

Florida Department of Education

COURSE DESCRIPTION - GRADES 6-8
SUGGESTED COURSE PERFORMANCE OBJECTIVES

Subject Area: Academics - Subject Areas
Course Number: 7820010
Course Title: Science: 6-8

- A. Major Concepts/Content.** The purpose of this course is to provide a general knowledge of the concepts of life science, physical science, and earth science to enable students with disabilities to function at their highest levels, participate effectively in the community, and prepare for a career.

The content should include, but not be limited to, the following:

- life science:
 - plants and animals
 - human growth and development
- physical science:
 - matter and energy
 - force and motion
- earth science:
 - climate and weather
 - the solar system
 - ecology and the environment
- application of scientific knowledge

This course shall integrate the Sunshine State Standards and Goal 3 Student Performance Standards of the Florida System of School Improvement and Accountability as appropriate to the individual student and to the content and processes of the subject matter. Students with disabilities shall:

- CL.A.1.In.1 complete specified Sunshine State Standards with modifications as appropriate for the individual student.
- CL.A.1.Su.1 complete specified Sunshine State Standards with modifications and guidance and support as appropriate for the individual student.

- B. Special Note.** This entire course may not be mastered in one year. The particular course requirements that the student should master each year must be specified on an individual basis.

This course is designed to reflect, but not replicate, many of the requirements for Grades 6-8 science in the basic education program. For students who are preparing

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to pursue a standard diploma, course requirements should incorporate content and benchmarks from the Sunshine State Standards for Science, Grades 6-8.

This course is primarily designed for students functioning at independent and supported levels. Students functioning at independent levels are generally capable of working and living independently and may need occasional assistance. Students functioning at supported levels are generally capable of living and working with ongoing supervision and support. Three levels of functioning, independent, supported, and participatory, have been designated to provide a way to differentiate benchmarks and course requirements for students with diverse abilities. Individual students may function at one level across all areas, or at several different levels, depending on the requirements of the situation.

This course may also be used to accommodate the wide range of abilities within the population of students with disabilities. The particular benchmark for a course requirement should be selected for individual students based on their levels of functioning and their desired post-school outcomes.

The level of functioning should be determined for each course requirement or performance objective. The key to determining the level is consideration of the amount of additional support and assistance that *must* be provided for the student. This support and assistance must be *beyond* what is typically provided for nondisabled individuals in performing the same type of behaviors or tasks. The following guidelines may be used to assist this process.

- For requirements/objectives mastered at the Independent Level, students are expected to be able to perform the behaviors identified for each benchmark *on their own* once they have mastered the knowledge and skills.
- For requirements/objectives mastered at the Supported Level, mastery should be determined with consideration of the amount and type of *guidance and support* necessary to the student to perform the behavior. This generally consists of some type of prompting or supervision.

Physical prompt—a touch, pointing, or other type of gesture as a reminder

Verbal prompt—a sound, word, phrase, or sentence as a reminder

Visual prompt—color-coding, icons, symbols, or pictures as a reminder

Assistive technology—an alarm, an electronic tool

Supervision—from occasional inspection to continuous observation

- For requirements/objectives mastered at the Participatory Level, mastery should be determined with consideration of the amount and type of *assistance* necessary to the student to participate in the performance of the behavior.

Physical assistance—from a person, such as full physical manipulation or partial movement assistance

Assistive technology—full: props, bolsters, pads, electric wheelchair;

partial: straps, lapboards, adapted utensils

The performance objectives are designed to provide teachers with ideas for short-term objectives for instructional planning. The performance objectives are not intended to be exhaustive of all the possible short-term objectives a student may need in this course. Other objectives should be added as required by an individual student.

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Instructional activities involving practical applications of course requirements may occur in naturalistic settings in home, school, and community for the purposes of practice, generalization, and maintenance of skills. These applications may require that the student acquire the knowledge and skills involved with the use of related technology, tools, and equipment.

- C. Course Requirements.** These requirements include, but are not limited to, the benchmarks from the Sunshine State Standards for Special Diploma that are most relevant to this course. Students are expected to make progress, but are not required to master benchmarks listed for this course. Benchmarks correlated with a specific course requirement may also be addressed by other course requirements as appropriate. Some requirements in this course are not fully addressed in the Sunshine State Standards for Special Diploma.

