|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Strand 1: Inquiry Process****Concept 1: Observations, Questions, and Hypotheses** | **S1C1PO** **1.** Formulate a relevant question through observations that can be tested by an investigation. **C** | I will formulate a related question through an observation that can be tested.  | application | Macmillan/McGraw-Hill Pg. 5, 12, & 13Buckle Down Pg. 10-12, and Pg. 14-15Buckle Down Pg. 18-22 and 25-41<http://www><http://www.need.org/node/68#Elementary> | FormulateRelevantInvestigationHypothesesQuestion |
| Strand 1: Inquiry ProcessConcept 1: Observations, Questions, and Hypotheses | **S1C1PO** **2.** Formulate predictions in the realm of science based on observed cause and effect relationships.**C** | I will formulate scientific predictions based on cause and effect observation | application | Macmillan/McGraw-Hill Pg. 6, 12, & 13Buckle Down Pg. 14-15Buckle Down Pg. 18-22 and 25-41<http://www.need.org/node/68#Elementary> | FormulateRealmCauseEffectrelationships |
| Strand 1: Inquiry ProcessConcept 1: Observations, Questions, and Hypotheses | **S1C1PO 3**. Locate information (e.g., book, article, website) related to an investigation. **C** | I will locate information related to an investigation. | application | <http://www.sciencedaily.com/><http://www.sciencemag.org/><http://www.sciencenewsforkids.org/><http://www.odysseymagazine.com/><http://www.sciencenews.org/><http://www.monroe.lib.in.us/childrens/booklists><http://www.popsci.com/><http://www.discovermagizine.com/><http://www.scientificamerican.com/><http://www.spartacus.schoolnet.co.uk/REVscience><http://www.scirus.com/><http://www.redesk.com/factsci.html><http://www.factmonster.com/><http://www.need.org/node/68#Elementary> | LocateInformationWebsite |
| Strand 1: Inquiry Process**Concept 2: Scientific Testing (Investigating and Modeling)** | **S1C2PO** **1.** Demonstrate safe behavior and appropriate procedures (e.g., use and care of technology, materials, organisms) in all science inquiry**C** | I will demonstrate safe behavior and correct actions in all science inquiry.  | application | Macmillan/McGraw-HillPg. 14, 61, 73, 89, 99, 110, and 111.Pg. 113, 123, 141, and 155. Buckle Down Pg. 22 and 23FOSS Manuel-Safety<http://www.need.org/node/68#Elementary> | ModelingInvestigationsDemonstrateAppropriateProceduresTechnologyOrganisms |
| Strand 1: Inquiry ProcessConcept 2: Scientific Testing (Investigating and Modeling) | **S1C2PO** **2.** Plan a simple investigation that identifies the variables to be controlled.**C** | I will plan a study that finds the variables to beControlled.  | application | Buckle Down Pg. 18-22 and 25-41<http://www.kids4research.org/><http://www.ehow.com><http://www.sciencebuddies.org/>FOSS-Variables<http://www.fossweb.com/><http://www.fossweb.com/NYC/resources.html><http://www.need.org/node/68#Elementary> | VariablesControlledIdentifysimple |
| Strand 1: Inquiry ProcessConcept 2: Scientific Testing (Investigating and Modeling) | **S1C2PO** **3.** Conduct simple investigations (e.g., related to forces and motion, Earth processes) based on student-developed questions in life, physical, and Earth and space sciences**.** **C** | I will conduct a simple test based on student-made questions.  | Application  | Macmillan/McGraw-HillPg. 14, 61, 73, 89, 99, 110, and 111.Pg. 113, 123, 141, and 155.Buckle Down Pg. 18-22 and 25-41FOSS-Ideas and Inventions<http://www.fossweb.com/><http://www.need.org/node/68#Elementary><http://www.fossweb.com/NYC/resources.html> | ConductRelatedForceMotionprocesses |
