

| Science | | | | | |
|--------------------------------|--|----------------|--|--|--|
| Timeli ne (# of days) | Topic | Standards | Key Vocabulary | Enduring Understandings | Essential Questions |
| 3 | <input type="checkbox"/> Atmosphere | 7.E.1.1 | air mass (continental polar, continental tropical, maritime tropical, maritime polar, warm front, cold front, thunderstorms, hurricanes, tornadoes, air pressure, wind speed, temperature, humidity, radiation, conduction, convection, local winds, global winds, Coriolis Effect, troposphere, stratosphere, mesosphere, thermosphere, ozone, oxygen, nitrogen, carbon dioxide, water vapor, greenhouse gases, Greenhouse Effect | <ol style="list-style-type: none"> The Earth has a specific structure and composition with specific properties. The cycling of matter in and out of the atmosphere influences weather and climate patterns. Global heating by the sun is the driving force behind weather and climate patterns. The interaction between air masses affects the weather patterns in a given area The quality of life on Earth depends on the monitoring and maintaining of air quality. Information from weather data can be used to make predictions about weather conditions. | <ol style="list-style-type: none"> How does the composition of the atmosphere affect its structure and properties? How does the cycling of water in and out of the atmosphere affect weather patterns? How does the sun's energy impact weather and climate patterns? What is relationship between air masses; high and low pressure systems and frontal boundaries to weather patterns? In what ways do humans impact the quality of air? How do scientists measure and monitor air quality? What actions can be taken to improve air quality? What are some natural causes of air pollution? |
| 1 | <input type="checkbox"/> Air Masses, Fronts, High/Low Pressure | 7.E.1.3 | | | |
| 3 | <input type="checkbox"/> Air Quality Human Impact | 7.E.1.6 | | | |
| 2 | <input type="checkbox"/> Water Cycle | 7.E.1.2 | | | |
| 5 | <input type="checkbox"/> Predicting Weather with Tools | 7.E.1.4 | | | |
| 2 | <input type="checkbox"/> Convection, Global Winds & | 7.E.1.5 | | | |

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|-----------|--|----------------|---|--|--|
| | Jet Stream | | | | <ul style="list-style-type: none"> 9. What data do scientists use to predict weather conditions? 10. How can wind speed and direction, air temperature, humidity and air pressure be used to predict weather conditions? 11. What role do maps, satellites and radar have in predicting weather conditions? 12. What are the major cloud types and what do they tell us about weather conditions? 13. How has technology influenced the ease and accuracy of weather predictions? |
| 15 | Human Body Systems / Homeostasis | 7.L.1.4 | <p>cell, prokaryote, eukaryote, unicellular, multicellular, cell membrane, cell wall, cytoplasm, nucleus, chloroplasts, mitochondria, vacuoles, digestive system, respiratory system, reproductive system, circulatory system, excretory system</p> | <ul style="list-style-type: none"> 1. Organisms have multiple levels of organization: Cells -> Tissues -> Organs -> Systems -> Organism 2. Each body system has specific functions to sustain life. 3. The major body systems work together to sustain life. 4. Body systems may not function properly without homeostasis. 5. The basic unit of structure and function of all living things is the cell. 6. Cells have certain structures, called organelles, which carry out basic life functions. 7. The way in which cells function is similar in all living organisms. | <ul style="list-style-type: none"> 1. How do the levels of organization in multicellular organisms help them carry out basic life functions? 2. How do systems work together to sustain life? 3. What are ways the body maintains balance? 4. What are the major organelles of plant and animal cells? 5. What are the differences between plant and animal cells? 6. How do common single-celled organisms carry out life functions? |
| 1 | Body Organization (Cells to Organisms) | 7.L.1.3 | | | |
| 5 | Animal and Plant Cells | 7.L.1.2 | | | |
| 5 | Protists / Single Celled | 7.L.1.1 | | | |

