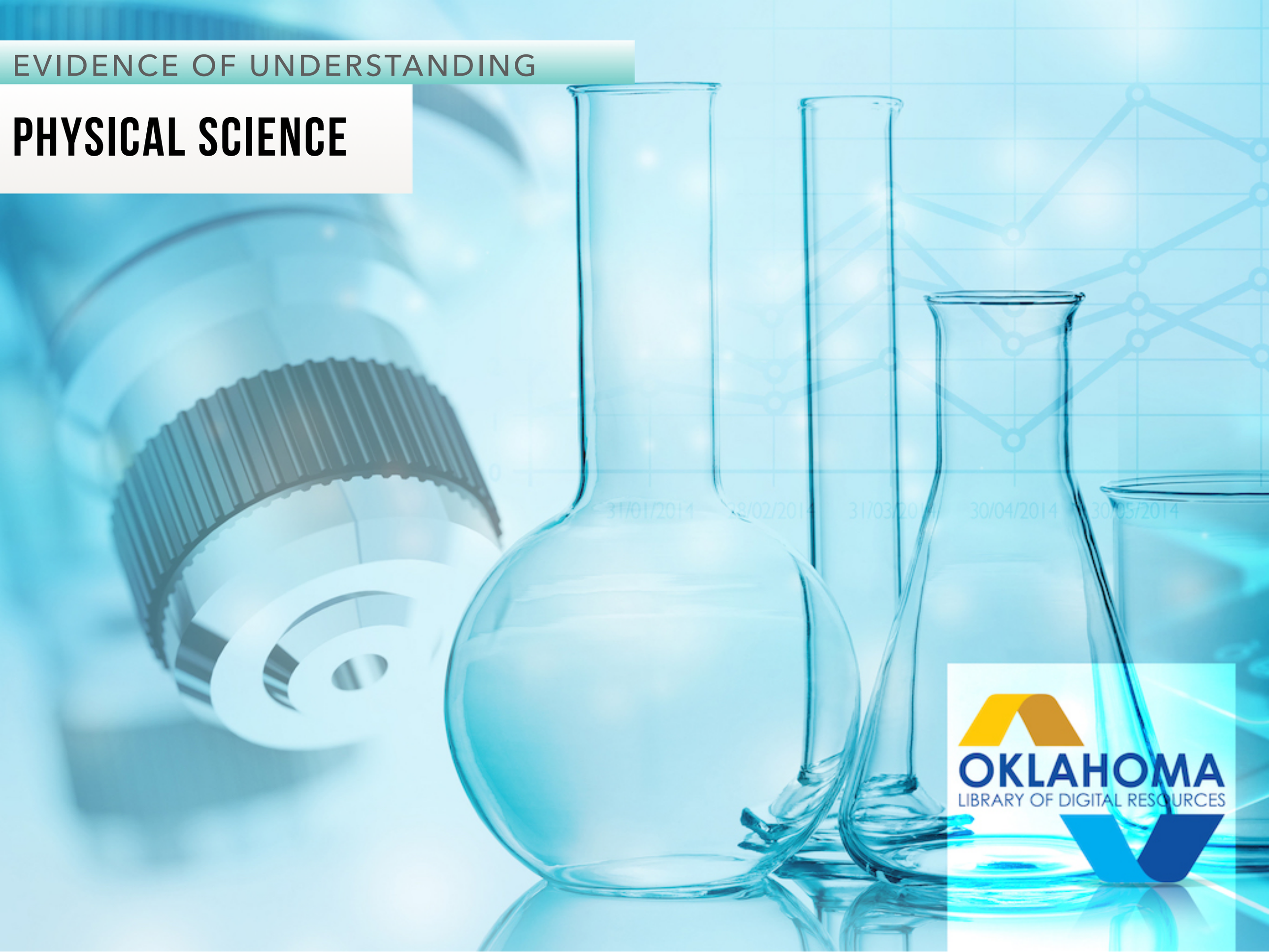
EVIDENCE OF UNDERSTANDING

PHYSICAL SCIENCE



OKLAHOMA
LIBRARY OF DIGITAL RESOURCES

The Oklahoma Library of Digital Resources is an innovative initiative to provide Oklahoma educators with high-quality, interactive teaching resources.

