GRADE LEVEL (COURSE): **Physical Science Blueprint**

Unit Title: **Force and Motion**		Number of Days: approximately 2 weeks (based on a 90-min. per day- 5 days per week block schedule) Teachers will need to modify to the schedule used in their school.
Number	Competency or Objective	RBT Tag
1	2.01 Measure and mathematically/graphically analyze motion: • Frame of reference (all motion is relative - there is no motionless frame). • Uniform motion. • Acceleration.	A2 B4 C3
	2.02 Investigate and analyze forces as interactions that can change motion: • In the absence of a force, an object in motion will remain in motion or an object at rest will remain at rest until acted on by an unbalanced force. • Change in motion of an object (acceleration) is directly proportional to the unbalanced outside force and inversely proportional to the mass. • Whenever one object exerts a force on another, an equal and opposite force is exerted by the second on the first.	A1 A3 B4
	3.02 Investigate and analyze transfer of energy by work: • Force. • Distance	A1 B3 C2

Unit Title: **Energy**		Number of Days: 15 days (based on a 90-min. per day- 5 days per week block schedule)
Number	Competency or Objective	RBT Tag
2	3.01 Investigate and analyze storage of energy: • Kinetic energy • Potential energies: gravitational, chemical, electrical, elastic, nuclear • Thermal energy.	A1 A3 B4 C2
	3.03 Investigate and analyze transfer of energy by heating: • Thermal energy flows from a higher to a lower temperature. • Energy will not spontaneously flow from a lower temperature to a higher temperature. • It is impossible to build a machine that does nothing but convert thermal energy into useful work.	A1 A3 B4 C2
	3.04 Investigate and analyze the transfer of energy by waves: • General characteristics of waves: amplitude, frequency, period, wavelength, and velocity of propagation. • Mechanical waves. • Sound waves. • Electromagnetic waves (radiation).	A1 A2 A3 B4 C2
	6.06 Describe and explain radioactivity and its practical application as an alternative energy source: • Alpha, beta, and gamma decay. • Fission. • Fusion. • Nuclear waste.	A1 A2 A3 B2 C2

Unit Title: **Electricity and Magnetism**		Number of Days: 10 days (based on a 90-min. per day- 5 days per week block schedule)
Number	Competency or Objective	RBT Tag
3	4.01 Investigate and analyze the nature of static electricity and the conservation of electrical charge: • Positive and negative charges. • Opposite charges attract and like charges repel. • Analyze the electrical charging of objects due to the transfer of charge. 4.02 Investigate and analyze direct current electrical circuits: • Ohm's law. • Series circuits. • Parallel circuits. 4.03 Investigate and analyze magnetism and the practical applications of the characteristics of magnets. • Permanent magnets • Electromagnetism • Movement of electrical charges.	B4 C3 B4 B3

Unit Title: **Structure and Properties of Matter**		Number of Days: 14 days (based on a 90-min. per day- 5 days per week block schedule)
Number	Competency or Objective	RBT Tag
4	5.01 Develop an understanding of how scientific processes have led to the current atomic theory. • Dalton's atomic theory. • J. J. Thomson's model of the atom. • Rutherford's gold foil experiment • Bohr's planetary model. • Electron cloud model.	B2
	5.02 Examine the nature of atomic structure: • Protons. • Neutrons. • Electrons. • Atomic mass. • Atomic number. • Isotopes.	B2
	5.03 Identify substances through the investigation of physical properties: • Density. • Melting point. • Boiling point.	B3
	6.01 Analyze the periodic trends in the physical and chemical properties of elements. • Groups (families). • Periods.	B4

Unit Title: **Chemical Interactions**		Number of Days: 4 weeks (based on a 90-min. per day- 5 days per week block schedule)
Number	Competency or Objective	RBT Tag
5	6.02 Investigate and analyze the formation and nomenclature of simple inorganic compounds. • Ionic bonds (including oxidation numbers). • Covalent bonds. • Metallic bonds. 6.03 Identify the reactants and products of chemical reactions and balance simple equations of various types: • Single replacement. • Double replacement. • Decomposition. • Synthesis. 6.04 Measure and analyze the indicators of chemical change including: • Development of a gas. • Formation of a precipitate. • Release/absorption of energy (heat or light). 6.05 Investigate and analyze the properties and composition of solutions: • Solubility curves. • Concentration. • Polarity. • pH scale. • Electrical conductivity.	A3 B4 C2 A5 C3 C2 C3 A3 C2 C3