| | Organisms | | | | |
|----|---|---|--|---|---|
| 10 | Asexual and Sexual Reproduction (Mitosis and Meiosis) | 7.L.2.1 | asexual, sexual, reproduction, fertilization, mitosis, meiosis, cell division, pedigree, DNA, genes, evolution, genetics, genotype, phenotype, dominant, recessive, allele, gene | <ol style="list-style-type: none"> 1. Genetic information is passed from one generation to the next. 2. The method of reproduction determines the variety of traits an organism can inherit. 3. Patterns of inheritance can be predicted. 4. Organisms that look alike may have different underlying genetic material. 5. All behavior is affected by both inheritance and experience. 6. The environment and lifestyle choices affect the traits an organism inherits and passing on. | <ol style="list-style-type: none"> 1. Why is there a greater possibility of traits inherited from sexual reproduction than from asexual reproduction? 2. What are the genetic factors that determine an organism's traits? 3. How can Punnett squares and pedigree charts be used to predict the patterns of inheritance? 4. How does genetic makeup influence the behavior of organisms? 5. How can the environment and a person's lifestyle choices affect biological inheritance? |
| 5 | Punnett Squares / Pedigrees | 7.L.2.2 | | | |
| 5 | How environmental and lifestyle choices shape us | 7.L.2.3 | | | |
| 15 | Describing Motion in relation to its position, direction and speed. Interpret and create distance time graphs | <p>7.P.1.1 (5 Days)</p> <p>7.P.1.3 (5 Days)</p> <p>7.P.1.4 (5 Days)</p> | <p>motion, position, direction, speed, balanced force, unbalanced force, inertia, mechanical energy, potential energy, kinetic energy, solar energy, wind energy, thermal energy, circuit, energy transformation, simple machine, complex machine, lever, pulley, wheel and axle, screw, inclined plane, wedge</p> | <ol style="list-style-type: none"> 1. The motion of an object cannot be described without relation to a reference point. 2. Motion is a change in position over time. 3. Motion can be described by its direction and speed. 4. Graphs can be useful in describing motion. 5. An unbalanced force acting on an object changes its speed or direction of motion, or both. 6. Friction opposes motion. Newton's Laws describe the relationship between force, mass and distance. 7. Inertia is the tendency of objects to resist any change in | <ol style="list-style-type: none"> 1. Why is it necessary to describe motion in relation to a reference point? 2. What are the ways motion can be described? 3. What factors affect the motion of an object? 4. How are graphs used to describe motion? 5. How do unbalanced forces affect motion? 6. What determines the amount of friction that acts on an object? 7. How can Newton's Laws |
| 4 | Balanced and | 7.P.1.2 | | | |

| | | | | | |
|---|--|--------------------|--|---|---|
| | Unbalanced Forces / Newton's Laws | | | | |
| 4 | Mechanical Energy (Roller Coaster & Pendulum examples) | 7.P.2.1 | | | |
| 4 | Energy Transformation (Circuits) | 7.P.2.2 7.P.2.3 | | | |
| 2 | Simple Machines | 7.P.2.4 | | <p>motion.</p> <ol style="list-style-type: none"> 8. Energy can be transformed from one form to another. 9. All energy can be considered kinetic or potential. 10. Simple machines are used to make work easier by changing the size or direction of a force. 11. Simple machines make work easier by increasing the mechanical advantage. 12. A compound machine consists of two or more simple machines put together | <p>of Motion help describe the relationship between force, mass and distance?</p> <ol style="list-style-type: none"> 8. How does inertia affect the motion of an object? 9. What are the different forms that energy can take? 10. How does the form that energy takes determine how it affects an object? 11. What are the different ways that energy can be transferred from one form to another? 12. How does the position/state of an object determine the type of energy it possesses? 13. How do simple machines make work easier? 14. Why can simple machines never attain the Ideal Mechanical Advantage? 15. How can simple machines be used together to make compound machines? |

7.E.1.1 Compare the composition, properties and structure of Earth's atmosphere to include: mixture of gases and differences in temperature and pressure within layers.

