**Science, Technology, Society, Environment (STSE)**

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| **4 - Exceeding** | **3 - Meeting** | **2 - Approaching** | **1 - Working Below** |
| **Independently and consistently:**   * **Describes various processes used in science and technology *to investigate the natural and constructed world* (e.g., multiple trials, re-testing, variations in data)** * Describe the development of science and technology over time * Explain how science and technology interact with and advance one another * Illustrate how the needs of individuals, society, and the environment influence and are influenced by scientific and technological endeavors (e.g., careers, industry, and special interest groups) * Analyze social issues related to the applications and limitations of science and technology, and explain decisions in terms of advantages and disadvantages for sustainability, considering a few perspectives | **Generally:**   * **Describes various processes used in science and technology *to investigate the natural and constructed world* (e.g., multiple trials, re-testing, variations in data)** * Describe the development of science and technology over time * Explain how science and technology interact with and advance one another * Illustrate how the needs of individuals, society, and the environment influence and are influenced by scientific and technological endeavors (e.g., careers, industry, and special interest groups) * Analyze social issues related to the applications and limitations of science and technology, and explain decisions in terms of advantages and disadvantages for sustainability, considering a few perspectives | **With prompting or on occasion:**   * **Describes various processes used in science and technology *to investigate the natural and constructed world* (e.g., multiple trials, re-testing, variations in data)** * Describe the development of science and technology over time * Explain how science and technology interact with and advance one another * Illustrate how the needs of individuals, society, and the environment influence and are influenced by scientific and technological endeavors (e.g., careers, industry, and special interest groups) * Analyze social issues related to the applications and limitations of science and technology, and explain decisions in terms of advantages and disadvantages for sustainability, considering a few perspectives | **Has difficulty even with support to:**   * **Describes various processes used in science and technology *to investigate the natural and constructed world* (e.g., multiple trials, re-testing, variations in data)** * Describe the development of science and technology over time * Explain how science and technology interact with and advance one another * Illustrate how the needs of individuals, society, and the environment influence and are influenced by scientific and technological endeavors (e.g., careers, industry, and special interest groups) * Analyze social issues related to the applications and limitations of science and technology, and explain decisions in terms of advantages and disadvantages for sustainability, considering a few perspectives |

**Skills: Plan, Perform**

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| **4 - Exceeding** | **3 - Meeting** | **2 - Approaching** | **1 - Working Below** |
| Independently and consistently:   * Clearly states testable questions * Identifies all necessary observable or measurable characteristics * Selects all relevant variables to test, control, and measure (quantitatively) * Makes prediction or hypothesis supported by prior scientific learning and research * Designs experiments to collect intended evidence; steps are complete, concise and can be understood by others * Conducts experiments that control all needed variables * Uses materials, techniques and equipment effectively, accurately, and safely * Observes relevant evidence * Records evidence appropriately given the task (symbols, units, labels, readability) | Generally:   * Clearly states questions answerable by doing an experiment (not opinion or yes/no) * Identifies observable or measurable characteristics * Selects relevant variables to test, control, and measure * Makes plausible prediction or hypothesis supported by prior scientific learning * Designs experiments to collect intended evidence; steps are complete and can be understood by others * Conducts experiments that control major variables * Uses materials, techniques and equipment effectively, accurately, and safely * Observes relevant evidence * Records evidence appropriately given the task (symbols, units, labels, readability) | With prompting or on occasion:   * States a question answerable by doing an experiment (not opinion or yes/no) * Identifies some observable or measurable characteristics * Selects some variables to control * Selects some variables to test and measure * Makes prediction supported by prior scientific learning * Designs experiments to collect intended evidence; some steps may be incomplete or missing * Conducts experiments that controls some variables * Mostly uses materials, techniques and equipment effectively, accurately, and safely * Observes evidence * Mostly records evidence appropriately given the task (symbols, units, labels, readability) | Has difficulty even with support to:   * State a question answerable by doing an experiment (not opinion or yes/no) * Identifies some observable or measurable characteristics * Identify variables * Make a prediction * Design a complete experiment * Conduct an experiment that controls some variables * Uses materials, techniques and equipment safely * Observes evidence * Records evidence (symbols, units, labels, readability) |

**Skills: Analyze, Explain**

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| **4 - Exceeding** | **3 - Meeting** | **2 - Approaching** | **1 - Working Below** |
| Independently and consistently:   * Organizes evidence efficiently and effectively * Identifies strengths and weaknesses of data collection and organization * Interprets patterns and relationships in data * Make predictions using data patterns and relationships * States a conclusion based on data and explain how evidence supports or refutes an initial idea * Identifies and explains possible source(s) of error and discrepancies in data with suggestions for improved experimental design * Applies findings to other situations * Identifies 2 or more new testable questions that arise from what was learned * Test, evaluate and correct problems and re-test a constructed device * Communicates questions, procedures, and results efficiently and effectively * Always uses specific science vocabulary appropriately * Collaborates with others * Expresses ideas clearly * Seeks and respects the views of others | Generally:   * Organizes evidence appropriately and effectively * Identifies strengths and weaknesses of data collection and organization * Interprets patterns and relationships in data * Make predictions using data patterns and relationships * States a conclusion based on data and explain how evidence supports or refutes an initial idea * Identifies possible source(s) of error and discrepancies in data * Identifies and evaluates how findings can be applied to other situations * Identifies 1-2 new questions that arise from what was learned (occasionally contains opinion) * Test, evaluate and correct problems with a constructed device * Communicates questions, procedures, and results effectively * Uses specific science vocabulary appropriately * Collaborates with others * Expresses ideas clearly * Seeks and respects the views of others | With prompting or on occasion:   * Organizes evidence appropriately * Recognizes patterns and relationships in data * Identifies a strength or weakness of data collection and/or organization * Make a prediction using data patterns * States a conclusion based on data * Identifies a possible source of error and a discrepancy in data * Identifies how findings can be applied to another situation * Identifies another question that arises from what was learned (often contains opinion) * Test and identify problems with a constructed device * Communicates questions, procedures, and results * Sometimes uses science vocabulary appropriately * can occasionally work in groups to: * Collaborate with others * Express idea * Respect the views of others | Has difficulty even with support to:   * Organize evidence appropriately * Recognize patterns and relationships in data * Identify a strength or weakness of data collection and/or organization * Make a prediction using data patterns * State a conclusion based on data * Identify a possible source of error and a discrepancy in data * Identify how findings can be applied to another situation * Identify another question that arises from what was learned (contain opinion) * Test a constructed device * Communicates questions, procedures, and results * Seldom uses science vocabulary appropriately * Collaborate with others * Express ideas * Respect the views of others |

**Knowledge:**

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| **4 - Exceeding** | **3 - Meeting** | **2 - Approaching** | **1 - Working Below** |
| Independently and consistently:   * Understanding of concepts goes beyond the curricular outcomes * Descriptions of content are complete, using specific science vocabulary appropriately * Content can be applied to new situations * Communicates knowledge efficiently and effectively (written, oral, and/or visual) | Generally:   * Demonstrates understanding of most concepts (at least ¾) * Descriptions of content are mostly complete, using specific science vocabulary appropriately * Communicates knowledge effectively (written, oral, and/or visual) | With prompting or on occasion:   * Demonstrates understanding of some concepts (at least 2/3) * Descriptions of content sometimes incomplete; science vocabulary used at times * Communicates knowledge with some difficulty (written, oral, and/or visual) | Has difficulty even with support to:   * Understand concepts * Describe content * Communicate knowledge (written, oral, and/or visual) |