

Properties of Matter

Process: Tools to Know		Notes	Check Up		
Investigations	☐ I can plan and conduct investigations and design solutions. 8.1(A), 8.1(B), 8.1(C), 8.2(D), 8.5(A)				
Tools and Equipment	☐ I can use appropriate tools and equipment. 8.1(D)				
Information	☐ I can collect and record information. 8.1(E), 8.1(F)				

Content		Notes	Check Up		
Classification of Matter	☐ I can identify elements on the periodic table as: 6.6(C) ☐ metals ☐ metals ☐ nonmetals ☐ nonmetals based on their: ☐ physical properties ☐ importance to modern life				
	☐ I can explain by modeling how matter is classified as: 8.6(A) ☐ elements ☐ compounds ☐ homogeneous mixtures OR ☐ heterogeneous mixtures				
Physical and Chemical Properties	☐ I can compare the density of substances relative to various fluids. 6.6(D)				
	☐ I can describe the properties of: ☐ cohesion ☐ adhesion ☐ surface tension in water and relate to observable phenomena. 8.6(C)				
	☐ I can compare and contrast the properties of acids and bases, including pH relative to water. 8.6(D)				
Atomic Reactivity	☐ I can use the periodic table to identify the atoms involved in chemical reactions. 8.6(B)				

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Properties of Matter (continued)

Content		Notes	Check Up		
Chemical Formulas, Reactions, and Equations	☐ I can investigate how mass is conserved in chemical reactions. 8.6(E)				
	☐ I can relate conservation of mass to the rearrangement of atoms using chemical equations, including photosynthesis. 8.6(E)				
	☐ I can use the periodic table to identify: 7.6(B) ☐ the atoms within a chemical formula ☐ the number of each kind of atom within a chemical formula				
	☐ I can distinguish between physical and chemical changes in matter. 7.6(C)				
	☐ I can identify the formation of a new substance by using the evidence of a possible chemical change, including: 6.6(E) ☐ production of a gas ☐ change in thermal energy ☐ production of a precipitate ☐ color change				

Process: Ways to Show		Notes	Check Up		
Models/ Information	☐ I can develop and use models/information. 8.1(G), 8.1(H), 8.2(A), 8.4(B), 8.5(C)				
Data	☐ I can analyze and interpret data. 8.2(B), 8.2(C)				
Explanations/ Solutions	☐ I can develop and communicate explanations/ solutions. 8.3(A), 8.3(B), 8.3(C), 8.5(A), 8.5(B)				
Interdependence	☐ I can explain interdependence. 8.5(D), 8.5(E), 8.5(F), 8.5(G)				
Science and the Real World	☐ I can connect science with the real world. 8.4(A), 8.4(C)				

Force and Motion

Process: Tools to Know		Notes	Check Up		
Investigations	☐ I can plan and conduct investigations and design solutions. 8.1(A), 8.1(B), 8.1(C), 8.2(D), 8.5(A)				
Tools and Equipment	☐ I can use appropriate tools and equipment. 8.1(D)				
Information	☐ I can collect and record information. 8.1(E), 8.1(F)				

Content		Notes	Check Up		
Force	☐ I can calculate and analyze how the acceleration of an object is dependent upon the net force acting on the object and the mass of the object using Newton's Second Law of Motion. 8.7(A)				
	☐ I can investigate and describe how Newton's three laws of motion act simultaneously within systems. 8.7(B)				
	☐ I can identify and explain how forces act on objects using real-world applications: 6.7(A) ☐ gravity ☐ friction ☐ magnetism ☐ applied forces ☐ normal forces				
	☐ I can calculate the net force on an object in a horizontal or vertical direction using diagrams. 6.7(B)				
	☐ I can determine if the forces are balanced or unbalanced. 6.7(B)				

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Force and Motion (continued)

Content		Notes	Check Up		
Linear Motion	☐ I can calculate average speed using: 7.7(A) ☐ distance measurements from investigations ☐ time measurements from investigations				
	☐ I can distinguish between speed and velocity in linear motion in terms of: 7.7(B) ☐ distance ☐ displacement ☐ direction				
	☐ I can: ☐ measure ☐ record ☐ interpret an object's motion using distance-time graphs. 7.7(C)				