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Thank you to the following educators for their work in curating digital resources:

Eman Beck, Norman Public Schools

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GETTING TO KNOW OKLDR

WHO IS OSSBA?

The Oklahoma State School Boards Association (OSSBA) works to promote quality public education for the children of Oklahoma through training and information services to school board members. The Association is a leader among leaders in Oklahoma education and a visible presence in the local school districts and throughout the state.

The OSSBA was created in 1944 to provide support for local school board members with a variety of information, assistance, and representation services. OSSBA reaches every school board member through training opportunities. It creates and encouraged effective leaders to promote public education and cultivates productive alliances with governing bodies. OSSBA trains school board members to participate in an effective and supportive manner to provide direction for educational innovation and improves public perception of education in Oklahoma by sharing strategies and tools with our member school districts to focus on the success of Oklahoma public education.

OSSBA works with school boards to demonstrate the impact they have on student achievement. We work to provide meaningful two-way communication of advocacy, services, and training activities to local boards of education and their stakeholders. Other services we provide that have a direct impact on student achievement include strategic planning and superintendent searches. Our legal team provides free legal information to the school districts.

WHY OKLDR?

In the summer of 2016, OSSBA set out on a journey assist teachers in the integration of technology into their classrooms. The Oklahoma Library of Digital Resources (OKLDR) became a collection of digital content resources selected by Oklahoma educators to support the Oklahoma Academic Standards. The resources were curated by teachers from school districts across Oklahoma. Each collection contained a variety of learning resources, such as videos, apps, pdf documents, and websites, and are designed so that teachers can then build their lesson plans. The resources helped bridge the digital equity gap among students while helping schools make the most of limited resources.

After collaborating with educators, school and district leaders for a couple of years, OKLDR has been enhanced in the following ways:

- Resources are now an Open Education Resource (OER) "book" format, making it easier to use and accessible on multiple devices.
- Resources map to ESSA expectations for evidence of student understanding and students' mastery of the academic standards.
- Tools are now agnostic and can be used on multiple devices.
- Lessons are now focused on student engagement through the use of technology. The first OKLDR version focused on teacher resources. **This is a major change**.
- To prioritize student learning, teacher resources are now located at the back of each book.

HOW TO USE THIS BOOK

The Oklahoma Academic Standards for this lesson are grouped together by key topics. Sometimes you will see only one standard, but other times you will see a grouping of standards.

Evidence of Understanding is the key. This is the concept you want your students to master that reinforces the standards. Mastery means deeper understanding, not just "skim the surface" learning.

Digital Tools are the recommended applications and/or tools for the lesson. Think of this element as the "supplies box."

In Practice is a suggested activity to engage the students to demonstrate mastery of the standard. You will notice that this is just one suggested lesson, and sometimes there might be a second lesson. The suggested lesson, developed by Oklahoma teachers, is meant to give you a starting point. You might decide to use the lesson or it might give you an idea of something else you could do to teach the concept.

MOVING FORWARD

As you can see the OKLDR book has been designed to inspire educators to have students demonstrate their understanding of the Oklahoma Academic Standards through the use of technology as a productivity tool. While educators have limited time in the day to plan and research high quality content, this book is a jumping off point, with suggested peer-reviewed activities and resources.

While you might encounter extra white space in the book, it is intentional for growth. As you integrate the activities into your lessons, you are encouraged to send us student work samples that might be included in the book, as well as additional activities and resources that could be included in future revisions.

Next Steps:

- We would love to add samples of student work to the activities, so please send the work to: okldr@ossba.org.
- If you would like to be involved in future course creation, or know teachers who would like to be involved, please contact us at: okldr@ossba.org.
- See anything that needs to be changed or enhanced? Contact us at: okldr@ossba.org.

SCIENCE/MATH BASICS

LAB SAFETY

As of June 1, 2015, the Hazard Communication Standard (HCS) will require pictograms on labels to alert users of the chemical hazards to which they may be exposed. Each pictogram consists of a symbol on a white background framed within a red border and represents a distinct hazard(s). The pictogram on the label is determined by the chemical hazard classification. Proper lab safety protocol is important in all science classes. Before performing any labs, teachers should review lab safety and the students must demonstrate understanding of protocol.