After successfully completing this course, the student will:

- 1. Use the scientific method and general science skills to solve problems (e.g., making observations, using scientific tools, conducting experiments, using safe procedures).**

CL.B.4.In.1 identify problems and examine alternative solutions.

CL.B.4.In.2 implement solutions to problems and evaluate effectiveness.

CL.B.4.Su.1 identify problems found in functional tasks—with guidance and support.

CL.B.4.Su.2 implement solutions to problems found in functional tasks—with guidance and support.

Indicate guidance and support necessary for mastery at supported level:

___ physical prompt

___ verbal prompt

___ visual prompt

___ assistive technology

___ supervision

___ other: _____

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- 1.1. Identify characteristics of major elements of the scientific process. (CL.B.4.In.1, CL.B.4.Su.1)

Specify: _____ using methods and tools of observation and measurement

_____ experimenting and reproducing results

_____ controlling conditions

_____ testing hypotheses and investigating

_____ determining cause and effect and making inferences

_____ drawing conclusions based on observations

_____ other: _____

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1.2. Identify basic apparatus and equipment used for scientific study.

- Specify: _____ beakers, test tubes, pipette
_____ microscope, magnifying glass, thermometer
_____ scales, other measurement devices
_____ other: _____

1.3. Identify and follow safety practices and considerations needed when conducting scientific activities. (CL.B.4.In.2, CL.B.4.Su.2)

- Specify: _____ wear protective goggles, clothing, gloves
_____ use and store chemicals appropriately
_____ handle materials and animals appropriately
_____ use equipment, including gas and electrical devices appropriately
_____ identify hazards and potentially dangerous situations—
flame, fumes, broken glass, poisons
_____ respond effectively to emergency situations
_____ other: _____

1.4. Follow a systematic approach using scientific concepts and processes to solve problems in accomplishing functional tasks (e.g., predicting what will happen if I put too much air in a bicycle tire, testing which type of battery will last longer in a portable CD player). (CL.B.4.In.1, CL.B.4.In.2, CL.B.4.Su.1, CL.B.4.Su.2)

- Specify: _____ determine the question to be answered
_____ select subjects, conditions, and treatments
_____ make reasonable hypothesis
_____ apply treatment or procedures to obtain result
_____ check results for accuracy and reliability
_____ explain results
_____ other: _____

2. Use skills to locate information and present ideas regarding knowledge about science and its application to personal life and the community.

- CL.B.1.In.1 identify and locate oral, print, or visual information for specified purposes.
CL.B.1.In.2 interpret and use oral, print, or visual information for specified purposes.
CL.B.1.In.3 organize and retrieve oral, print, or visual information for specified purposes.
CL.B.1.Su.1 identify and locate oral, print, or visual information to accomplish functional tasks—with guidance and support.
CL.B.1.Su.2 interpret and use oral, print, or visual information to accomplish functional tasks—with guidance and support.
CL.B.2.In.1 prepare oral, written, or visual information for expression or presentation.
CL.B.2.In.2 express oral, written, or visual information for specified purposes.
CL.B.2.Su.1 prepare oral, written, or visual information for expression—with guidance and support.
CL.B.2.Su.2 express oral, written, or visual information to accomplish functional tasks—with guidance and support.

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Indicate guidance and support necessary for mastery at supported level:

___ physical prompt ___ verbal prompt ___ visual prompt
___ assistive technology ___ supervision ___ other: _____

2.1. Identify general sources of information about science that are reliable and accurate to complete school assignments and functional tasks (e.g., looking up information about a type of fish, researching public issues). (CL.B.1.In.1, CL.B.1.Su.1)

Specify: ___ newspapers ___ magazines ___ television
 ___ radio ___ people ___ Internet
 ___ other: _____

2.2. Identify types of information in reference books or resources on science (e.g., descriptions and diagrams of scientific concepts, results of research, definitions). (CL.B.1.In.1, CL.B.1.Su.1)

Specify: ___ textbooks ___ encyclopedias ___ reference books
 ___ other: _____

2.3. Use information related to science from various types of books and resources. (CL.B.1.In.2, CL.B.1.Su.2)

Specify: ___ newspapers ___ magazines ___ television
 ___ radio ___ people ___ Internet
 ___ textbooks ___ encyclopedias ___ reference books
 ___ other: _____

