|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Content Area** | Science | | | **Grade Level** | Kindergarten | | |
| **Course Name/Course Code** |  | | | | | | |
| **Standard** | **Grade Level Expectations (GLE)** | | | | | | **GLE Code** |
| 1. Physical Science | 1. Objects can move in a variety of ways that can be described by speed and direction | | | | | | SC09-GR.K-S.1-GLE.1 |
| 1. Objects can be sorted by physical properties, which can be observed and measured | | | | | | SC09-GR.K-S.1-GLE.2 |
| 1. Life Science | 1. Organisms can be described and sorted by their physical characteristics | | | | | | SC09-GR.K-S.2-GLE.1 |
| 1. Earth Systems Science | 1. The sun provides heat and light to Earth | | | | | | SC09-GR.K-S.3-GLE.1 |
| **Colorado 21st Century Skills**    **Critical Thinking and Reasoning:** *Thinking Deeply, Thinking Differently*  **Information Literacy:** *Untangling the Web*  **Collaboration:** *Working Together, Learning Together*  **Self-Direction:** *Own Your Learning*  **Invention:** *Creating Solutions* | | **Intragrated Curriculum Design:** This intradisciplinary approach matches basic elements in each of the science strands – physical, life, earth systems sciences - forming overlaps in instruction of certain topics and concepts in an authentic integrated model. | | | | | |
| **Unit Titles** | | | **Length of Unit/Contact Hours** | | | **Unit Number/Sequence** | |
| Characteristics and Properties of Organisms and Objects | | | On-going | | | 1 | |
| Motion | | | On-going | | | 2 | |
| The Sun | | | On-going | | | 3 | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Unit Title** | **Characteristics and Properties of Organisms and Objects** | | | **Length of Unit** | On-going |
| **Focusing Lens(es)** | Patterns | **Standards and Grade Level Expectations Addressed in this Unit** | SC09-GR.K-S.2-GLE.1  SC09-GR.K-S.1-GLE.1 | | |
| **Inquiry Questions (Engaging- Debatable):** | * What would life be like if organisms had everything in common and there were no detectable patterns? (SC09-GR.K-S.2-GLE.1; IQ.1) * Why is there strength in diversity? (SC09-GR.K-S.2-GLE.1; IQ.2) * How do you decide which properties are most important when putting objects into groups?(SC09-GR.K-S.1-GLE.1; IQ.2) | | | | |
| **Unit Strands** | Life Science, Physical Science | | | | |
| **Concepts** | characteristics, organisms, patterns, properties, objects | | | | |

|  |  |  |
| --- | --- | --- |
| **Generalizations**  **My students will Understand that…** | **Guiding Questions**  **Factual Conceptual** | |
| Patterns emerge through sorting of characteristics of organisms and properties of objects (SC09-GR.K-S.1-GLE.2-EO.a) and (SC09-GR.K-S.2-GLE.1-EO.a,b) | What is the difference between an organism and an object? (SC09-GR.K-S.1-GLE.2) and (SC09-GR.K-S.2-GLE.1)  What is the difference between a property and a characteristic? (SC09-GR.K-S.1-GLE.2) and (SC09-GR.K-S.2-GLE.1)  What is the difference between an object and a property? (SC09-GR.K-S.1-GLE.2) and (SC09-GR.K-S.2-GLE.1)  What is the difference between an organism and a characteristic? (SC09-GR.K-S.1-GLE.2) and (SC09-GR.K-S.2-GLE.1) | What is a pattern? (SC09-GR.K-S.2-GLE.1; IQ.1; RA.1)  How do you sort to make a pattern? (SC09-GR.K-S.2-GLE.1; IQ.1; RA.1) |
| Characteristics group and describe organisms so that patterns can be detected (SC09-GR.K-S.2-GLE.1; IQ.2; N.1,3) | What does an organism look like?  What is the same about of group of organisms?  What is different about a group of organisms? | How can organisms be described?  How can organisms be sorted in groups? |
| Objects have and are grouped by properties (SC09-GR.K-S.1-GLE.2-EO.a;IQ.1) | What is the same about of group of objects?  What is different about a group of objects? What does an object look like?  What does an object feel like? | How can objects be sorted in groups?  How can objects be described?  How can objects belong to more than one group?(SC09-GR.K-S.1-GLE.1; IQ.1) |