Process: Ways to Show		Notes	Check Up		
Models/ Information	☐ I can develop and use models/information. 8.1(G), 8.1(H), 8.2(A), 8.4(B), 8.5(C)				
Data	☐ I can analyze and interpret data. 8.2(B), 8.2(C)				
Explanations/ Solutions	☐ I can develop and communicate explanations/solutions. 8.3(A), 8.3(B), 8.3(C), 8.5(A), 8.5(B)				
Interdependence	☐ I can explain interdependence. 8.5(D), 8.5(E), 8.5(F), 8.5(G)				
Science and the Real World	☐ I can connect science with the real world. 8.4(A), 8.4(C)				

Energy

Process: Tools to Know		Notes	Check Up		
Investigations	☐ I can plan and conduct investigations and design solutions. 8.1(A), 8.1(B), 8.1(C), 8.2(D), 8.5(A)				
Tools and Equipment	☐ I can use appropriate tools and equipment. 8.1(D)				
Information	☐ I can collect and record information. 8.1(E), 8.1(F)				

Content		Notes	Check Up		
Characteristics of Waves	☐ I can compare the characteristics of amplitude, frequency, and wavelength in transverse waves, including the electromagnetic spectrum. 8.8(A)				
Energy	☐ I can investigate methods of thermal energy transfer into and out of systems, including: 7.8(A) ☐ conduction ☐ convection ☐ radiation				
	☐ I can explain the relationship between temperature and the kinetic energy of the particles within a substance. 7.8(C)				
	☐ I can describe how energy is conserved in systems through: 6.8(B) ☐ transfers ☐ transformations				
	☐ I can explain how energy is transferred through: 6.8(C) ☐ transverse waves ☐ longitudinal waves				
	☐ I can explain the use of electromagnetic waves in applications. 8.8(B)				

Process: Ways to Show		Notes	Check Up		
Models/Information	☐ I can develop and use models/information. 8.1(G), 8.1(H), 8.2(A), 8.4(B), 8.5(C)				
Data	☐ I can analyze and interpret data. 8.2(B), 8.2(C)				
Explanations/Solutions	☐ I can develop and communicate explanations/solutions. 8.3(A), 8.3(B), 8.3(C), 8.5(A), 8.5(B)				
Interdependence	☐ I can explain interdependence. 8.5(D), 8.5(E), 8.5(F), 8.5(G)				
Science and the Real World	☐ I can connect science with the real world. 8.4(A), 8.4(C)				

The Universe

Process: Tools to Know		Notes	Check Up		
Investigations	☐ I can plan and conduct investigations and design solutions. 8.1(A), 8.1(B), 8.1(C), 8.2(D), 8.5(A)				
Tools and Equipment	☐ I can use appropriate tools and equipment. 8.1(D)				
Information	☐ I can collect and record information. 8.1(E), 8.1(F)				

Content		Notes	Check Up		
Stars	☐ I can describe the life cycle of stars. 8.9(A)				
	☐ I can compare and classify stars using the Hertzsprung-Russell diagram. 8.9(A)				
Galaxies	☐ I can categorize galaxies as spiral, elliptical, and irregular. 8.9(B)				
	☐ I can locate Earth's solar system within the Milky Way galaxy. 8.9(B)				
Theories of the Origins of the Universe	☐ I can research and analyze scientific data used as evidence to develop scientific theories to describe the origin of the universe. 8.9(C)				
Seasons, Tides, and Gravity	☐ I can describe how gravity governs motion within Earth's solar system. 7.9(B)				
	☐ I can model and illustrate how the tilted Earth revolves around the Sun, causing changes in seasons. 6.9(A)				
	☐ I can describe and predict how the positions of the Earth, Sun, and Moon cause daily, spring, and neap cycles of ocean tides due to gravitational forces. 6.9(B)				

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The Universe (continued)

Content		Notes	Check Up		
Earth's Dynamic Layers	☐ I can describe how plate tectonics causes: 7.10(B) ☐ ocean basin formation ☐ earthquakes ☐ mountain building ☐ volcanic eruptions, including: ☐ super volcanoes ☐ hot spots				
	☐ I can describe the evidence that supports that Earth has changed over time, including: 7.10(A) ☐ fossil evidence ☐ plate tectonics ☐ superposition				
	☐ I can model and describe the layers of Earth: 6.10(B) ☐ inner core ☐ outer core ☐ mantle ☐ crust				