| Strand 1: Inquiry ProcessConcept 2: Scientific Testing (Investigating and Modeling) | **S1C2PO** **4.** Measure using appropriate tools (e.g., ruler, scale, balance) and units of measure (i.e., metric, U.S. customary). **C** | I will measure using proper tools. | Evaluation | Macmillan/McGraw-HillPg. R2-R7Buckle Down Pg. 18-22 and 25-41FOSS-Measurement<http://www.fossweb.com/><http://www.fossweb.com/NYC/resources.html><http://www.need.org/node/68#Elementary> | MeasureRulerScaleBalanceUnitsMetriccustomary |
| Strand 1: Inquiry ProcessConcept 2: Scientific Testing (Investigating and Modeling) | **S1C2PO** **5.** Record data in an organized and appropriate format (e.g., t-chart, table, list, written log). **C** | I will record data in an organized and correct format  | application | Macmillan/McGraw-HillPg. R8 and R9.Buckle Down Pg. 18-22 and 25-41<http://www.eduplace.com/><http://www.teachvision.fen.com/><http://www.science-class.net/><http://www.abctech.com/><http://www.internet4classrooms.com/><http://www.need.org/node/68#Elementary> | Format DataFormatT-chartrecord |
| Strand 1: Inquiry Process**Concept 3: Analysis and Conclusions** | **S1C3PO** **1.** Analyze data obtained in a scientific investigation to identify trends and form conclusions. **C** | I will analyze data obtained in a scientific inquiry to identify trends and conclusions.  | analysis | Macmillan/McGraw-HillPg. 8 and 9.Pg. R21 and R22. Buckle Down Pg. 18-22 and 25-41FOSS-Manuel<http://www.need.org/node/68#Elementary> | AnalyzeObtainedTrendsconclusion |
| Strand 1: Inquiry ProcessConcept 3: Analysis and Conclusions | **S1C3PO** **2**. Analyze whether the data is consistent with the proposed explanation that motivated the investigation. **C** | I will analyze if data is consistent with the explanation that motivated the inquiry | analysis | Macmillan/McGraw-HillPg. 8 and 9.Pg. R21 and R22.Buckle Down Pg. 18-22FOSS-Manual<http://www.need.org/node/68#Elementary> | DataMotivatedExplanation Consistentinquiry |
| Strand 1: Inquiry ProcessConcept 3: Analysis and Conclusions | **S1C3PO** **3**. Evaluate the reasonableness of the outcome of an investigation. **C** | I will evaluate the fairnessof an inquiry. | evaluation | Buckle Down Pg. 18-22 and 25-41FOSS-Manuel<http://www.need.org/node/68#Elementary> | EvaluateReasonablenessOutcomeFairnessinvestigation |
| Strand 1: Inquiry ProcessConcept 3: Analysis and Conclusions | **S1C3PO** **4**. Develop new investigations and predictions based on questions that arise from the findings of an investigation. **C** | I will develop new studies and predictions based on questions from the inquiry.  | application | Macmillan/McGraw-HillPg. 6, 12, & 13Buckle Down Pg. 18-22 and 25-41FOSS-Manuel<http://www.need.org/node/68#Elementary> | PredictionAriseConstructInquiryfindings |
| Strand 1: Inquiry ProcessConcept 3: Analysis and Conclusions | **S1C3PO** **5**. Identify possible relationships between variables in simple investigations (e.g., time and distance; incline and mass of object). **C** | I will identify likely relationships between variables in a simple inquiry. | knowledge | Buckle Down Pg. 18-22 and 25-41<http://www.kids4research.org/><http://www.ehow.com><http://www.sciencebuddies.org/>FOSS-Levers and Pulleys<http://www.fossweb.com/><http://www.fossweb.com/NYC/resources.html><http://www.need.org/node/68#Elementary> | VariablesRelationshipsSimple DistanceInclinemass |
| Strand 1: Inquiry Process**Concept 4: Communication**. | **S1C4PO** **1**. Communicate verbally or in writing the results of an inquiry. **C** | I will communicate verbally and write the results of a scientific question. | knowledge | Macmillan/McGraw-HillPg. 12, 376, and 377.Buckle Down Pg. 18-22 and 25-41Writing in Science1. Descriptive Pg. 70 & 338
