

IPS.B: MHS Integrated Physical Science.B Skills Tracker

Name:

Term: Winter Spring

Core Learning Targets: Science Inquiry:

SI.1 Can develop a question AND hypothesis, along with supporting background observations and research, that can be answered through a scientific investigation (SC.CM.SI.01)

Key Vocabulary: independent and dependent variables
hypothesis

Text Support: **Glencoe: Physical Science with Earth Science**
1.1 The methods of science (p6)

Assessment: Project: Inquiry Lab write-up
Other: Other Lab write-up

Assessment Scores				
				5. Extends concepts
				4. Concept mastery
				3. Concept understanding
				2. Knows key vocabulary
				1. Some knowledge
1	2	3	4	Trials

SI.2 Can design a controlled experiment to test a hypothesis and answer an experimental question (SC.CM.SI.02)

Support Skills: writing a step-by-step procedure

Key Vocabulary: controlled experiment
variable, values, constant variables

Text Support: **Glencoe: Physical Science with Earth Science**
1.1 The methods of science (p6)

Assessment: Project: Inquiry Lab write-up
Other: Other Lab write-up

Assessment Scores				
				5. Extends concepts
				4. Concept mastery
				3. Concept understanding
				2. Knows key vocabulary
				1. Some knowledge
1	2	3	4	Trials

SI.3 Can collect, organize and present data in ways that support analysis and interpretation (SC.CM.SI.03)

Support Skills: designing data tables
measuring accurately
graphing data appropriately: hi-mean-lo; bar; line; pie chart

Key Vocabulary: mean, median, mode
outliers

Text Support: **Glencoe: Physical Science with Earth Science**
1.1 The methods of science (p6); 1.3: Communicating with Graphs (p22)

Assessment: Project: Inquiry Lab write-up
Other: Other Lab write-up

Assessment Scores				
				5. Extends concepts
				4. Concept mastery
				3. Concept understanding
				2. Knows key vocabulary
				1. Some knowledge
1	2	3	4	Trials

SI.4 Can summarize and analyze data, and propose scientific explanations based on evidence (SC.CM.SI.04)

Support Skills: analyzing graphs; summarizing
identifying limitations and/or errors in experimental procedures

Key Vocabulary: positive correlation (direct relationship)
negative correlation (inverse relationship)

Text Support: **Glencoe: Physical Science with Earth Science**
1.1 The methods of science (p6)

Assessment: Project: Inquiry Lab write-up
Other: Other Lab write-up

Assessment Scores				
				5. Extends concepts
				4. Concept mastery
				3. Concept understanding
				2. Knows key vocabulary
				1. Some knowledge
1	2	3	4	Trials

Core Learning Targets: Content Standards

CS.B.1 Can describe the organization of matter, from base components* to atoms, molecules, and compounds (SC.CM.PS.01.01)

* protons, neutrons, electrons

Key Vocabulary: nucleus, electron cloud
protons, neutrons, electrons
element, molecule, compound
neutral atom, ion, isotope

Text Support: **Glencoe: Physical Science with Earth Science**
18.1 Composition of Matter (p552); 19.1 Structure of the Atom (p576): *The changing atomic model (p581-583)*;

Assessment: Project: Labeled diagram of an element, ion, isotope
Other: 3-week assessment

Assessment Scores				
				5. Extends concepts
				4. Concept mastery
				3. Concept understanding
				2. Knows key vocabulary
				1. Some knowledge
1	2	3	4	Trials

CS.B.2 Can use the periodic table to identify the physical and chemical properties of elements (SC.CM.PS.01.02)

Key Vocabulary: atomic number, atomic mass, mass number
electron energy level, electron shell, valence electrons
period, family (group)
metals, nonmetals, noble gasses

Text Support: **Glencoe: Physical Science with Earth Science**
19.2 Masses of Atoms (p584); 19.3 The Periodic Table (p588)

Assessment: Project: Element Square with detailed profile of element
Other: midterm assessment

Assessment Scores				
				5. Extends concepts
				4. Concept mastery
				3. Concept understanding
				2. Knows key vocabulary
				1. Some knowledge
1	2	3	4	Trials

Core Learning Targets: Content Standards cont...