Process: Ways to Show		Notes	Check Up		
Models/ Information	☐ I can develop and use models/information. 8.1(G), 8.1(H), 8.2(A), 8.4(B), 8.5(C)				
Data	☐ I can analyze and interpret data. 8.2(B), 8.2(C)				
Explanations/ Solutions	☐ I can develop and communicate explanations/solutions. 8.3(A), 8.3(B), 8.3(C), 8.5(A), 8.5(B)				
Interdependence	☐ I can explain interdependence. 8.5(D), 8.5(E), 8.5(F), 8.5(G)				
Science and the Real World	☐ I can connect science with the real world. 8.4(A), 8.4(C)				

Weather

Process: Tools to Know		Notes	Check Up		
Investigations	☐ I can plan and conduct investigations and design solutions. 8.1(A), 8.1(B), 8.1(C), 8.2(D), 8.5(A)				
Tools and Equipment	☐ I can use appropriate tools and equipment. 8.1(D)				
Information	☐ I can collect and record information. 8.1(E), 8.1(F)				

Content		Notes	Check Up		
Solar Energy, Hydrosphere, and Atmosphere Interactions	☐ I can describe how energy from the Sun, hydrosphere, and atmosphere interact and influence weather. 8.10(A)				
	☐ I can identify global patterns of atmospheric movement and how they influence local weather. 8.10(B)				
	☐ I can describe the interactions between ocean currents and air masses that produce tropical cyclones, including typhoons and hurricanes. 8.10(C)				

Process: Ways to Show		Notes	Check Up		
Models/Information	☐ I can develop and use models/information. 8.1(G), 8.1(H), 8.2(A), 8.4(B), 8.5(C)				
Data	☐ I can analyze and interpret data. 8.2(B), 8.2(C)				
Explanations/Solutions	☐ I can develop and communicate explanations/solutions. 8.3(A), 8.3(B), 8.3(C), 8.5(A), 8.5(B)				
Interdependence	☐ I can explain interdependence. 8.5(D), 8.5(E), 8.5(F), 8.5(G)				
Science and the Real World	☐ I can connect science with the real world. 8.4(A), 8.4(C)				

Climatic Influences

Process: Tools to Know		Notes	Check Up		
Investigations	☐ I can plan and conduct investigations and design solutions. 8.1(A), 8.1(B), 8.1(C), 8.2(D), 8.5(A)				
Tools and Equipment	☐ I can use appropriate tools and equipment. 8.1(D)				
Information	☐ I can collect and record information. 8.1(E), 8.1(F)				

Content		Notes	Check Up		
Climatic Influences	☐ I can describe how energy from the Sun, hydrosphere, and atmosphere interact and influence climate. 8.10(A)				
	☐ I can use scientific evidence to describe how natural events, including: ☐ volcanic eruptions ☐ meteor impacts ☐ abrupt changes in ocean currents ☐ the release and absorption of greenhouse gases influence climate. 8.11(A)				
	☐ I can use scientific evidence to describe how human activities, including: ☐ the release of greenhouse gases ☐ deforestation ☐ urbanization can influence climate. 8.11(B)				
The Carbon Cycle	☐ I can describe the carbon cycle. 8.11(C)				

Process: Ways to Show		Notes	Check Up		
Models/Information	☐ I can develop and use models/information. 8.1(G), 8.1(H), 8.2(A), 8.4(B), 8.5(C)				
Data	☐ I can analyze and interpret data. 8.2(B), 8.2(C)				
Explanations/Solutions	☐ I can develop and communicate explanations/solutions. 8.3(A), 8.3(B), 8.3(C), 8.5(A), 8.5(B)				
Interdependence	☐ I can explain interdependence. 8.5(D), 8.5(E), 8.5(F), 8.5(G)				
Science and the Real World	☐ I can connect science with the real world. 8.4(A), 8.4(C)				

Organisms and Environments

Process: Tools to Know		Notes	Check Up		
Investigations	☐ I can plan and conduct investigations and design solutions. 8.1(A), 8.1(B), 8.1(C), 8.2(D), 8.5(A)				
Tools and Equipment	☐ I can use appropriate tools and equipment. 8.1(D)				
Information	☐ I can collect and record information. 8.1(E), 8.1(F)				