2. Explanatory Pg. 96, 280, 438, and 618.
3. Expository Pg. 58, 258, 550 and 662.
4. Fictional Pg. 152
5. Narrative Pg. 404
6. Persuasive Pg. 228
 | CommunicateVerballyresults |
| Strand 1: Inquiry ProcessConcept 4: Communication | **S1C4PO** **2**. Choose an appropriate graphic representation for collected data:* bar graph
* line graph
* Venn diagram
* model

**C** | I will choose the correct graphic organizer for collected data | knowledge | Macmillan/McGraw-HillPg. R8 and R9Buckle Down Pg. 18-22 and 25-41FOSS-Manuel | GraphicSymbolCollectedDataBar graphLine graphVenn diagrammodel |
| Strand 1: Inquiry ProcessConcept 4: Communication | **S1C4PO** **3.** Communicate with other groups or individuals to compare the results of a common investigation. **C** | I will communicate with others to compare results of a scientific question.  | comprehension | Macmillan/McGraw-HillPg. 12, 376, and 377.Buckle Down Pg. 18-22 and 25-41FOSS-Manuel | CompareResultsInvestigationcommon |
| **Strand 2: History and Nature of Science****Concept 1: History of Science as a Human Endeavor** | **S2C1PO1** Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Percy Lavon Julian [scientist], supports Strand 4; Niels Bohr [scientist], supports Strand 5; Edwin Hubble [scientist], supports Strand 6).**C** |  |  |  |  |
| Strand 2: History and Nature of Science**Concept 2: Nature of Scientific Knowledge** | **S2C2PO1** Provide examples that support the premise that science is an ongoing process that changes in response to new information and discoveries (e.g.*,* space exploration, medical advances).**C** |  |  |  |  |
| Strand 2: History and Nature of ScienceConcept 2: Nature of Scientific Knowledge | **S2C2PO2** Explain the cycle by which new scientific knowledge generates new scientific inquiry**C** |  |  |  |  |
| Strand 2: History and Nature of ScienceConcept 2: Nature of Scientific Knowledge | **S2C2PO** **3.** Describe how scientific knowledge is subject to modification and/or change as new information/ technology challenges prevailing theories. **C**  | I will describe how scientific knowledge changes as new information challenges present theories. | knowledge | Buckle Down Pg. 18-22 and 25-41<http://www.onlinelibrary.wiley.com/><http://www.users.aristotle.net/>FOSS-Ideas and InventionsFOSS-Models and Designs<http://www.fossweb.com/><http://www.fossweb.com/NYC/resources.html><http://www.need.org/node/68#Elementary> | ModificationTechnologyChallengesPrevailingTheories |
| Strand 2: History and Nature of ScienceConcept 2: Nature of Scientific Knowledge | **S2C2PO** **4**. Compare collaborative approaches that scientists use for investigations (e.g., teams, individual with peer review). **C**  | I will collaborate ways to a scientific investigation. | Knowledge | Buckle Down Pg. 18-22 and 25-41<http://www.nerrsepa.org/><http://www.district.auburn.cnyric.org/><http://www.eric.ed.gov/><http://www.ejse.southwestern.edu/>FOSS-Manuel | CollaborativeApproachesInvestigationsPeerreview |
| Strand 2: History and Nature of ScienceConcept 2: Nature of Scientific Knowledge | **S2C2PO** **5**. Describe qualities of the scientists’ habits of mind (e.g., openness, skepticism, integrity, tolerance). **C** | I will describe the traits of the scientists’ habits of mind. | knowledge | Buckle Down Pg. 18-22 and 25-41Buckle Down 42-46<http://www.childresearch.net>FOSS-Manual<http://www.need.org/node/68#Elementary> | QualitiesHabitsOpennessSkepticismIntegritytolerance |
| **Strand 3: Science in Personal and Social Perspectives** **Concept 1: Changes in Environments**  | **S3C1PO** **1**. Explain the impacts of natural hazards on habitats (e.g., global warming, floods, asteroid or large meteor impacts). **C** | I will explain the impact of natural danger on habitats.  | comprehension | Buckle Down Pg. 106-107FOSS-EnvironmentsFOSS-Water Planet<http://www.fossweb.com/><http://www.fossweb.com/NYC/resources.html><http://www.need.org/node/68#Elementary> | ImpactNaturalHabitatsHazardsAsteroidMeteorGlobal warmingPerspectivepersonal |