Evidence of Understanding

- Students will demonstrate mastery of the Chemical Safety Data Sheets (SDS-GHS) system by using appropriate safety precautions when working in the laboratory environment.

Digital Tools

- *Video Editor-* Clips, WeVideo*, Do-Ink*, iMovie
- *Content Video - Flinn Scientific: Laboratory Safety Challenge*
- *Content Application* - Chemical Safety Data Sheets App
- *Student Response* - Flipgrid*
- *Sketch Application* - Sketches School, ibis, Absolute Board, Google Draw*, Notability

In Practice

- Students will observe and practice proper lab safety skills to ensure safety in the lab during all activities.
- Student groups will create videos using a video editor demonstrating both proper and improper practice of lab safety guidelines.
- Students will then post on a student response application to give feedback on what type of practice the videos represent.
- Students may also indicate the safety rule number the videos depict.
- Students can also create digital notes using a sketch application or interactive whiteboard application to sketch lab equipment and write their uses for further reference.

MEASUREMENTS & CALCULATIONS

How to perform measurements in chemistry, accurately report precision, and how to convert between units. teachers should review practices in obtaining accurate measurements. Students should get comfortable using digital means to perform simple calculations and conversions.

Evidence of Understanding

- Students will perform calculations and take appropriate measurements using a variety of tools.
- Students will use the Unit Converter App or other similar app to convert from one unit to another.
- Students will create videos that show the examples of and differences between accuracy and precision. Videos will distinguish between and provide examples of both accuracy and precision.

Digital Tools

- Content Application - Unit Converter App (Apple) , Unit Converter Website
- *Content Video* - YouTube: Scientific Notation, YouTube: Significant Figures, YouTube: Ted-ED: Accuracy vs. Precision iMovie
- *Video Editor*- Clips, WeVideo*, Do-Ink*, iMovie
- *Device Camera*
- *Calculator - Online Calculator*, Simple Online Calculator**

In Practice

- Students will use a calculator to perform calculations.
- Students will use a Unit Converter App to convert from one unit of measurement to another.
- Students can create videos using the video editing app or device camera to make videos showing different examples of accuracy and precision.

DIMENSIONAL ANALYSIS

Dimensional analysis is a method for solving problems that contain different units of measurement. The students multiply amounts by "one" allowing the amounts to be converted into the desired unit of measurement.

Evidence of Understanding

- Students who demonstrate understanding can analyze and solve problems by utilizing dimensional analysis.

Digital Tools

- *Content Video* - Dimensional Analysis Videos*
- *Video Editor*- Clips, WeVideo*, Do-Ink*, iMovie

In Practice

- Students will watch the content videos and create their own dimensional analysis problem and solve the problem.
- The students will create a tutorial video demonstrating both their problem and the solution.

DENSITY

Density is the relationship between an object's mass and its volume.

Evidence of Understanding

- Students who can demonstrate understanding are able to accurately calculate the density of an object or can solve problems related to density.

Digital Tools

- *Website* - "Eyedropper Hydrometer Experiement*"
- *Graphing Tool* - Create a graph*, Desmos Graphing Calculator
- *Word Processor* - Pages, Google Docs*, Microsoft Word
- *Sketch Application*- Sketches School, ibis, Absolute Board, Google Draw*, Notability, Sketchbook*

In Practice

- Students will perform the Eyedropper experiment and record their data using an online graphing tool.
- Teacher can then show the students their results for comparison purposes and class discussion of results.

CHEMISTRY

ATOMIC STRUCTURE

PS.PS1.1: Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

PS.PS1.2: Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, knowledge of the patterns of chemical properties, and formation of compounds.

Evidence of Understanding

- Students who can demonstrate understanding can use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
- Students who can demonstrate understanding can construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, knowledge of the patterns of chemical properties, and formation of compounds.

