Charlie A. Gray Junior High School 2023-2024 School Year

Physical Science 8th Grade

Unit 1: Energy Transformations/Heat Transfer (36 Days) - S8P2 c,d S8P5 a,b,c

A. **Student Goal:** Analyze and interpret data to create graphical displays that illustrate the relationships of kinetic energy to mass and speed, and potential energy to mass and height of an object (a)-Quiz 1

B. **Student Goal:** Plan and carry out an investigation to explain the transformation between kinetic and potential energy within a system (b) - Stemscope

C. **Student Goal:** Construct an argument to support a claim about the type of energy transformations within a system [e.g., lighting a match (light to heat), turning on a light (electrical to light)]. (c) -Quiz 2

D. **Student Goal:** Plan and carry out investigations on the effects of heat transfer on molecular motion as it relates to the collision of atoms (conduction), through space (radiation), or in currents in a liquid or a gas (convection). (S8P2d)-Quiz 2

Assessments/Quizzes:

Daily Work/Quizzes	Labs	Tests/Projects
3	5	2

2. Unit 2: Atomic Structure/Periodic Table (32 Days)- S8P1 a-f, S8P2 c,d

A. **Student Goal:** Recognize characteristics of atoms (protons, neutrons, and electrons) and simple molecules. (e)-Quiz 1

B. **Student Goal:** Analyze patterns within the periodic table. Stemscope

Assessments/Quizzes:

Daily Work/Quizzes	Labs	Tests/Projects
3	2	1

3. Unit 3: Mechanical Waves/Sound (28 Days)- S8P4 a-g

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A. **Student Goal:** Develop and use a model to compare and contrast how light and sound waves are reflected, refracted, absorbed, diffracted or transmitted through various materials. Stemscope

B. **Student Goal:** Analyze and interpret data to predict patterns in the relationship between density of media and sound wave behavior (i.e., speed). (e)- Quiz 1

C. **Student Goal:** Develop and use a model to predict and describe the relationships between sound wave properties (e.g., frequency, amplitude, and wavelength) and energy. (f)- Quiz 2

Daily Work/Quizzes	Labs	Tests/Projects
2	2	1

4. **Unit 4: Forces (18 Days)- S8P1e, S8P2c, S8P5 a-c**

A. **Student Goal:** Develop and use models to describe the meaning of Newton's Laws. (b)-Quiz 1

B. **Student Goal:** Compare and contrast energy transformations. Stemscope

C. **Student Goal**: Construct an argument based on observational evidence to support the claim that when a change in a force occurs, it can be classified as either balanced and unbalanced.

D. **Student Goal**: Construct an explanation based on evidence to describe the structure and composition of matter with friction, gravitational, electrical, and magnetic forces.

Daily Work/Quizzes	Labs	Tests/Projects
2	2	1

5. **Unit 5: Motion (18 Days)- S8P3 a-c, S8P2 a-b**

D. **Student Goal:** Develop and use a model to compare and contrast how speed and time differ. Analyze graphs of speed vs. time and time vs. velocity graphs. - Stemscope

E. **Student Goal:** Analyze and interpret data to predict patterns in the relationship between speed and time. (e)- Quiz 1

F. **Student Goal:** Develop and use a model to predict and describe the relationships between sound wave properties (e.g., frequency, amplitude, and wavelength) and energy. (f)- Quiz 2

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Daily Work/Quizzes	Labs	Tests/Projects
1	2	1