| Strand 3: Science in Personal and Social Perspectives Concept 1: Changes in Environments  | **S3C1PO 2** Propose a solution, resource, or product that addresses a specific human, animal, or habitat need**C** |  |  |  |  |
| Strand 3: Science in Personal and Social Perspectives Concept 1: Changes in Environments  | **S3C1PO** **3**. Evaluate the possible strengths and weaknesses of a proposed solution to a specific problem relevant to human, animal, or habitat needs. **C**  | I will evaluate ways to solve animal and human environmental needs. | evaluation | Buckle Down Pg. 165-172FOSS-Environments<http://www.fossweb.com/><http://www.fossweb.com/NYC/resources.html> | PossibleStrengthsSolutionEnvironmentExactHumanWeaknessesProposehabitat |
| Strand 3: Science in Personal and Social Perspectives **Concept 2: Science and Technology in Society** | **S3C2PO** **1**. Describe the relationship between science and technology. **C**  | I will describe the relationship between science and technology.  | knowledge | Buckle Down Unit One-The Nature of ScienceFOSS-Ideas and InventionsFOSS-Models and Designs<http://www.fossweb.com/><http://www.fossweb.com/NYC/resources.html><http://www.need.org/node/68#Elementary> | TechnologyPerspectiverelationship |
| Strand 3: Science in Personal and Social Perspectives Concept 2: Science and Technology in Society | **S3C2PO** **2**. Explain how scientific knowledge, skills, and technological capabilities are integral to a variety of careers.**C** | I will explain how scientific knowledge, skill, and technical ability are important to a career. | comprehension | Macmillan/McGraw-Hill Pg. 472, 690, 134, 356, 564, 232, 564, 143, 690, 356, 232, and 472.FOSS-Manuel<http://www.need.org/node/68#Elementary> | TechnologicalCapabilitiesCareerSkillAbilityIntegralVarietyImportant  |
| Strand 3: Science in Personal and Social Perspectives Concept 2: Science and Technology in Society | **S3C2PO** **3**. Design and construct a technological solution to a common problem or need using common materials. **C**  | I will design and constructa technical answer to a problem or need using materials. | application | Buckle Down Pg. 18-22 and 25-41FOSS-Ideas and InventionsFOSS-Models and Designs<http://www.fossweb.com/><http://www.fossweb.com/NYC/resources.html><http://www.need.org/node/68#Elementary> | DesignTechnologySolutionConstructTechnicalmaterials |
| **Strand 4: Life Science****Concept 1: Structure and Function in Living** | **S4C1PO** **2.** Identify the following types of muscles:* cardiac – heart
* smooth – stomach
* skeletal – biceps

**C** | I will identify the types of muscles. | knowledge | Macmillan/McGraw-HillPg. R10 and R11<http://www.buzzle.com/><http://edutech.kennesaw.edu/>FOSS-Human Body<http://www.fossweb.com/><http://www.fosweb.com/NYC/resources.html> | MusclesCardiacbiceps |
| Strand 4: Life ScienceConcept 1: Structure and Function in Living | **S4C1PO** **3**. Identify the functions and parts of the nervous system:control center – brainrelay mechanism – spinal cord transport messages – nerves **C** | I will identify the parts of the nervous system. | knowledge | Macmillan/McGraw-HillPg. R16 and R17<http://www.buzzle.com/><http://www.eruptingmind.com/><http://www.faculty.washington.edu/><http://www.webschoolsolutions.com/><http://edutech.kennesaw.edu/>FOSS-Human Body<http://www.fossweb.com/><http://www.fosweb.com/NYC/resources.html> | NervousSystemResponsesRelayTransportMessagesMechanismSpinal cordnerves |
| Strand 4: Life ScienceConcept 1: Structure and Function in Living Systems | **S4C1PO4** Distinguish between voluntary and involuntary responses.**C** |  |  |  |  |
