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| **DATE TAUGHT** | **STANDARD** |
|  | **Science as Inquiry**  **Designing an Investigation** |
|  | * Identify testable questions, questions that guide investigations/experiments, and questions to consider during an investigation |
|  | * Identify problems in an investigation |
|  | * Identify the components of an investigation |
|  | * Use multiple sources to answer questions |
|  | * Select appropriate experimental design or setup |
|  | * Predict outcomes of an investigation |
|  | * Identify correct procedure in an investigation |
|  | * Identify independent variable, dependent variable, and variables that should be controlled/constant |
|  | * Select appropriate tools, equipment, and technology to use in an investigation |
|  | * Measure using appropriate or accurate units of the metric system |
|  | * Identify appropriate safety tools and procedures |
|  | * Identify correct setup between varying investigations |
|  | * Identify ways to improve the investigation * Identify mistakes in procedures * Identify alternate methods for investigation using the same tools |
|  | **Communication** |
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|  | * Understand and be able to identify the difference between a description and an explanation |
|  | * Understand and be able to identify the difference between an observation and an inference |
| **DATE TAUGHT** | **STANDARD** |
|  | * Identify patterns in data |
|  | * Use models to explain natural phenomena or conclusions from investigations |
|  | * Communicate results of investigations |
|  | * Use multiple ways to interpret data that may result in alternate explanations |
|  | * Identify statements not supported by data/faulty reasoning |
|  | * Predict trends supported by data |
|  | * Identify statements that explain data |
|  | **Technology and the Work of Scientists** |
|  | * Recognize that scientists use logical processes to solve problems |
|  | * Review other scientists’ work before beginning an investigation |
|  | * Recognize that technology expands the human senses |
|  | * Recognize that present technology limits answering all questions |
|  | * Understand that there is an acceptable range of variation in collected data |
|  | * Identify mean, median, mode, and range from a given set of data |
|  | * Identify problems in models, experimental design |
|  | * Understand how scientists communicate about investigations in progress and findings |
|  | * Describe how/why scientific theories change |
|  | * Verify experiments through multiple investigation/trials |
|  | * Solve problems and form new ideas as a result of scientific investigations |
|  | * Identify ways technology has changed human life |
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| **DATE TAUGHT** | **STANDARD** |
|  | **Physical Science**  **Matter – Properties of Matter** |
|  | * Identify physical properties and chemical properties of substances |
|  | * Determine physical and chemical changes |
|  | * Describe the movement of atoms in solid, liquid, and gaseous states |
|  | * Make comparisons about the temperature at which water changes phases (freezing point, melting point, and boiling point) |
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|  | * Calculate density from a given set of data |
|  | **Matter – Chemical Changes of Matter** |
|  | * Describe the products of chemical reactions |
|  | * Describe the properties of reactants |
|  | * Identify atomic mass of a given element |
|  | * Identify the mass of reactants and products in a given chemical reaction |
|  | * Identify how particle size of the same reactant affects the rate of chemical reactions |
|  | * Identify elements and compounds from a variety of sources |
|  | **Forces and Motion** |
|  | * Analyze motion graphs and predict future movement |
|  | * Identify that velocity is speed and direction. |
|  | * Differentiate velocity from speed. |
|  | * Identify acceleration, deceleration, and constant speed graphs |
|  | * Identify forces acting on objects |
|  | * Recognize balanced and unbalanced forces |
|  | * Explain net force |
|  | * Explain that an object will remain at rest or in a constant motion unless an unbalanced force acts upon it |
|  | * Give examples of forces |
|  | * Describe friction |
|  | * Describe gravity |
|  | * Describe how resistance of materials affects electrical flow |
|  | * Identify objects with potential and kinetic energy |
|  | **Energy** |
|  | * Identify forms of energy (light, heat, sound, electrical, nuclear, mechanical) |
|  | * Explain transmission, reflection, absorption of sound, light, and heat energy |
|  | * Explain the law of conservation of energy |
|  | * Describe energy transformations in a simple system |
|  | * Understand simple machines (relationship of work input to work output) |
|  | * Recognize and compare heat transfer (conduction, convection, and radiation) |
|  | * Recognize that heat energy flows from a system of higher energy to a system of lower energy |
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|  | * Explain that electricity is produced from other types of energy (magnetism, solar, mechanical) |
|  | * Identify exothermic and endothermic reactions |
|  | * Identify wave characteristics (wavelength, frequency, amplitude) |
|  | * Predict direction of refracted light waves when passing through transparent materials |
|  | * Apply the law of reflection and law of refraction in common objects |
|  | * Using experimentation, determine whether light is reflected, transmitted, and/or absorbed |
|  | * Explain how humans see an object’s color based on the wavelength of light transmitted to the viewer’s eye |
|  | **Science and the Environment**  **Energy and Resources** |
|  | * Identify and classify energy as renewable, nonrenewable, and inexhaustible |
|  | * Compare pollutions amounts/capabilities of different energy sources |
|  | * Describe how inexhaustible energy is harnessed for energy production |
|  | * Identify methods for sustaining renewable resources |
|  | * Identify ways to reuse, recycle, and reduce |
|  | * Describe how technology influences resource use in an ecosystem (forestry, fishing, and soil conservation) |
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