Digital Tools

- *Content Application* - Nuclear App , *Nova: Hunting the Elements App**
- *Presentation* - Keynote, Google Slides*, Microsoft PowerPoint

In Practice

- After discussion of atomic structure, students can experiment with the Nuclear App or Nova: Hunting the Elements download. Using the app and download game, the students can "create" new elements by adding and subtracting protons, electrons, and neutrons.
- The students can see how the elements populate the periodic table and the properties of the elements.
- The students should select one of their created elements to give a presentation to the class by screen casting.

PERIODIC TABLE AND TRENDS

PS.PS1.1: Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

Evidence of Understanding

- Students who can demonstrate understanding can use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms

Digital Tools

- *Content Application* - Periodic Table Project
- *Content Website* - *Periodic Table**, *Periodic Table Game**, Electron Configuration*
- *Sketch Application* - Sketches School, Absolute Board, Google Draw*, Sketchbook*

In Practice

- Students can explore the app the Periodic Table Project or play the Periodic Table Game to learn more about elements, and the arrangement of electrons outside the nucleus and how this information can be used to predict properties of elements. The "Periodic Table" link will take students to the properties of elements. The "Electron Configuration" activity can be used as an extension.
- Students can create their own graphic representations of elements describing their properties using Sketch Application.
- Students can upload a picture of their graphic to create a class wide periodic table with the elements arranged by properties and electron configuration.

PERIODIC TRENDS

PS.PS1.1: Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

PS.PS1.2: Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, knowledge of the patterns of chemical properties, and formation of compounds.

Evidence of Understanding

- Students will be able to identify and describe components of the atomic model to help them understand the relationships between elements in the periodic table.
- Students will be able to use this information to make connections and predict the patterns of specific properties such as the number and types of bonds formed, number and charge of stable ions, element reactivity, and the attraction/repulsion between charged particles.

Digital Tools

- *Content Application* - Nuclear App (Apple), Nova: Hunting the Elements*
- *Simulation Websites* - PhET Simulation Build an Atom*, *Ptable.com**
- *Graphing Tool* - Create a graph*, Desmos Graphing Calculator
- *Podcast Application* - Anchor*, Voice Record Pro App

In Practice

- Students will explore atoms using an application or simulation through 3D visualization.
- Students will explore the effects of manipulating matter at the atomic level.
- Students will look up the electro negativities of elements in the first two periods and use an online graphing tool to identify periodic trends.
- Students will develop explanations for how the structure of the atom is connected to periodic trends and use a podcasting application to share their thoughts and opinions regarding the connections they make between the two concepts.

PHYSICAL & CHEMICAL PROPERTIES

PS.PS1.1: Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

PS.PS1.2: Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, knowledge of the patterns of chemical properties, and formation of compounds.

Evidence of Understanding

- Students will be able to accurately describe physical and chemical properties by using various qualitative and quantitative measurements and observations.

Digital Tools

- Content Video - "Physical vs. Chemical Changes Explained", "Physical and Chemical Changes"
- *Content Application* - *Flinn Safety Data Sheets**, CAMEO Chemicals, Chemical Safety Data Sheets - ICSC
- *Sketch Application* - Tayasui Sketches, Absolute Board, Google Draw*, Sketchbook*
- *Presentation* - Keynote*, Google Slides*, Microsoft PowerPoint

In Practice

- Students will learn about physical and chemical changes by watching the videos
- Students will complete the activity, "Physical and Chemical Changes."
- Students will identify chemical and physical properties of various types of matter.
- Students will create a presentation discussing physical and chemical changes.
- Presentations should include energy changes associated with both physical and chemical changes.
- Students will make an inventory of items in the chemistry lab using pictures and sketches and give three physical properties and three chemical properties for each item with a minimum of ten items.

BONDING & NOMENCLATURE

PS.PS1.1: Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

PS.PS1.2: Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, knowledge of the patterns of chemical properties, and formation of compounds.

Evidence of Understanding

- Students will be able to use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
- Students will be able to construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, knowledge of the patterns of chemical properties, and formation of compounds.