| **Strand 5: Physical Science****Concept 1: Properties and Changes of Properties in Matter** | **S5C1PO1** Identify that matter is made of smaller units called:* molecules (e.g.*,* H2O, CO2)
* atoms (e.g., H, N, Na)

**C** |  |  |  |  |
| Strand 5: Physical ScienceConcept 1: Properties and Changes of Properties in Matter | **S5C1PO2** Distinguish between mixtures and compounds.**C** |  |  |  |  |
| Strand 5: Physical ScienceConcept 1: Properties and Changes of Properties in Matter | **S5C1PO3** Describe changes of matter:* physical – cutting wood, ripping paper, freezing water
* chemical – burning of wood, rusting of iron, milk turning sour

**C** |  |  |  |  |
| Strand 5: Physical Science**Concept 2: Motion and Forces** | **S5C2PO1**. Describe the following forces:* gravity
* friction

**C** | I will describe the forces in gravity and friction. | Comprehension | Macmillan/McGraw Hill-pgs. 421, 425, 438, 439, 583, 587, 589, 594, 595, 597, Buckle Down-SciencePg. 94-104Science-A Closer LookPg. 568A-620Science-A Closer Look(School to Home Activities) Pg. 83-89FOSS-Levers and PulleysFOSS-Variables<http://www.fossweb.com/><http://www.need.org/node/68#Elementary> | ObjectsPullingSlowing MotionRubbingForceGravityWeightFrictionNormal ForceBalancedEquilibrium |
| Strand 5: Physical ScienceConcept 2: Motion and Forces | **S5C2PO2**. Describe the various effects forces can have on an object (e.g.*,* cause motion, halt motion, change direction of motion, cause deformation).**C** | I will describe the various forces on an object. | Comprehension | Macmillan/McGraw Hill-pgs. 571, 575, 580, Buckle Down-SciencePg. 94-104Science-A Closer LookPg. 568A-620Science-A Closer Look(School to Home Activities)Pg. 101-109FOSS-Levers and PulleysFOSS-Models and DesignsFOSS-Variables<http://www.fossweb.com/><http://www.need.org/node/68#Elementary> | ForceGravityWeightFrictionNormal ForceBalancedEquilibriumBasic Laws of MotionNewton’s 1st Law of MotionInertiaUnbalancedNewton’s 2nd Law of Motion |
| Strand 5: Physical ScienceConcept 2: Motion and Forces | **S5C2PO3**. Examine forces and motion through investigations using simple machines (e.g.*,* wedge, plane, wheel and axle, pulley, lever). **C** | I will examine forces and motion through experiments using a simple machine. | Analysis | Macmillan/McGraw-Hill- Pgs.592, 610, 609, 611, 616, 618, 619, 621, Buckle Down-SciencePg. 94-104Science-A Closer LookPg. 568A-620Science-A Closer Look(School to Home Activities)Pg. 101-109FOSS-Levers and Pulleys<http://www.fossweb.com/><http://www.need.org/node/68#Elementary> | Newton’s 3rd Law of MotionSimple MachineFulcrumCompound MachineForce BalanceMass |
| Strand 5: Physical ScienceConcept 2: Motion and Forces | **S5C2PO4**. Demonstrate effects of variables on an object’s motion (e.g.*,* incline angle, friction, applied forces). **C** | I will demonstrate the effects of variables on an object’s motion. | Application | Macmillan/McGraw-Hill-Pgs.73, 571, 587, 589 ,601, 608, 611, 617, Buckle Down-SciencePg. 94-104Science-A Closer LookPg. 568A-620Science-A Closer Look(School to Home Activities)Pg. 101-109FOSS-Levers and PulleysFOSS-Models and DesignsFOSS-Variables<http://www.fossweb.com/> | Force ReductionDistanceNo ForceLess ForceMore ForcePush PullMuscle ForceMachine ForceForce Providers-(GravityElectricityMagnetism) |
| **Strand 6: Earth and Space Science****Concept 2: Earth’s Processes and Systems** | **S6C2PO 1** Describe how the Moon’s appearance changes during a four-week lunar cycle**C** |  |  |  |  |
| Strand 6: Earth and Space ScienceConcept 2: Earth’s Processes and Systems | **S6C2PO 2** Describe how Earth’s rotation results in day and night at any particular location.**M** |  |  |  |  |
