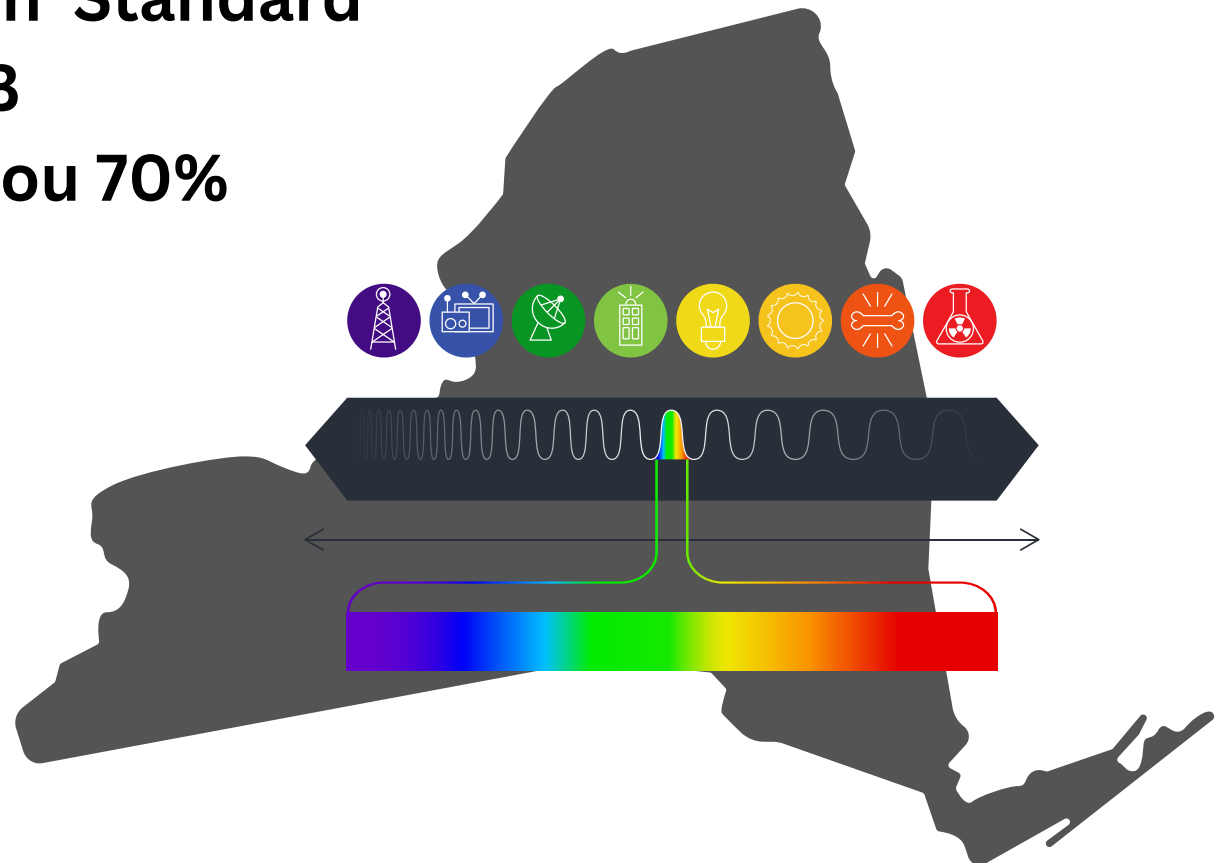


New York State P-12 Science Learning Standards (NYSSLS)

MS. Waves and Electromagnetic Radiation

- ✓ Complete Standard for New York Middle School - Waves and Electromagnetic Radiation Standard
- ✓ MS-PS4-1, PS4-2, PS4-3
- ✓ The Bundle will SAVE you 70%



UPGRADE to the Bundle



This Bundle:

- Get immediate access to my **COMPLETE** New York State Middle School Curriculum
- Every standard covered at a **HUGE DISCOUNT**

New York Middle School Science Curriculum

New York State P-12 Science Learning Standards (NYSSLS)

- ✓ Standards are directly aligned to New York State Middle School Science Standards according to the New York State Education Department
- ✓ The Bundle will SAVE you 80%



