Physical Science P

1. Chemical Reactions
   1. Introduction to Chemical Reactions
      1. Instruction
         1. What are the signs of a chemical reaction?
      2. Assignment
         1. Evaluate situations to determine whether chemical reactions have occurred.
      3. Quiz
   2. Describing Chemical Reactions
      1. Instruction
         1. How is mass conserved in a chemical reaction?
      2. Assignment
         1. Apply the law of conservation of mass to chemical equations.
      3. Quiz
   3. Balancing Chemical Equations
      1. Instruction
         1. How are chemical equations balanced?
      2. Assignment
         1. Practice balancing chemical equations.
      3. Quiz
   4. Types of Chemical Reactions
      1. InstructionHow are chemical reactions classified?
      2. Assignment
         1. Predict the outcome of different reaction types.
      3. Quiz
   5. Lab: Rate of Chemical Reactions
      1. Instruction
         1. How do the factors of temperature and surface area affect the rate of chemical reactions?
      2. Virtual Lab
         1. Explore factors that affect the rate of chemical reactions using a virtual experiment.
      3. Wet Lab
         1. Explore factors that affect the rate of chemical reactions using a controlled experiment.
      4. Assignment: Reflect on the Lab
         1. Answer questions based on the lab activity.
   6. Properties of Acids and Bases
      1. Instruction
         1. How do acids and bases differ?
      2. Assignment
         1. Identify and compare acids and bases.
      3. Quiz
   7. Acids and Bases in Solution
      1. Instruction
         1. What happens to acids and bases in solution?
      2. Assignment
         1. Describe acids and bases in solution.
      3. Quiz
   8. Lab: Acids and Bases
      1. Instruction
         1. How is pH used to determine if a solution is acidic or basic?
      2. Virtual Lab
         1. Explore the concept of pH and how to determine if a substance is acidic or basic using a virtual simulation.
      3. Assignment: Reflect on the Lab
         1. Answer questions based on the lab activity.
   9. Unit Test - (Must be taken in Person)
      * 1. Unit Test Review
2. Motion and Forces
   1. Introduction to Motion
      1. Instruction
         1. How is motion recognized?
      2. Assignment
         1. Practice determining distance and displacement.
      3. Quiz
   2. Speed and Velocity
      1. InstructionWhat are the similarities and differences between speed and velocity?
      2. Assignment
         1. Practice describing and calculating speed and velocity.
      3. Quiz
   3. Acceleration
      1. Instruction
         1. What is acceleration?
      2. Assignment
         1. Describe acceleration.
      3. Quiz
   4. Lab: Motion
      1. Instruction
         1. How can motion be described?
      2. Virtual Lab
         1. Explore motion by determining the speed and acceleration of an object using a virtual experiment.
      3. Assignment: Reflect on the Lab
         1. Answer questions based on the lab activity.
   5. Introduction to Forces
      1. Instruction
         1. How do forces affect the motion of an object?
      2. Assignment
         1. Predict force interactions.
      3. Quiz
   6. Gravity
      1. Instruction
         1. What is gravity and how does it influence objects?
      2. Assignment
         1. Describe and apply what you know about gravity and its influence on objects.
      3. Quiz
   7. Newton's Laws of Motion
      1. Instruction
         1. How do Newton’s laws describe the motion of an object?
      2. Assignment
         1. Read about Newton’s laws.
      3. Assignment
         1. Apply Newton’s laws.
      4. Quiz
   8. Lab: Newton's Laws of Motion
      1. Instruction
         1. How can Newton's laws be experimentally verified?
      2. Virtual Lab
         1. Explore Newton's first two laws of motion using a virtual experiment.
      3. Plan an Investigation
         1. Demonstrate and verify Newton’s first two laws of motion by planning an investigation.
      4. Assignment: Reflect on the Lab
         1. Answer questions based on the lab activity.
   9. Unit Test - (Must be taken in Person)
      1. Unit Test Review
3. Potential and Kinetic Energy
   1. Introduction to Energy
      1. Instruction
         1. What is energy?
      2. Assignment
         1. Apply the concept of energy.
      3. Quiz
   2. Potential and Kinetic Energy
      1. Instruction
         1. What is the relationship between potential energy and kinetic energy?
      2. Assignment
         1. Apply potential and kinetic energy concepts.
      3. Quiz
   3. Energy Transformations
      1. Instruction
         1. How does energy change from one form to another?
      2. Assignment
         1. Recognize energy transformations.
      3. Quiz
   4. Lab: Kinetic Energy
      1. Instruction
         1. How do mass and speed affect kinetic energy?
      2. Virtual Lab
         1. Explore the relationship between mass, speed, and kinetic energy using a virtual experiment.
      3. Assignment: Reflect on the Lab
         1. Answer questions based on the lab activity.
   5. Unit Test - (Must be taken in Person)
      1. Unit Test Review
4. Nuclear, Electromagnetic, and Heat Energy
   1. Temperature and Thermal Energy
      1. Instruction
         1. What is the relationship between temperature and thermal energy?
      2. Assignment
         1. Describe temperature and thermal energy.
      3. Quiz
   2. Heat
      1. Instruction
         1. What is heat?
      2. Assignment
         1. Apply the concept of heat.
      3. Quiz
   3. The Sun
      1. Instruction
         1. Assignment
         2. Describe the characteristics of the Sun.
      2. Quiz
   4. Energy Transfer in the Atmosphere
      1. Direct Instruction
         1. Practice
      2. Quiz
   5. Conduction
      1. Instruction
         1. What is the relationship between conduction and thermal energy?
      2. Assignment
         1. Describe conduction.
      3. Quiz
   6. Convection
      1. Instruction
         1. What is the relationship between convection and thermal energy?
      2. Assignment
         1. Describe convection.
      3. Quiz
   7. Radiation
      1. Instruction
         1. What is radiation?
      2. Assignment
         1. Describe radiation.
      3. Quiz
   8. Photosynthesis in Plants
      1. Direct Instruction
      2. Lab Lecture
      3. Practice
      4. Quiz
   9. The Electromagnetic Spectrum
      1. Instruction
         1. What is the electromagnetic spectrum?
      2. Assignment
         1. Describe electromagnetic waves.
      3. Quiz
   10. Unit Test - (Must be taken in Person)
       1. Unit Test Review
5. Waves
   1. Introduction to Waves
      1. InstructionWhat are waves?
      2. Assignment
         1. Describe waves.
      3. Quiz
   2. Properties of Waves
      1. Instruction
         1. What are the properties of a wave?
      2. Assignment
         1. Describe properties of waves.
      3. Quiz
   3. Sound Waves
      1. Instruction
         1. How are sound waves different from other waves?
      2. Assignment
         1. Describe sound waves.
      3. Quiz
   4. Earth's Interior
      1. Direct Instruction
         1. Practice
      2. Quiz
   5. Earthquakes and Seismic Waves
      1. Direct Instruction
         1. Lab Lecture
      2. Practice
      3. Quiz
   6. Waves
      1. Direct Instruction
         1. Practice
      2. Quiz
   7. Unit Test - (Must be taken in Person)
      1. Unit Test Review
6. Cumulative Exam - (Must be taken in Person)
   1. Cumulative Exam Review