2.4. Evaluate the correctness and accuracy of information in materials used in science (e.g., Does this information match other sources? Does this information appear to make sense?). (CL.B.1.In.2, CL.B.1.Su.2)

2.5. Use strategies to relate and integrate new information about science with own previous experiences. (CL.B.1.In.2, CL.B.1.Su.2)

Specify: ___ identify common elements or events
 ___ distinguish what is different
 ___ relate new information to concepts already understood
 ___ other: _____

2.6. Communicate information about science in an accurate, complete, and objective manner using written or verbal formats (e.g., tell another what you have learned, write a report for school, write a summary describing a field trip, write a description of the results of an experiment for the school's webpage). (CL.B.2.In.2, CL.B.2.Su.2)

Specify: ___ notes ___ summaries ___ reports
 ___ other: _____

2.7. Document activities or experiments performed accurately (e.g., keep an accurate record of observations, keep an accurate journal, keep track of daily measurements). (CL.B.2.In.1, CL.B.2.Su.1)

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2.8. Organize information about science based on intended use. (CL.B.1.In.3)

- Specify: _____ by date _____ by classification
 _____ by categories _____ by topics or events
 _____ by characteristics _____ by size
 _____ other: _____

3. Demonstrate awareness of plants and animals in the environment (e.g., basic needs of living things, relation to environment, life cycle).

Indicate guidance and support necessary for mastery at supported level:

- ___ physical prompt ___ verbal prompt ___ visual prompt
___ assistive technology ___ supervision ___ other: _____
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3.1. Identify major characteristics of living organisms.

- Specify: _____ basic needs and habitats—relation to environment
 _____ major functions—birth, growth and development, reproduction, and death
 _____ major structures—cells, tissues, organs, and systems
 _____ major classifications and groups—species, phylum, class
 _____ other: _____

Plant Life

3.2. Identify characteristics of plant life.

- Specify: _____ basic needs—air, water, light, and habitats
 _____ parts of a plant—cell, root, stem, leaf, flower, cone, fruit, seed
 _____ major types of plants—flowering, leafy, pine, cactus
 _____ characteristics and types of plants in the local environment
 _____ other: _____

3.3. Identify events in the life cycle of a plant and the process of plant reproduction.

3.4. Identify ways that humans or animals use plants for food, medicines, clothing, tools, building materials, and other types of products.

3.5. Identify how plants adapt structurally to their environment, including the effects of variations in the amount of water, heat, and light on plant growth.

3.6. Identify various structures and reactions of plants for survival (e.g., thorns, fold-up leaves, protective odor, bitter taste).

3.7. Identify common plants that are poisonous to humans and what to do when exposed to such plants (e.g., poinsettia, poison ivy, poison oak, poison sumac, mistletoe, toadstools, oleander).

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4. Demonstrate awareness of growth and development of human body systems and their functions relevant to personal needs (e.g., digestive system, reproduction, nutrition).

Indicate guidance and support necessary for mastery at supported level:

___ physical prompt ___ verbal prompt ___ visual prompt
___ assistive technology ___ supervision ___ other: _____

4.1. Demonstrate awareness of major body systems including their structures and functions (e.g., cells, tissues, organs).

Specify: ___ circulatory ___ respiratory ___ digestive
 ___ excretory ___ reproductive ___ nervous
 ___ skeletal ___ muscular ___ other: _____

4.2. Demonstrate awareness of how the various systems of the body are related to each other.

4.3. Demonstrate awareness of basic concepts of human growth and maturation.

Specify: ___ major stages of growth—infancy, childhood, adolescence, adulthood, old age
 ___ physical, mental, and emotional changes of humans
 ___ other: _____

4.4. Demonstrate awareness of basic concepts of heredity and reproduction.

Specify: ___ development of the reproductive system—males and females
 ___ process of fertilization and stages of pregnancy
 ___ the birth process
 ___ individual responsibilities in family planning
 ___ risks of diseases, tobacco use, alcohol use, and other drug use to the fetus
 ___ knowledge of heredity, i.e., characteristics that are inherited from parents
 ___ other: _____