CS.B.3 Can describe the effect of variables such as temperature, pressure and concentration on the rate of chemical reactions (SC.CM.PS.02.04)

Key Vocabulary: products, reactants, coefficient, subscript
balanced equation, law of conservation of mass

Text Support: **Glencoe: Physical Science with Earth Science**
18.2 Properties of Matter: *Chemical Properties and Changes* (p563-564)
22.1 Stability in Bonding (p688); 22.2 Types of Bonds (p694);
23.1 Chemical Changes (selectively) (p720); 23.2 Chemical Equations (p726); 23.3 Classifying Chemical Reactions (p 730);
Chemical Reaction Rates (738)

Assessment: Project: Inquiry Lab write-up
Other: midterm assessment

Assessment Scores				
				5. Extends concepts
				4. Concept mastery
				3. Concept understanding
				2. Knows key vocabulary
				1. Some knowledge
1	2	3	4	Trials

CS.B.4 Can describe the theories* of Earth's origin and the scientific evidence that supports them
*Big Bang, Stellar formation, Nebular Hypothesis (SC.CM.ES.03.03)

Key Vocabulary: electromagnetic waves, frequency, redshift, blueshift
nebular hypothesis, planetary accretion

Text Support: **Glencoe: Physical Science with Earth Science**
26.4: Cosmology (p 836); 26.3: Galaxies and the Milky Way (p833)
8.2 Evolution of Stars (p823); 8.1: Planet Motion (p218);
7.1: Earth in Space (p186); 7.3: Earth's Moon (p197)

Review: 15.1: What are electromagnetic waves? (p456); 15.2: The electromagnetic spectrum (p462)

Assessment: Project: Life-cycle of a star/solar system
Other: 9-week assessment

Assessment Scores				
				5. Extends concepts
				4. Concept mastery
				3. Concept understanding
				2. Knows key vocabulary
				1. Some knowledge
1	2	3	4	Trials

CS.B.5 Can describe the role of gravity as a universal force ($g=m/d$) organizing matter
*accretion, spheres, stellar formation, orbits, solar systems, galaxies, clusters (SC.CM.ES.04)

Key Vocabulary: gravity=mass/distance, gravity, orbit

Text Support: **Glencoe: Physical Science with Earth Science**
4.2 Gravity (p105)

Assessment: Project:
Other: 9-week assessment

Assessment Scores				
				5. Extends concepts
				4. Concept mastery
				3. Concept understanding
				2. Knows key vocabulary
				1. Some knowledge
1	2	3	4	Trials

Core Learning Targets: Content Standards cont...

CS.B.6 Can apply the Theory of Plate Tectonics to explain volcanic eruptions, earthquakes, and mountain building (SC.CM.ES.03.04)

Key Vocabulary: crust, mantle, liquid outer core, solid inner core
epicenter, focus, seismic waves, P-waves, S-waves
lithosphere, asthenosphere, mesosphere
continental drift, seafloor spreading, plate tectonics
continental crust (granite), oceanic crust (basalt)
convection, convection current/convection cell
divergent boundary (constructive boundary), mid-ocean ridge, rift valley
convergent boundary (destructive boundary), deep sea trench, subduction, subduction zone, subduction volcano
transform boundary, San Andreas fault; hot spot volcano; folded mountains

Text Support: **Glencoe: Physical Science with Earth Science**
12.1 Evolution of the Earth's Crust (p354); 12.2 Earthquakes (p362); 12.3 Earth's Interior (p370); 12.4 Volcanoes (p373)

Assessment: Project: Descriptive diagram of three plate boundaries; Tectonic profile of geographic region (ex: Japan)
Other: final assessment

Assessment Scores				
				5. Extends concepts
				4. Concept mastery
				3. Concept understanding
				2. Knows key vocabulary
				1. Some knowledge
1	2	3	4	Trials

CS.B.7 Can use rock sequences and fossil evidence to determine geologic history (SC.CM.ES.03.01 and SC.CM.ES.03.02)

Key Vocabulary: rock cycle, igneous rock (intrusive, extrusive), magma, lava
sedimentary rock, weathering, erosion, deposition, cementation
metamorphic rock;
relative dating, geologic column, absolute dating, radioactive decay
uniformitarianism, superposition, unconformities, intrusion

Text Support: **Glencoe: Physical Science with Earth Science**
20.2 Igneous Rocks (p617); 20.3 Sedimentary Rocks (p624); 20.4 Metamorphic Rocks and the Rock Cycle (p630)
21.4 Geologic Time (p669); 25.2 Nuclear Decay (p791); Radioactive Half-Life and Radioactive Dating (p794)

Assessment: Project: Interpret geological profile (ex: Grand Canyon)
Other: final assessment