I Can

- I can identify and order the layers of the atmosphere from the lowest to the highest.

- I can create a chart showing the makeup of the atmosphere, and give examples of solids, liquids and gases as well as the differences in pressure and temperature.
- I can compare and contrast air pressure and temperature differences at varying altitudes.
- I can infer how the ozone layer affects our everyday lives and how our interactions can impact the quality of the ozone layer.

7.E.1.3 Explain the relationship between the movement of air masses, high and low pressure systems and frontal boundaries to storms (including thunderstorms, hurricanes and tornadoes) and other weather conditions that may result

I Can

- I can explain the relationship between the movement of air masses and how storms are formed (ex: high and low pressure systems, and frontal boundaries).

7.E.1.6 Conclude that the good health of humans requires: monitoring the atmosphere, maintaining air quality and stewardship.

I Can

- I can describe how air quality affects human health.
- I can evaluate current ways air quality is monitored and improved.
- I can evaluate the effects of burning fossil fuels on air quality and human health.
- I can explain how natural pollutants can affect air quality.

7.E.1.2 Explain how the cycling of water in and out of the atmosphere and atmospheric conditions relate to the weather patterns on Earth.

I Can

- I can explain the water cycle and relate it to weather patterns on Earth.

7.E.1.4 Predict weather conditions and patterns based on information obtained from: Weather data collected from direct observations and measurement

- **(wind speed and direction, air temperature, humidity and air pressure)**
- **Weather maps, satellites and radar Cloud shapes and types and associated elevation**

I Can

- I can predict weather conditions and patterns based on information obtained from weather devices, radar, maps, satellites, and clouds

7.E.1.5 Explain the influence of convection, global winds and the jet stream on weather and climatic conditions

I Can

- I can illustrate the water cycle and describe the role of the sun and the energy change within each step.
- I can explain the role of convection, Coriolis Effect and the Jet Stream in the atmosphere.
- I can identify the air masses on a US map and indicate the characteristics of each
- I can predict the effect of a high or low pressure system and how it affects weather conditions at a given location.
- I can recognize the different fronts from an illustration.
- I can determine the cause of 3 or more types of severe weather.
- I can demonstrate the transfer of heat in the Earth's atmosphere.

7.L.1.4 Summarize the general functions of the major systems of the human body (digestion, respiration, reproduction, circulation, and excretion) and ways that these systems interact with each other to sustain life.

I Can

- I can evaluate and explain the general functions of the major systems of the human body.
- I can explain ways in which these systems interact with each other to maintain homeostasis.
- I can explain how lifestyle choices affect my overall health.
- I can show the relationships between gland, hormone, target cells and response.

7.L.1.3 Summarize the hierarchical organization of multi-cellular organisms from cells to tissues to organs to systems to organisms.

I Can

- I can show the levels of organization of a multicellular organism.

7.L.1.2 Compare the structures and functions of plant and animal cells, including major organelles (cell membrane, cell wall, nucleus, chloroplasts, mitochondria, and vacuoles).

I Can

- I can explain how the advancement of the microscope led to the development of cell theory
- I can list the three main parts of the cell theory and recognize how they relate to living things
- I can utilize a microscope to identify characteristics of various living organisms.
- I can identify the major organelles of the single celled organism
- I can explain the role the major organelles play in meeting the survival needs of the organism
- I can compare and contrast a plant and animal cell by creating a chart and assess why the cells having different needs
- I can distinguish between prokaryotic and eukaryotic cells and provide an example of each.

7.L.1.1 Compare the structure and life functions of single-celled organisms that carry out all of the basic functions of life including:

- **Euglena**
- **Amoeba**
- **Paramecium**
- **Volvox**

I Can

- I can understand and explain the seven basic functions living things need in order to survive.
- I can identify the differences in the needs of various living things.
- I can explain why homeostasis is essential to the survival of living organisms.
- I can distinguish the type of movement a single-celled organism would exhibit based on its structures.
- I can compare and contrast the methods of obtaining nourishment among various microorganisms.
- I can explain why DNA replication is important for asexual reproduction to occur.