4.5. Identify basic physical needs of the human body, including food, air, shelter, exercise, and rest. (IF.A.1.In.2, IF.A.1.Su.2)

4.6. Identify the effects of common diseases on systems of the human body. (IF.A.1.In.2, IF.A.1.Su.2)

Specify: ___ common communicable diseases and symptoms
 ___ life threatening diseases—cancer, heart disease, emphysema
 ___ sexually transmitted diseases, including HIV/AIDS
 ___ other: _____

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- 4.7. Demonstrate awareness of the effects of nutrition on systems of the human body. (IF.A.1.In.2, IF.A.1.Su.2)
Specify: _____ using the Food Guide Pyramid for a balanced diet
_____ identifying common effects of malnutrition
_____ distinguishing nutrient-dense from nutrient-poor foods
_____ identifying the impact of emotional problems on nutrition
_____ other: _____
- 4.8 Demonstrate awareness of the effects of drugs and other chemicals on systems of the human body. (IF.A.1.In.2, IF.A.1.Su.2)
Specify: _____ use of prescription and nonprescription drugs
_____ allergic drug reactions
_____ impact of tobacco and alcohol
_____ relation of emotional and social problems with alcohol and other drug abuse
_____ other: _____
- 4.9. Demonstrate awareness of the effects of exercise and rest on systems of the human body. (IF.A.1.In.2, IF.A.1.Su.2)
Specify: _____ benefits of a regular exercise program—weight control, stamina
_____ types of exercise—aerobic, strength-conditioning
_____ use of exercise to relieve stress
_____ importance of sleep and rest in maintaining body’s functions
_____ impact of chronic fatigue on body’s functions
_____ other: _____
- 4.10. Demonstrate awareness of the effects of emotional and social factors on systems of the human body. (IF.A.1.In.2, IF.A.1.Su.2)
Specify: _____ effects of positive outlook and social relationships on health and illness
_____ negative impacts of emotional and social factors—
eating disorders, digestive disorders, addictions
_____ impact of positive and negative role models and peer pressure
_____ other: _____
- 4.11. Demonstrate awareness of the importance of maintaining good personal hygiene. (IF.A.1.In.2, IF.A.1.Su.2)
Specify: _____ acceptable personal hygiene habits
_____ acceptable personal appearance
_____ importance to physical health
_____ importance to social relationships
_____ other: _____
- 4.12. Demonstrate awareness of first aid techniques. (IF.A.1.In.2, IF.A.1.Su.2)
Specify: _____ stopping bleeding and applying bandages
_____ taking care of burns, poisons, and wounds
_____ using cardiopulmonary resuscitation (CPR)
_____ getting help when needed
_____ other: _____

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- 4.13. Identify sources of medical assistance and emergency help (e.g., doctors, dentists, hospitals, clinics, support groups, fitness centers, health care agencies, rehabilitation centers, 911, police, fire department, emergency centers). (IF.A.1.In.1, IF.A.1.Su.1)

5. Demonstrate awareness of the ecology of natural resources and the importance of protection of the natural systems in the local and regional environment (e.g., recycling, human responsibility for the environment).

Indicate guidance and support necessary for mastery at supported level:

___ physical prompt ___ verbal prompt ___ visual prompt
___ assistive technology ___ supervision ___ other: _____

- 5.1. Identify characteristics of the physical environment of the earth.
Specify: ___ composition of land—soil, sand, rocks, minerals
 ___ composition of the ocean and other bodies of water
 ___ physical features of the earth’s surface—topography of land and sea
 ___ forces that change the surface of the earth—weather, man, earthquake, erosion
 ___ other: _____
- 5.2. Demonstrate awareness of the water cycle and its impact on water resources (e.g., relation to climatic patterns, renewal of water supplies).
- 5.3. Identify the importance of the food chain and the global food web and their impact on resources.
Specify: ___ producers, consumers, decomposers
 ___ effects of human activity on food chains
 ___ other: _____
- 5.4. Demonstrate awareness of how the surface of the Earth changes.
Specify: ___ slow processes—erosion, weather
 ___ fast processes—earthquakes, landslides
 ___ other: _____
- 5.5. Demonstrate awareness of the effects of human activity on various habitats and the physical environment, and the need for environmental protection.
- 5.6. Demonstrate awareness of major types of renewable and nonrenewable natural resources and the need for conservation measures.
- 5.7. Demonstrate awareness of major types of pollution and related means of prevention or control.
- 5.8. Identify techniques and benefits of recycling various kinds of materials.
Specify: ___ paper ___ glass ___ cans ___ plastic
 ___ other: _____