Digital Tools

- *Content Video* - The Chemistry of Cookies
- *Sketch Application* - Sketches School, Notes, ibis, Absolute Board, Google Draw*, Notability, Sketchbook*
- *Word Processor* - Pages, Google Docs*, Microsoft Word

In Practice

- Students will watch the Ted-Ed video "The Chemistry of Cookies" and take digital notes during the video using a Sketch Application. Students are encouraged to illustrate their notes.
- Students will be challenged to come up with another way that chemical bonding occurs in everyday life other than those shown in the video and will add it to their notes.
- Students will upload the notes to a central document for the students to compare and contrast ideas in a class discussion about chemical bonding.

CHEMICAL REACTIONS

PS.PS1.1: Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

PS.PS1.2: Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, knowledge of the patterns of chemical properties, and formation of compounds.

PS.PS1.5: Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.

PS.PS1.7: Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Evidence of Understanding

- Students will be able to apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.
- Students will be able to use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Digital Tools

- *Content Video* - "Types of Chemical Reactions."
- *Story Telling Application* - Comic Strip - Comic Maker, Canva Comic Strip Maker*, Powtoon*

In Practice

- Students will watch the video, "Types of Chemical Reactions."
- Students will utilize a Story Telling App to create a comic strip illustrating a chemical reaction type.
- Students will present their comic strips and describe the type of reaction to the class.

PHYSICS

TYPES OF FORCES

PS.PS2.1: Analyze and interpret data to support the claim of a causal relationship between the net force on a macroscopic object and its change in motion, as described in Newton's second law of motion.

PS.PS2.2: Use mathematical representations to support the explanation that the total momentum of a system of objects is conserved when there is no net force on the system.

PS.PS2.3: Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.

Evidence of Understanding

- Students will be able to analyze data and use it to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.
- Students will be able to use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system and apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.

Digital Tools

- *Device Camera*
- *Video Editor-* Clips, WeVideo*, Do-Ink*, iMovie

In Practice

- Students will take a photo of a stationary object. Then using a photo editing app, annotate the object to identify forces acting upon the object.
- Students will then video the object in motion and interacting with another object.
- The students will use a video editing app to freeze images from the video and annotate the forces acting upon the objects.
- The students will utilize a video editing app to combine the raw images, annotated images, and video into one video that can be presented to the class.

MOTION

PS.PS2.1: Analyze and interpret data to support the claim of a causal relationship between the net force on a macroscopic object and its change in motion, as described in Newton's second law of motion.

PS.PS2.2: Use mathematical representations to support the explanation that the total momentum of a system of objects is conserved when there is no net force on the system.

PS.PS2.3: Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.

Evidence of Understanding

- Students will be able to analyze data and use it to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.
- Students will be able to use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.
- Students will be able to apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.

Digital Tools

- *Video Editor-* Clips, WeVideo*, Do-Ink*, iMovie
- *Website -* Amusement Park Ride, *Energy Skate Park Simulation*

In Practice

- Students will design an Amusement Park Ride using the activity. When designing the ride, the students must be able to describe its motion in terms of the laws of physics. Alternate option: Students will use the data in the margins of the Energy Skate Park Simulation to describe the motion in terms of the laws of physics.
- After the ride is designed, students will create a commercial highlighting the features of the ride and the laws of physics that pertain to each part of the ride.
- If collisions occur in the ride, the students will need to discuss the type of collision and whether or not momentum was conserved in the collision.

WAVE STRUCTURE

PS.PS4.1: Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.

Evidence of Understanding

- Students will be able to use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.

Digital Tools

- *Video Recording App* - Screencastify*, Record it Screen Recorder
- *Simulation Website* - Physics Classroom Simulator
- *Polling Application* - Plickers*, Poll Everywhere*

In Practice

- Students will go to the Physics Classroom website and manipulate the variables on the wave simulator to see the effects of the manipulations upon the wave and create a video of them using the simulation.
- Students will discuss with a partner the relationship between the variables that make up a wave.
- Students will then use a polling app to vote on the the possible relationships between variables. ex. "Does frequency increase or decrease when wavelength is increased?"

DIGITAL TRANSMISSION (WAVES)

PS.PS4.2: Evaluate questions about the advantages and disadvantages of using a digital transmission and storage of information.

Evidence of Understanding

- Students will be able to evaluate questions about the advantages and disadvantages of using a digital transmission and storage of information.