Click here to have a look

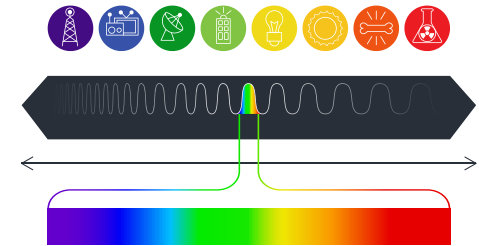
Resources Included

MS-PS4-1

- Digital vs Analog Signals for Communication – Lesson
- How Waves Are Used for Communication - Reading

MS-PS4-2

- Light – Lesson
- Lasers, Absorption and Transmission – Lesson
- Why is the Sky Blue - Reading
- Crash Course Light - Video Worksheet
- Light and Optics Word Search and Scramble
- Bill Nye Light and Color - Video Worksheet



MS-PS4-3

- Waves An Introduction – Lesson
- Experimenting with Waves – Activity
- Crash Course Traveling Waves - Video Worksheet
- Crash Course Sound - Video Worksheet
- Earthquakes - Reading



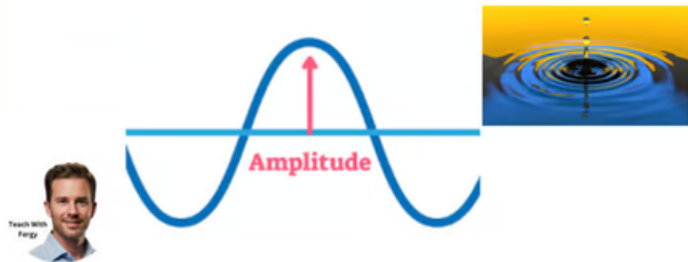
Bundles Included

NGSS MS-PS4-1

Curriculum Bundle

Waves Introduction: Energy, Amplitude, and Modeling

- ✓ 1 Lesson, 4 Activities
- ✓ Everything You Need to Teach NGSS MS-PS4-1

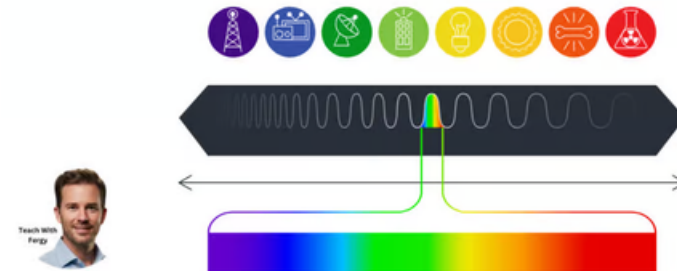


NGSS MS-PS4-2

Curriculum Bundle

Light Wave Behavior - Reflection, Absorption & Transmission

- ✓ 2 Lessons, 4 Activities
- ✓ Everything You Need to Teach NGSS MS-PS4-2



NGSS MS-PS4-3

Curriculum Bundle

Digital vs Analog Signals - Wave Communication Data & Transmission

- ✓ 1 Lesson and 1 Activity
- ✓ Everything You Need to Teach NGSS MS-PS4-3



Everything You Need to Teach Middle School Waves and Electromagnetic Radiation in New York State using NYSSLS

Complete Lessons

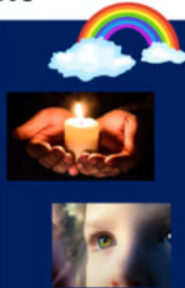
Digital vs Analog Signals for Communication 6th, 7th, 8th Grade Lesson

- ✓ **Comprehensive Content Overview** – Covers what a signal is and how digital and analog signals are different. It also talks about how signals are transmitted as well as which signal is preferred.
- ✓ **Student-Friendly Format** – Clear visuals and comparisons support understanding of complex concepts.



Light

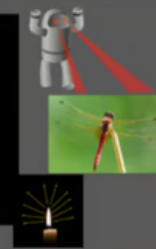
- Overview of light
- Properties of light
- Luminous and non-luminous objects
- History of light
- The electromagnetic spectrum
- Prisms
- Colour & Colour Blindness



This digital presentation includes both Google and Office resources and is [Google Classroom Ready](#)

Absorption, Reflection and Transmission of Light

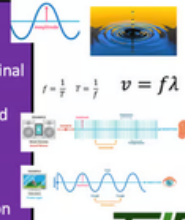
- Light Rays
- Geometric Optics
- Reflection
- Transmission and Refraction
- Absorption
- Categories of light
- Lasers



This digital presentation includes both Google and Office resources and is [Google Classroom Ready](#)