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- 5.9. Identify techniques and legal requirements related to the disposal of certain hazardous waste materials.
Specify: _____ oil and gas _____ cleaning products _____ paints and polishes
 _____ batteries _____ fluorescent bulbs _____ aerosol cans
 _____ other _____

6. Demonstrate awareness of the concepts of matter, energy, force, and motion as they relate to daily living (e.g., changing states of matter; relationships among energy, force, and work; simple machines).

Indicate guidance and support necessary for mastery at supported level:

___ physical prompt ___ verbal prompt ___ visual prompt
___ assistive technology ___ supervision ___ other: _____

- 6.1. Demonstrate awareness of different states of matter—solids, liquids, and gases.
- 6.2. Demonstrate awareness of types of changes in states of matter and how these changes occur and relate to loss of heat (energy).
Specify: _____ physical—breaking down, freezing, boiling, vaporizing
 _____ chemical—rust, decomposing, burning
- 6.3. Identify the basic concepts of and the relationships among energy, force, and work.
- 6.4. Identify the major forms of energy—sound, heat, mechanical.
- 6.5. Demonstrate awareness of different sources and forms of energy (e.g., solar, water, wind, nuclear, fossil).
- 6.6. Demonstrate awareness of the importance of conservation of energy resources.
- 6.7. Demonstrate awareness of electricity as a type of energy.
Specify: _____ alternating and direct currents
 _____ types of circuits—series and parallel
 _____ conductors and nonconductors of electricity
 _____ uses of electricity in daily activities and work
 _____ sources of electrical power—circuits, batteries
 _____ potential safety hazards—overloaded circuits, exposed wires, fire
 _____ other: _____
- 6.8. Demonstrate awareness of the properties of magnetism.
Specify: _____ magnetic and nonmagnetic materials
 _____ uses of magnetism in daily activities and work
 _____ other: _____

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6.9. Demonstrate awareness of the properties of gravity.

- Specify: _____ nature of gravity on earth and in space
_____ effects of gravity
_____ other: _____

6.10. Demonstrate awareness of simple machines and their relation to work.

- Specify: _____ concept and purpose
_____ types of simple machines—lever, pulley, inclined plane
_____ uses of simple machines in daily activities and work
_____ other: _____

6.11. Demonstrate awareness of the effects of force on motion.

- Specify: _____ friction, gravity, and inertia
_____ identify types of movement used for work—pushing, pulling, lifting
_____ other: _____

6.12. Demonstrate awareness of the concept of light.

- Specify: _____ properties of light including the color spectrum
_____ natural and artificial light
_____ transparent, translucent, opaque
_____ how the eye uses light to see
_____ potential hazards of bright lights
_____ other: _____

6.13. Demonstrate awareness of the concept of sound.

- Specify: _____ properties of sound waves and vibration
_____ how the ear hears sound
_____ potential hazards of loud noises
_____ other: _____

7. Demonstrate awareness of the solar system in relation to the environment and daily living (e.g., relationships among sun, moon, and Earth; effect of those relationships on day/night and seasons of the year).

Indicate guidance and support necessary for mastery at supported level:

- ___ physical prompt ___ verbal prompt ___ visual prompt
___ assistive technology ___ supervision ___ other: _____
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7.1. Demonstrate awareness of the Earth and its place in the universe.

- Specify: _____ sun, moon, and Earth
_____ other major celestial bodies—planets, stars, galaxies
_____ functions of manmade satellites and rockets
_____ other: _____

7.2. Demonstrate awareness of the Earth's movement in the solar system, including its effect on day, night, month, year, and seasons.

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- 7.3. Demonstrate awareness of the Earth’s relation to the sun, including the sun’s effect on seasonal changes in the weather by providing heat and light.
- 7.4. Demonstrate awareness of the cause of the eclipse of the sun and moon.
- 7.5. Demonstrate awareness of the exploration and investigation of space.