Assessment Scores				
				5. Extends concepts
				4. Concept mastery
				3. Concept understanding
				2. Knows key vocabulary
				1. Some knowledge
1	2	3	4	Trials

CS.B.8 Can apply the concept of density ($d=m/v$) to explain Earth's origin and structure, plate motion, and the origin of winds and currents by differential heating (SC.CM.ES.02.03)

Key Vocabulary: density=mass/volume, buoyancy, equilibrium, water displacement
differential heating, convection, convection current, convection cell

Text Support: **Glencoe: Physical Science with Earth Science**
Measuring Matter: Density (p19); MiniLAB (p19)
Convection, Convection Currents (p267); Lab: Convection in Fluids (p271)

Assessment: Project: Model the affect of heat on fluids
Other: final assessment

Assessment Scores				
				5. Extends concepts
				4. Concept mastery
				3. Concept understanding
				2. Knows key vocabulary
				1. Some knowledge
1	2	3	4	Trials

Other Skills: Career Related Learning Standards

CRLS.1 Personal Management: Exhibit behavior appropriate to work place

Identify tasks that need to be done and initiate action to complete the tasks.
 Plan, organize, and complete projects and assigned tasks on time, meeting agreed upon standards of quality.
 Take responsibility for decisions and actions and anticipate consequences of decisions and actions.
 Maintain regular attendance and be on time. Maintain appropriate interactions with colleagues.
 Assessment: Personal reflection; teacher and colleague observations

Assessment Scores				
				3. Exceeds standards
				2. Meets standard
				1. Below standard
3w	6w	9w	12	Weeks

CRLS.2 Problem Solving: Apply decision-making and problem solving techniques

Identify problems and locate information that may lead to solutions.
 Identify alternatives to solve problems. Assess the consequences of the alternatives.
 Select and explain a proposed solution and course of action.
 Develop a plan to implement the selected course of action.
 Assess results and take corrective action.
 Assessment: Personal reflection; teacher and colleague observations

Assessment Scores				
				3. Exceeds standards
				2. Meets standard
				1. Below standard
3w	6w	9w	12	Weeks

CRLS.3 Communication: Demonstrate principles and skills of effective communication to give and receive information: listening, reading, speaking, writing and using media.

Locate, process, and convey information using traditional and technological tools.
 Listen attentively and summarize key elements of verbal and non-verbal communication.
 Give and receive feedback in a positive manner.
 Read technical/instructional materials for information and apply to specific tasks.
 Write clearly and accurately.
 Speak clearly, accurately, and in a manner appropriate for the intended audience
 Assessment: Personal reflection; teacher and colleague observations

Assessment Scores				
				3. Exceeds standards
				2. Meets standard
				1. Below standard
3w	6w	9w	12	Weeks

CRLS.4 Teamwork: Demonstrate effective teamwork

Demonstrate skills that improve team effectiveness:
 negotiation, compromise, consensus building, conflict management,
 shared decision- making and goal-setting
 Assessment: Personal reflection; teacher and colleague observations

Assessment Scores				
				3. Exceeds standards
				2. Meets standard
				1. Below standard
3w	6w	9w	12	Weeks

Other Skills: Essential Skills

ES.1 Read and comprehend a variety of text

Application: Text: **Glencoe: Physical Science with Earth Science**
 Handouts, Worksheets
 Lab Instructions
 Internet Research

Assessment: Personal reflection; teacher and colleague observations

Assessment Scores				
				3. Exceeds standards
				2. Meets standard
				1. Below standard
3w	6w	9w	12	Weeks

ES.2 Write clearly and accurately

Application: Inquiry Lab
 FOODs, WUPs, Lab write ups, GYROs
 Class assignments
 Personal projects

Assessment: Personal reflection; teacher and colleague observations

Assessment Scores				
				3. Exceeds standards
				2. Meets standard
				1. Below standard
3w	6w	9w	12	Weeks

ES.3 Apply mathematics in a variety settings

Application: Measure accurately: length (cm), temp (°C), mass (g), volume (ml)
 Design data tables to organize measurements
 Calculate accurately: density (g/ml), mean, percent difference
 Analyze accurately: median, mode, outliers
 Graphing data appropriately: bar, line, pie chart, hi-mean-lo;

Assessment: Personal reflection; teacher and colleague observations

Assessment Scores				
				3. Exceeds standards
				2. Meets standard
				1. Below standard
3w	6w	9w	12	Weeks