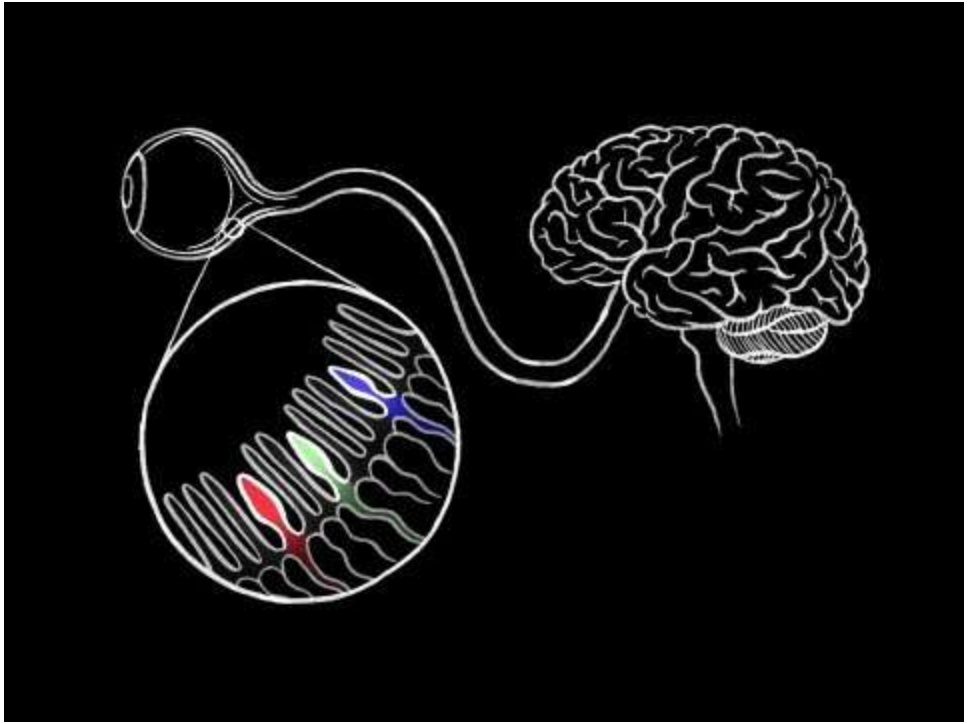
Schedule in Lab

- Take the Colorblind Test
- Answer the question on Google Classroom
- Complete PhET Color Vision

Physics Essentials Do Now

1) What color do you think the dress is? (Please write it down)
2) Some people see white and gold and others see blue and black… why do you think this is? Think about shadows and how we see color.
3) Do you think we all see color the same?



“He only sees her through rose colored glasses”

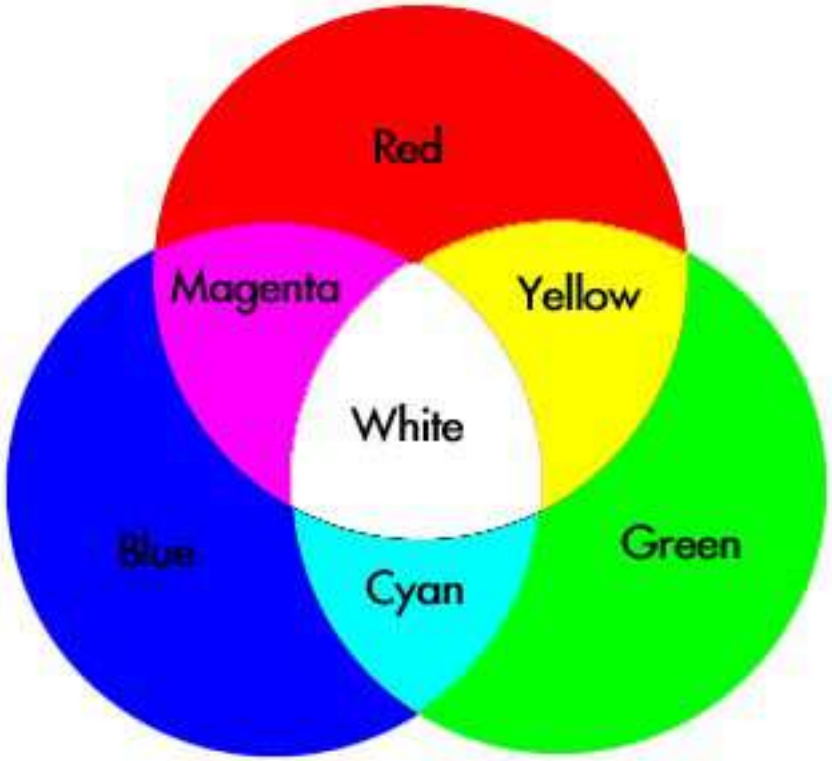
What color would a blue t-shirt appear through rose colored glasses?

Filter Exploratory Lab

Brain Games- Color

Physics Essentials Do Now

1) What are the primary colors of light?
2) What does red and green make?
3) What does red and blue make?
4) White is combination of _____ colors.