8. Demonstrate awareness of climate and weather patterns and predictions relevant to daily living (e.g., weather measurements, preparation for storms).

- IF.B.2.In.3 respond effectively to unexpected events and potentially harmful situations.
- IF.B.2.Su.3 respond effectively to unexpected events and potentially harmful situations— with guidance and support.

Indicate guidance and support necessary for mastery at supported level:

- ___ physical prompt ___ verbal prompt ___ visual prompt
 - ___ assistive technology ___ supervision ___ other: _____
-

- 8.1. Demonstrate awareness of characteristics of major types of climate (e.g., tropical, moderate, arctic).
- 8.2. Demonstrate awareness of characteristics of major types of weather.
Specify: ___ temperature, precipitation, wind, clouds
 ___ seasonal changes in the weather
 ___ other: _____
- 8.3. Identify methods used to measure the weather and how that information is used.
Specify: ___ temperature, precipitation, wind
 ___ meteorology and weather predictions
 ___ other: _____
- 8.4. Demonstrate awareness of the impact of climate on human activity.
- 8.5. Demonstrate awareness of the impact of weather on humans. (IF.B.2.In.3, IF.B.2.Su.3)
Specify: ___ need to select suitable clothing based on the weather
 ___ effects on moods and emotions
 ___ effects on activities
 ___ effects on economy
 ___ other: _____
- 8.6. Identify characteristics of types of adverse weather.
Specify: ___ thunderstorms, tornadoes, hurricanes, floods, blizzards
 ___ other: _____
- 8.7. Identify appropriate responses to adverse weather conditions. (IF.B.2.In.3, IF.B.2.Su.3)

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Specify: _____ heeding warnings, evacuation, following recommended procedures
_____ other: _____

9. Demonstrate awareness of the application of scientific concepts and processes in personal life, the community, and the world of work (e.g., use of senses and tools to obtain information, importance of accuracy; understanding patterns of events).

CL.C.1.In.1 use knowledge of occupations and characteristics of the workplace in making career choices.

CL.C.1.Su.1 recognize expectations of occupations and characteristics of the workplace in making career choices—with guidance and support.

Indicate guidance and support necessary for mastery at supported level:

___ physical prompt ___ verbal prompt ___ visual prompt
___ assistive technology ___ supervision ___ other: _____

Science Occupations

9.1. Identify general characteristics of the career cluster related to science (e.g., technical knowledge and expertise, many related support positions). (CL.C.1.In.1, CL.C.1.Su.1)

9.2. Identify specific jobs associated with the career cluster related to science (e.g., health services, agriculture, horticulture, animal care, meteorology, engineering). (CL.C.1.In.1, CL.C.1.Su.1)

Specify: _____ entry level _____ technical support positions
_____ advanced level _____ professional positions
_____ other: _____

9.3. Identify advantages and disadvantages of specified occupations in the career cluster related to science (e.g., advantages—jobs are widely available, many different levels of jobs are available; disadvantages—many positions require extensive training). (CL.C.1.In.1, CL.C.1.Su.1)

9.4. Identify interests and skills generally needed to fulfill performance requirements for specific jobs within the career cluster related to science (e.g., problem solving, making careful observations). (CL.C.1.In.1, CL.C.1.Su.1)

9.5. Identify educational and training requirements for jobs within the career cluster related to science (e.g., technical training, degree programs, on-the-job training). (CL.C.1.In.1, CL.C.1.Su.1)

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Using Science in Everyday Life

- 9.6. Demonstrate awareness that scientific study is one way of answering questions and explaining the natural world.
- 9.7. Demonstrate awareness that science and technology have improved many aspects of daily living, including transportation, health, sanitation, and communication.
- 9.8. Demonstrate awareness that changes in scientific knowledge occur as a result of investigation, experimentation, and chance events.
- 9.9. Demonstrate awareness that natural events are predictable and occur in patterns (e.g., tides, seasons of the year, life cycle).
- 9.10. Identify situations in daily life when scientific laws and principles are applied (e.g., laws of force and motion—magnetism, velocity, aerodynamics, gravity).