Content		Notes	Check Up		
Flow of Energy	☐ I can describe how the available energy decreases in successive trophic levels in energy pyramids. 7.12(A)				
	☐ I can explain how disruptions such as population changes, natural disasters, and human intervention impact the transfer of energy in food webs in ecosystems. 8.12(A)				
Ecosystem Stability	☐ I can describe how primary and secondary ecological succession affect populations and species diversity after ecosystems are disrupted by natural events or human activity. 8.12(B)				
	☐ I can describe how biodiversity contributes to the stability and sustainability of an ecosystem and the health of the organisms within the ecosystem. 8.12(C)				
	☐ I can investigate how organisms and populations in an ecosystem depend on and may compete for: 6.12(A) ☐ biotic factors ☐ abiotic factors				

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Organisms and Environments (continued)

Content		Notes	Check Up		
Earth's Water and Human Activity	☐ I can analyze the: ☐ beneficial influences ☐ harmful influences of human activity on groundwater in a watershed. 7.11(A)				
	☐ I can analyze the: ☐ beneficial influences ☐ harmful influences of human activity on surface water in a watershed. 7.11(A)				
	☐ I can describe human dependence and influence on ocean systems. 7.11(B)				
	☐ I can explain how human activities impact ocean systems. 7.11(B)				

Process: Ways to Show		Notes	Check Up		
Models/ Information	☐ I can develop and use models/information. 8.1(G), 8.1(H), 8.2(A), 8.4(B), 8.5(C)				
Data	☐ I can analyze and interpret data. 8.2(B), 8.2(C)				
Explanations/ Solutions	☐ I can develop and communicate explanations/solutions. 8.3(A), 8.3(B), 8.3(C), 8.5(A), 8.5(B)				
Interdependence	☐ I can explain interdependence. 8.5(D), 8.5(E), 8.5(F), 8.5(G)				
Science and the Real World	☐ I can connect science with the real world. 8.4(A), 8.4(C)				

Structure, Function, and Survival

Process: Tools to Know		Notes	Check Up		
Investigations	☐ I can plan and conduct investigations and design solutions. 8.1(A), 8.1(B), 8.1(C), 8.2(D), 8.5(A)				
Tools and Equipment	☐ I can use appropriate tools and equipment. 8.1(D)				
Information	☐ I can collect and record information. 8.1(E), 8.1(F)				

Content		Notes	Check Up		
Cell Functions and Body Systems	☐ I can identify the function of the following in plant or animal cells: 8.13(A) ☐ cell membrane ☐ cell wall ☐ nucleus ☐ ribosomes ☐ cytoplasm ☐ mitochondria ☐ chloroplasts ☐ vacuoles				
	☐ I can identify and model the main functions of the systems of the human organism, including: 7.13(A) ☐ circulatory ☐ reproductive ☐ respiratory ☐ integumentary ☐ skeletal ☐ nervous ☐ muscular ☐ immune ☐ digestive ☐ endocrine ☐ urinary				
	☐ I can describe the historical development of cell theory. 6.13(A)				
	☐ I can explain how organisms are: 6.13(A) ☐ composed of one or more cells, which come from pre-existing cells ☐ the basic unit of structure and function				
Inherited Traits	☐ I can describe the function of genes within chromosomes in determining inherited traits of offspring. 8.13(B)				

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Structure, Function, and Survival (continued)

Content		Notes	Check Up		
Variation and Survival	☐ I can describe how variations of traits within a population lead to: ☐ structural adaptations ☐ behavioral adaptations ☐ physiological adaptations that influence the likelihood of survival and reproductive success of a species over generations. 8.13(C)				
	☐ I can compare the results of asexual and sexual reproduction of plants and animals in relation to: 7.13(C) ☐ the diversity of offspring ☐ the changes in the population over time				
	☐ I can describe and give examples of how: ☐ natural selection ☐ artificial selection change the occurrence of traits in a population over generations. 7.13(D)				

Process: Ways to Show		Notes	Check Up		
Models/ Information	☐ I can develop and use models/information. 8.1(G), 8.1(H), 8.2(A), 8.4(B), 8.5(C)				
Data	☐ I can analyze and interpret data. 8.2(B), 8.2(C)				
Explanations/ Solutions	☐ I can develop and communicate explanations/solutions. 8.3(A), 8.3(B), 8.3(C), 8.5(A), 8.5(B)				
Interdependence	☐ I can explain interdependence. 8.5(D), 8.5(E), 8.5(F), 8.5(G)				
Science and the Real World	☐ I can connect science with the real world. 8.4(A), 8.4(C)				