Physics Buddies

- Kaleb, Kimora
- Rian, Shania
- Autry, Nylah, Kadeejah
- Donny, Lizbet
- Xzavier, Trent
- Kionna, Kevin
- Ariyana, Sabastian
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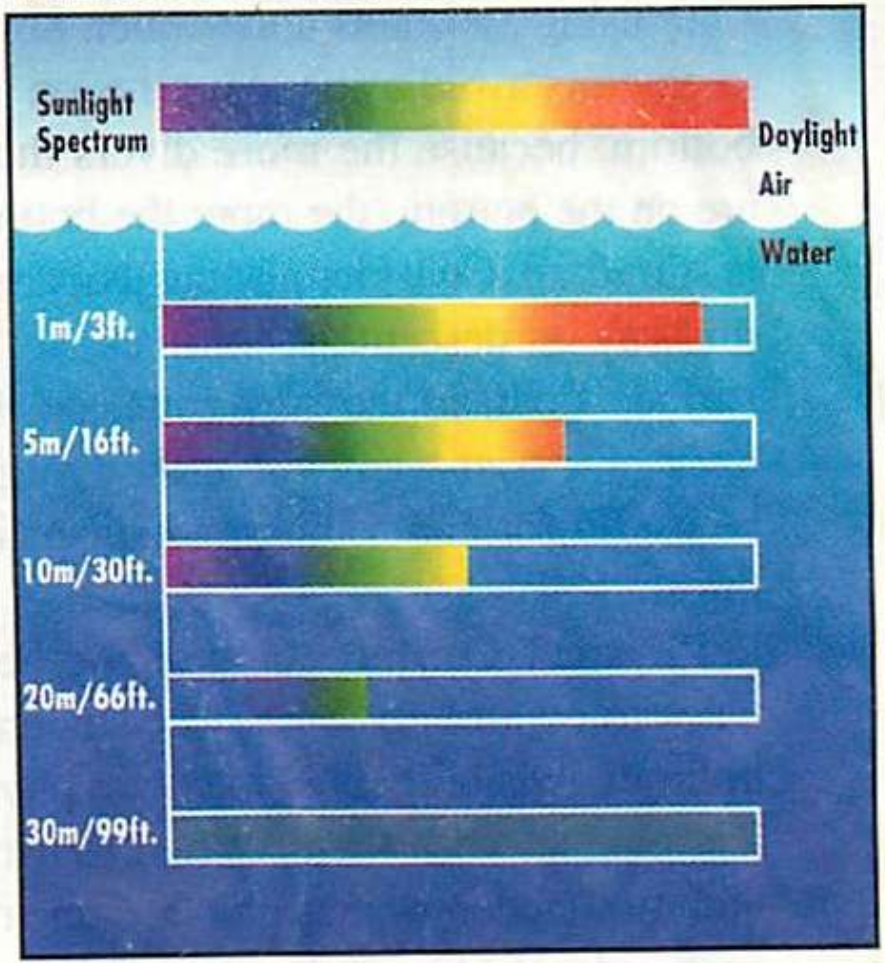
What is happening to the color? Why?

WHERE DO THE COLORS GO?



Light Assessment

Take out PhET Color Vision and Color Activity from yesterday.

Brain Games- Color

Do Now

Why does the pencil look like this in water?

Binder Check MONDAY!

1. Do Now
2. Calendar
3. Waves Tutorial
4. Waves Mini Lecture Notes
5. Wave Stations
6. Wave Practice (2)
7. Sound Webquest
8. Sound Stations
9. EM Spectrum Packets (Notes)
10. EM Spectrum Gallery Walk
11. Color PheT
12. Wavestown
13. Color In Class Activity
14. Light Webquest
15. Light Stations

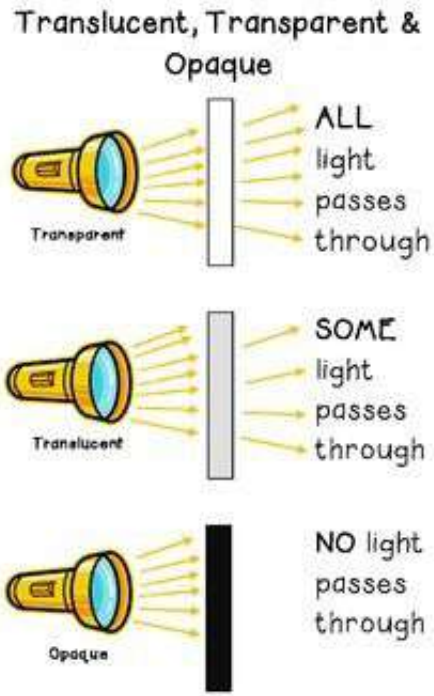
Light Webquest

Goal: What vocabulary do we need to study light?

Physics Essentials Do Now

For the following objects, determine whether they are **transparent, translucent or opaque:**

- Book
- Glass
- Milk
- Paper
- Stained Glass Window
- Wall



Exploration Light Stations

- Stations: 5 minutes each (I am timing)
- We are working on this today and Friday.
- BE CAREFUL WITH THE GLASS
- Explore! You are here to learn!

Test and Binder Check Friday!

Do Now

Look at the mirrors up front.

How do you see yourself? Which is concave? Convex?

Turn In Do Now

Use your Light and Sound Stations

Draw a picture of...

1. Refraction
2. Reflection
3. Transparent Objects
4. Translucent Objects
5. Opaque Objects
6. Diverging/Converging Lens
7. Convex/Concave Mirrors\
8. Object under water


RAINBOWS


Sc

How do you make a rainbow?

- What supplies?
- What set up?

Let’s Try It!

Phys Ess Do Now

Draw how light creates a rainbow.

Physics Essentials Phenomenon

What is happening here?

Redo Phenomenon

- Draw what you see
- Use labels to represent what you see
- Use vocabulary from this unit
- Explain **why** you believe the glass can break

Binder Check

- Please come up when you are called. We will also go over your grade and what you need to turn in!

Physics Essentials December 19, 2019

- Agenda
- Do Now
- Work on EM Spectrum Project
  - Supplies are at the front
  - Due tomorrow by the end of class