7.L.2.1 Explain why offspring that result from sexual reproduction (fertilization and meiosis) have greater variation than offspring that result from asexual reproduction (budding and mitosis).

I Can

- I can explain why DNA replication is important for asexual reproduction to occur.
- I can identify from a diagram the different types of asexual reproduction—such as budding, fission, regeneration.
- I can recognize how the steps of mitosis lead to the creation of two identical daughter cells.
- I can explain how cancer can relate to mitosis.
- I can recognize how the steps of meiosis lead to the creation of sex cells (gametes).
- I can compare and contrast mitosis and meiosis.
- I can distinguish between haploid and diploid cells.
- I can identify the relationship of haploid and diploid cells to meiosis and mitosis.
- I can explain how sexual reproduction leads to fertilization and variation in a species.
- I can explain the relationship between correct meiosis and genetic disorders.
- I can use a Punnett square to predict the genotypes and phenotypes of resulting offspring.

7.L.2.2 Infer patterns of heredity using information from Punnett squares and pedigree analysis.

I Can

- I can differentiate between homozygous and heterozygous genotypes and their relationship to dominant and recessive traits.
- I can analyze a pedigree to determine the genotype and phenotype of different people in a family.

7.L.2.3 Explain the impact of the environment and lifestyle choices on biological inheritance (to include common genetic diseases) and survival.

I Can

- I can understand how environmental and lifestyle conditions can alter an organisms genetic makeup
- I can differentiation between environmental facts and lifestyle factors.
- I can identify behaviors that can lead to variations in genetic traits.
- I can investigate how human behaviors and characteristics are shaped by inheritance, experiences and environmental factors.

7.P.1.1 Explain how the motion of an object can be described by its position, direction of motion and speed with respect to some other object.

I Can

- I can describe how an object changes position over time in relation to a reference point.
- I can calculate the speed, time or distance of an object in motion (speed=distance/time)
- I can compare and contrast speed, velocity and acceleration

7.P.1.3 Illustrate the motion of an object using a graph to show a change in position over a period of time.

I Can

- I can collect data and use the information to graph change in position over time.

7.P.1.4 Interpret distance versus time graphs for constant speed and variable motion.

I Can

- I can determine an object's speed based on a distance time graph.
- I can construct and analyze a distance/time graph.
- I can collect data and use information to graph change in position over time
- I can interpret a time vs distance graph for constant speed and variable motion.

7.P.1.2 Explain the effects of balanced and unbalanced forces acting on an object (including friction, gravity and magnets).

I Can

- I can compare and contrast and analyze balanced and unbalanced forces
- I can predict the change in motion an object will experience based on the force to be applied.
- I can explain Newton's laws of motion by using examples of everyday life.
- I can understand how the concepts of inertia (1st Law), applied force (2nd law) and reactions (3rd law) related to Newton's Laws of Motion.

7.P.2.1 Explain how kinetic and potential energy contribute to the mechanical energy of an object.

I Can

- I can explain how mechanical energy affects the overall energy in a system.

7.P.2.2 Explain how energy can be transformed from one form to another (specifically potential energy and kinetic energy) using a model or diagram of a moving object (roller coaster, pendulum, or cars on ramps as examples).

I Can

- I can infer that an object that possesses mechanical energy is able to do work
- I can create a diagram that shows the transfer of potential energy to kinetic energy
- I can compare and contrast potential and kinetic energy.
- I can give examples of how energy can travel in different forms—light, sound and electricity.

7.P.2.3 Recognize that energy can be transferred from one system to another when two objects push or pull on each other over a distance (work) and electrical circuits require a complete loop through which an electrical current can pass.