|  |  |
| --- | --- |
| **Critical Content:**  **My students will Know…** | **Key Skills:**  **My students will be able to (Do)…** |
| * The observable characteristics of organisms (SC09-GR.K-S.2-GLE.1-EO.a) * Patterns in the natural world (SC09-GR.K-S.2-GLE.1; RA.1) * Ways to classify a group of organisms (SC09-GR.K-S.2-GLE.1; RA.2) * Physical properties of objects (SC09-GR.K-S.1-GLE.2-EO.a) * How physical properties help determine an object’s uses(SC09-GR.K-S.1-GLE.2; RA.1,) * The reasons why scientists try to be clear and specific when they describe things(SC09-GR.K-S.1-GLE.2; N.1) | * Communicate and justify an evidence-based scientific rationale (SC09-GR.K-S.2-GLE.1-EO.b) * Ask questions about physical characteristics that will help them sort organisms (SC09-GR.K-S.2-GLE.1; N.1) * Share scientific ideas verbally in a clear way (SC09-GR.K-S.2-GLE.1; N.2) * Question peers about reasons for how they sort organisms and encourage them to use evidence to support their ideas. (SC09-GR.K-S.2-GLE.1; N.3) * Use scientific tools such as magnifying glasses and rulers in investigations and play (SC09-GR.K-S.2-GLE.1; N.4) * Observe, describe and investigate how objects can be sorted using their physical properties(SC09-GR.K-S.1-GLE.2-EO.a) * Explain why objects are sorted into categories(SC09-GR.K-S.1-GLE.2-EO.b) * Sort a set objects based on their physical characteristics (SC09-GR.K-S.1-GLE.2-EO.c) * Share clear and precise observations with others like scientist(SC09-GR.K-S.1-GLE.2; N.2) |

|  |  |  |
| --- | --- | --- |
| **Critical Language:** includes the Academic and Technical vocabulary, semantics, and discourse which are particular to and necessary for accessing a given discipline.  EXAMPLE: A student in Language Arts can demonstrate the ability to apply and comprehend critical language through the following statement: *“Mark Twain exposes the hypocrisy of slavery through the use of satire.”* | | |
| **A student in \_\_\_\_\_\_\_\_\_\_\_\_\_\_ can demonstrate the ability to apply and comprehend critical language through the following statement(s):** | | *Living things can be sorted in many different ways.*  *Things can be sorted by how they look and feel.* |
| **Academic Vocabulary:** | same, different, sort, observe, describe, investigate, explain, communicate | |
| **Technical Vocabulary:** | organism, living thing, fur, feathers, scales, objects, hard, smooth, shiny characteristic, attribute, properties | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Unit Title** | Motion | | | **Length of Unit** | On-going |
| **Focusing Lens(es)** | Change | **Standards and Grade Level Expectations Addressed in this Unit** | SC09-GR.K-S.1-GLE.1 | | |
| **Inquiry Questions (Engaging- Debatable):** | * What can change how fast or slow an object travels? * What indicates which objects will be easier or harder to move? | | | | |
| **Unit Strands** | Physical Science | | | | |
| **Concepts** | speed, direction, object, push, pull, force | | | | |

|  |  |  |
| --- | --- | --- |
| **Generalizations**  **My students will Understand that…** | **Guiding Questions**  **Factual Conceptual** | |
| Speed and direction can change an object’s motion (SC09-GR.K-S.1-GLE.1) | What is speed?  What is direction?  What is motion? (SC09-GR.K-S.1-GLE.1-EO.a) | How does changing an objects speed influence its motion? (SC09-GR.K-S.1-GLE.1-EO.a; IQ.1; RA.2)  How does changing an objects direction influence its motion? (SC09-GR.K-S.1-GLE.1-EO.a; IQ.1; RA.2) |
| The act of pushing and pulling alters the motion of an object due to competing forces (SC09-GR.K-S.1-GLE.1) | What does push mean? (SC09-GR.K-S.1-GLE.1; IQ.2; RA.1)  What does pull mean? (SC09-GR.K-S.1-GLE.1; RA.1) | How does pushing and/or pulling affect motion? (SC09-GR.K-S.1-GLE.1; RA.1,2; N.2,3) |

|  |  |
| --- | --- |
| **Critical Content:**  **My students will Know…** | **Key Skills:**  **My students will be able to (Do)…** |
| * That objects can move (SC09-GR.K-S.1-GLE.1-EO.a) * That objects move in different directions (SC09-GR.K-S.1-GLE.1-EO.b) * That objects move at different speeds (SC09-GR.K-S.1-GLE.1-EO.b) | * Observe, investigate, and describe how different objects move (SC09-GR.K-S.1-GLE.1-EO.a) * Describe the motion of a child who is sitting versus playing (SC09-GR.K-S.1-GLE.1-EO.b) * Recognize that scientists try to be clear and specific when they describe things (SC09-GR.K-S.1-GLE.1; N.1) |