Digital Tools

- *Website* - Digital Transmission of Data lab
- *QR Code Reader* - *ScanQR**
- *Presentation* - Keynote, Google Slides*, Microsoft PowerPoint

In Practice

- Students will follow the instructions for the Digital Transmission of Data lab in which they convert an analog image into a digital image, specifically a QR code that reveals a hidden message.
- Students will prepare a presentation over the success or failure of the experiment.
- The presentation should also list the advantages and disadvantages of digital transmission of data.

EM RADIATION

PS.PS2.5: Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current.

PS.PS3.2: Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as either motions of particles or energy stored in fields.

PS.PS4.1: Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.

PS.PS4.4: Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.

Evidence of Understanding

- Students will be able to plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current.
- Students will be able to use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.
- Students will be able to develop and use models to illustrate that energy at the macroscopic scale can be accounted for as either motions of particles or energy stored in fields.
- Students will be able to evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.

Digital Tools

- *Simulation Website* - Electromagnetic Spectrum simulation
- *Sketch Application* - Sketches School, Absolute Board, Google Draw*, Sketchbook*
- *Device Camera*

In Practice

- Students will explore the Electromagnetic Spectrum simulation introducing them to common sources of electromagnetic radiation and where the radiation falls on the EM spectrum.
- Students will use their device camera to take images of other common everyday phenomena and determine if there is EM Radiation present and where on the spectrum the radiation could be located.
- Once the student determines the location of the radiation on the spectrum, they should use the information about the electromagnetic spectrum to predict the wavelength and frequency of the radiation.
- The students can then use a Sketch Application to create a poster about their types of radiation.

TYPES OF ENERGY

PS.PS2.5: Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current.

PS.PS.3.1: Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.

PS.PS3.2: Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as either motions of particles or energy stored in fields.

PS.PS3.3: Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.

Evidence of Understanding

- Students will be able to plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current. Students will create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.
- Students will be able to develop and use models to illustrate that energy at the microscopic scale can be accounted for as either motions of particles or energy stored in fields and can design, build, and refine a device that works within given constraints to convert one form of energy to another.

Digital Tools

- *Video Editor-* Clips, WeVideo*, Do-Ink*, iMovie
- *Website -* Wile E. Coyote & Roadrunner cartoons

In Practice

- Students will watch the short video relating the different types of energy to Wile E. Coyote & Roadrunner cartoons.
- Students will design a short video demonstrating the different types of energy (kinetic, gravitational potential, spring potential, and thermal) and demonstrate at least three transfers of energy.
- Students should annotate the video showing when the transfers of energy occur.
- Students should be prepared to present their video and defend their work.

ENERGY CONVERSION AND TRANSFER

PS.PS3.1: Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.

PS.PS3.2: Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as either motions of particles or energy stored in fields.

PS.PS3.3: Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.

PS.PS3.4: Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).

Evidence of Understanding

- Students will be able to create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.
- Students will be able to develop and use models to illustrate that energy at the macroscopic scale can be accounted for as either motions of particles or energy stored in fields.
- Students will be able to design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.
- Students will be able to organize and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).

Digital Tools

- *Video Editor-* Clips, WeVideo*, Do-Ink*, iMovie
- *Presentation -* Keynote, Google Slides*, Microsoft PowerPoint

In Practice

- The teacher will lead the class into a discussion of additional types of energy, (chemical, electrical, radiant, and etc...).
- Students should conduct research on which types of energy are used to make a phone call. They will record themselves calling each other on their phones, saying, "Hello", and hanging up. Then use a Video Editing app to annotate the video, labeling all of the different energy transfers in the video.
- Students should embed the video into a presentation discussing how energy can be transferred chemically (reaction/battery), electrically, and radiantly.

RESOURCES

TEACHER

- Periodic Table Site
- Flinn Science Labsafety
- Safety Contracts
- Chemical Safety Data Sheets App
- Significant Figures- YouTube Videos
- Eyedropper Hydrometer
- Periodic Trends Organizer
- YouTube: Properties of Matter
- YouTube: Chemical Formulas Explained: Nomenclature
- Phet: Balancing Chemical Equations
- Law of Motion Magic
- Periodic Table and Energy Lesson
- Wave Reflection Interference