| Strand 6: Earth and Space ScienceConcept 2: Earth’s Processes and Systems | **S6C2PO** **3**. Distinguish between revolution and rotation. **M** | I will distinguish between revolution and rotation. | Analysis | Macmillan/McGraw-HillPg. 420Buckle Down Pg. 134FOSS-Sun, Moon, and Stars<http://www.fossweb.com/><http://www.fossweb.com/NYC/resources.html><http://imagine.gsfc.nasa.gov/> | AnalyzeObtainedTrendsconclusion |
| Strand 6: Earth and Space ScienceConcept 2: Earth’s Processes and Systems | **S6C2PO** **4**. Describe the role of gravity as an attractive force between celestial objects.**M** | I will describe the function of gravitiy between planetary objects. | knowledge | Macmillan/McGraw-HillPg. 422Buckle Down Pg. 134FOSS-Sun, Moon, and Stars<http://www.fossweb.com/><http://www.fossweb.com/NYC/resources.html><http://www.need.org/node/68#Elementary><http://imagine.gsfc.nasa.gov/> | GravityAttractiveForceCelestial |
| Strand 6: Earth and Space Science**Concept 3: Earth in the Solar System** | **S6C3PO** **1**. Identify the known planets of the solar system.**M** | I will identify planets in the solar system. | knowledge | Macmillan/McGraw-HillPg. 428-429 and 439Pg. 444-447Buckle Down Pg. 134<http://imagine.gsfc.nasa.gov/>FOSS-Sun, Moon, and Stars<http://www.fossweb.com/><http://www.fossweb.com/NYC/resources.html><http://www.need.org/node/68#Elementary> | Solar systemPlanets |
| Strand 6: Earth and Space ScienceConcept 3: Earth in the Solar System | **S6C3PO** **2**. Describe the distinguishing characteristics of the known planets in the solar system. **C** | I will describe and distinguish.Planetary objects. | knowledge | Macmillan/McGraw-HillPg. 444-447<http://imagine.gsfc.nasa.gov/>FOSS-Sun, Moon, and Stars<http://www.fossweb.com/><http://www.fossweb.com/NYC/resources.html><http://www.need.org/node/68#Elementary>Buckle Down Pg. 134 | UniqueCharacteristicsSolar systemplanets |
| Strand 6: Earth and Space ScienceConcept 3: Earth in the Solar System | **S6C3PO** **3.** Describe various objects in the sky (e.g., asteroids, comets, stars, meteors/shooting stars).**C** | I will describe various objects in the sky. | knowledge | Macmillan/McGraw-HillPg. 450-451Buckle Down Pg. 134<http://imagine.gsfc.nasa.gov/>FOSS-Sun, Moon, and Stars<http://www.fossweb.com/><http://www.fossweb.com/NYC/resources.html><http://www.need.org/node/68#Elementary> | ObjectsAsteroidsCometsStarsMeteorShooting stars |
| Strand 6: Earth and Space ScienceConcept 3: Earth in the Solar System | **S6C3PO** **4**. Describe the change in position and motion of the following objects in the sky over time:* real motion – Moon, planets
* apparent motion (due to the motion of the Earth) – Sun, Moon, stars

**C** | I will describe the changes and motion of objects in the sky. | knowledge | Macmillan/McGraw-HillPg. 432-436, 444-445, and 458-466.Buckle Down Pg. 134<http://imagine.gsfc.nasa.gov/>FOSS-Sun, Moon, and Stars<http://www.fossweb.com/><http://www.fossweb.com/NYC/resources.html> | PositionMotionReal motionMoonPlanetsApparent motion |
| Strand 6: Earth and Space ScienceConcept 3: Earth in the Solar System | **S6C3PO** **5.** Explain the apparent motion of the Sun and stars **C** | I will explain the motion of the sun and stars.  | synthesis | Macmillan/McGraw-Hill Pg. 458-466Buckle Down Pg. 134FOSS-Sun, Moon, and Stars<http://www.fossweb.com/><http://www.fossweb.com/NYC/resources.html> | MotionStarssun |
| Strand 6: Earth and Space ScienceConcept 3: Earth in the Solar System | **S6C3PO** **6.** Describe efforts to explore space (e.g., Apollo missions, space shuttles, Hubble space telescope, space probes). **C** | I will describe ways to explore space. | knowledge | Macmillan/McGraw-HillPg. 422, 442, 443, 447, 452, & 454. <http://imagine.gsfc.nasa.gov/>FOSS-Ideas and InventionsFOSS-Models and Designs<http://www.fossweb.com/><http://www.fossweb.com/NYC/resources.html><http://www.need.org/node/68#Elementary> | ExploreShuttleMissionTelescopeSpace probes |