|  |  |  |
| --- | --- | --- |
| **Critical Language:** includes the Academic and Technical vocabulary, semantics, and discourse which are particular to and necessary for accessing a given discipline.  EXAMPLE: A student in Language Arts can demonstrate the ability to apply and comprehend critical language through the following statement: *“Mark Twain exposes the hypocrisy of slavery through the use of satire.”* | | |
| **A student in \_\_\_\_\_\_\_\_\_\_\_\_\_\_ can demonstrate the ability to apply and comprehend critical language through the following statement(s):** | | *An object moves by pushing or pulling.* |
| **Academic Vocabulary:** | observe, investigate, describe, recognize | |
| **Technical Vocabulary:** | object, speed, direction, motion, push, pull | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Unit Title** | The Sun | | | **Length of Unit** | On-going |
| **Focusing Lens(es)** | Interdependence | **Standards and Grade Level Expectations Addressed in this Unit** | SC09-GR.K-S.3-GLE.1 | | |
| **Inquiry Questions (Engaging- Debatable):** | * What would happen to Earth if there was no Sun? * If the Earth did not rotate around the Sun, would the Earth have light? | | | | |
| **Unit Strands** | Earth Science | | | | |
| **Concepts** | sun, temperature, heat, light, rotation | | | | |

|  |  |  |
| --- | --- | --- |
| **Generalizations**  **My students will Understand that…** | **Guiding Questions**  **Factual Conceptual** | |
| The Sun influences the temperature on Earth due to Earth’s rotation (SC09-GR.K-S.3-GLE.1-EO.b,c; IQ.1) | What is the temperature during the day? (SC09-GR.K-S.3-GLE.1-EO.b,c; IQ.1; N.1)  What is the temperature at night? (SC09-GR.K-S.3-GLE.1-EO.b,c; IQ.1; N.1) | Why is the temperature different during the day and at night? (SC09-GR.K-S.3-GLE.1-EO.b,c; IQ.1; N.1)  How does the Sun impact Earth? (SC09-GR.K-S.3-GLE.1; IQ.1) |
| The Sun provides the heat and light upon which life on Earth depends (SC09-GR.K-S.3-GLE.1-EO.a) | What is heat?  What is light? | Why does the Earth need heat? (SC09-GR.K-S.3-GLE.1-EO.a;IQ.2; RA.1,2)  Why does the Earth need light? (SC09-GR.K-S.3-GLE.1-EO.a;IQ.2; RA.1,2)  What happens with the Sun’s light is blocked? (SC09-GR.K-S.3-GLE.1; IQ.2) |

|  |  |
| --- | --- |
| **Critical Content:**  **My students will Know…** | **Key Skills:**  **My students will be able to (Do)…** |
| * The difference between heat and light (SC09-GR.K-S.3-GLE.1-EO.a) * The differences in temperature during the day and at night (SC09-GR.K-S.3-GLE.1-EO.b) * Reasons why light and heat from the sun may change (e.g., when the sun is blocked by clouds, buildings, etc.) (SC09-GR.K-S.3-GLE.1-EO.c, d) | * Investigate, explain, and describe the difference between heat and light (SC09-GR.K-S.3-GLE.1-EO.a) * Analyze and interpret temperature data between day and night (SC09-GR.K-S.3-GLE.1-EO.b) * Investigate and communicate findings about what happens when the Sun’s light is blocked (SC09-GR.K-S.3-GLE.1-EO.c) * Investigate and communicate the effect of varying heat and light on the growth of plants through a scientific study (SC09-GR.K-S.3-GLE.1-EO.d) |

|  |  |  |
| --- | --- | --- |
| **Critical Language:** includes the Academic and Technical vocabulary, semantics, and discourse which are particular to and necessary for accessing a given discipline.  EXAMPLE: A student in Language Arts can demonstrate the ability to apply and comprehend critical language through the following statement: *“Mark Twain exposes the hypocrisy of slavery through the use of satire.”* | | |
| **A student in \_\_\_\_\_\_\_\_\_\_\_\_\_\_ can demonstrate the ability to apply and comprehend critical language through the following statement(s):** | | *The Sun gives us heat and light.* |
| **Academic Vocabulary:** | investigate, interpret, explain, question, communicate | |
| **Technical Vocabulary:** | heat, light, Earth, Sun, temperature, day, night, cool, warm, hot | |