Waves Introduction

- What Waves Are
- Types of Waves
- Transverse vs. Longitudinal Waves
- Frequency, Hertz, Period
- Amplitude
- Crests, Troughs, and Wavelength
- Universal Wave Equation



This digital presentation includes both Google and Office resources and is [Google Classroom Ready](#)

Engaging Activities

Reading Comprehension Passage & Questions

Earthquakes

6th, 7th, and 8th Grade Science

- ✓ No Prep, Ready-to-Use Resource in Google and Office Format
- ✓ Includes Comprehension and Extension Questions



Reading Comprehension Passage & Questions

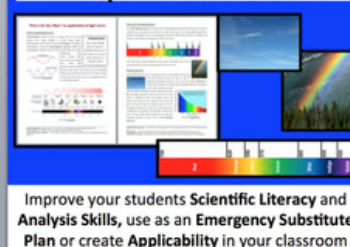
How Waves Are Used for Communication

- ✓ No Prep, Ready-to-Use Resource in Google and Office Format
- ✓ Includes Comprehension and Extension Questions



8th Grade and Up Science

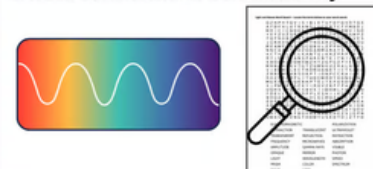
Why is the Sky Blue? An application of light waves Scientific Reading Comprehension Article



Improve your students **Scientific Literacy and Analysis Skills**, use as an **Emergency Substitute Plan** or create **Applicability** in your classroom

Light and Waves Word Search and Scramble

- THREE Activities in One! **TWF**
1. Basic 25-Term Word Search
 2. Scrambled Words Word Search
 3. Word Scramble and Define Activity



The Standard is Explained and the Resources it Incorporates are Outlined

MS. Waves and Electromagnetic Radiation – New York State – Middle School

Note: There are resources that overlap between the standards. Simply choose the order that best fits your classroom. Also, there are more resources here than you will most likely decide to use. I have provided extra so you can make the best decision for your students on what is best to include.

MS PS4-1: Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.

Emphasis is on describing waves with both qualitative and quantitative thinking. *Assessment Boundary:* Assessment does not include electromagnetic waves and is limited to standard repeating waves.

Resources:

- Waves An Introduction – Lesson
- Experimenting with Waves – Activity
- Crash Course Traveling Waves - Video Worksheet
- Crash Course Sound - Video Worksheet
- Earthquakes - Reading

MS PS4-2: Develop a model to describe that waves are reflected, absorbed, or transmitted through various materials.

Emphasis is on both light and mechanical waves. Examples of models could include drawings, simulations, and written descriptions. *Assessment Boundary:* Assessment is limited to qualitative applications pertaining to light and mechanical waves.

Resources:

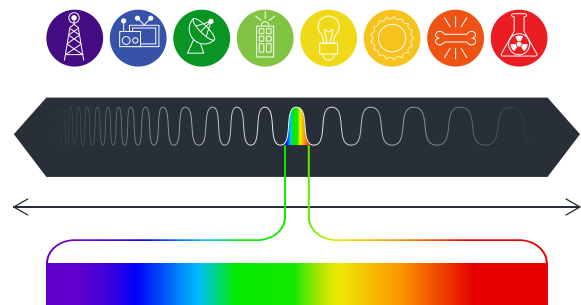
- Light – Lesson
- Lasers, Absorption and Transmission – Lesson
- Why is the Sky Blue - Reading
- Crash Course Light - Video Worksheet
- Light and Optics Word Search and Scramble
- Bill Nye Light and Color - Video Worksheet

MS PS4-3: Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.

Emphasis is on a basic understanding that waves can be used for communication purposes. Examples could include using fiber optic cable to transmit light pulses, radio wave pulses in wifi devices, and conversion of stored binary patterns to make sound or text on a computer screen. *Assessment Boundary:* Assessment does not include binary counting. Assessment does not include the specific mechanism of any given device.

Resources:

- Digital vs Analog Signals for Communication – Lesson
- How Waves Are Used for Communication - Reading



Who is this Bundle for?

- Teachers who teach middle school science in **New York State** and use **NYSSLS**
- Teachers who want multiple resources at their fingertips including lessons and a variety of activities, in order to meet the standard
- Teachers who don't have time to develop their own resources or organize what to teach and when