I Can

- I can create a manipulative with examples of each type of energy transfer
- I can explain the role of a loop in an electrical circuit
- I can create a graphic organizer that shows how electrical energy can be generated by wind, water, solar or fossil fuels.
- I can explain energy loss in Law of Conservation of Energy (heat)
- I can calculate the amount of work done when an object is moved a given distance by given force (work=force x distance)

7.P.2.4 Explain how simple machines such as inclined planes, pulleys, levers and wheel and axels are used to create mechanical advantage and increase efficiency.

I Can

- I can illustrate each type of simple machine.
- I can calculate the mechanical advantage of a simple machine.
- I can evaluate which simple machine will allow me to gain the most efficiency based on its design
- I can design a compound machine using 2 or more simple machines.

Resources

Online Reading

- [Geology4kids, Earth Structure](#) (6.E.2.1, 6.E.2.2)
- [Lesson 2 Soil](#) (6.E.2.3, 6.E.2.4)
- [Earth's 4 Layers](#) (6.E.2.1)

Labs

- [Rock Cycle Lab](#)(6.E.2.3)
- [Ride the Rock Cycle](#) (6.E.2.3)

You tube Songs and Parodies:

- [Alfred Wegener vs. The Fixists \(Continental Drift\)](#) (6.E.2.2)
- [The Amoeba People: Continental Drift](#) (6.E.2.2)

Bill Nye Videos

- [Earth's Crust](#) (6.E.2.1)
- [Earthquakes](#) (6.E.2.2)
- [Pollution Solution](#) (6.E.2.4)
- [Volcanoes](#) (6.E.2.2)
- [Rocks & Soil](#) (6.E.2.3)
- [Erosion](#) (6.E.2.3)

Youtube and other Videos

- [Nova: Earth From Space](#) (6.E.2.3)
- [Twig Earth Science Films](#) (6.E.2.2)

Study Jams

- [Earthquakes](#) (6.E.2.2)
- [Volcanoes](#) (6.E.2.2)
- [The Rock Cycle](#) (6.E.2.3)
- [Weathering and Erosion](#) (6.E.2.3)

Online Reading

- [Cosmos 4 Kids, Solar System](#)(6.E.1.2)
- [Cosmos 4 Kids, Space Exploration](#) (6.E.1.3)
- [Nine Planets](#)(6.E.1.2, 6.E.1.3)

- [Moon Tides](#)(6.E.1.1)
- [NASA Eclipse Website](#)(6.E.1.1)

Labs

- [Oreo Lab: Phases of the Moon](#)(6.E.1.1)
- [NASA Space Place - Spinoffs](#) (6.E.1.3)
- [Middle School Science with Vernier: What causes Seasons](#)(6.E.1.1)

Bill Nye Videos(Schooltube)

- [Seasons](#) (6.E.1.1)
- [The Moon](#) (6.E.1.1)
- [Comets & Meteors](#)(6.E.1.2)
- [The Planets](#) (6.E.1.2)
- [The Sun](#) (6.E.1.2)
- [Space Exploration](#) (6.E.1.3)

You Tube channels

- [The Spangler Effect with Steve Spangler](#)
- [Sciencefix](#)

You Tube and other Videos

- [TedEd Who Won the Space Race?](#) (6.E.1.3)
- [Nova: Earth From Space](#) (6.E.1.1, 6.E.1.2, 6.E.1.3)
- [Neo K12 Eclipse Videos](#)(6.E.1.1)

Study Jams

- [A Day on Earth](#)(6.E.1.1)
- [Our Solar System: Inner Planets](#)(6.E.1.2)
- [Our Solar System: Outer Planets](#)(6.E.1.2)
- [The Moon](#)(6.E.1.1)

You Tube science songs and parody songs:

- [Learningscienceisfun with Mister C](#)
- [Mr. Parr](#)
- [You Tube: Mr Parr: Moon](#)
- [Science with Tom](#)

Online Reading

- [Physics 4 Kids, Heat](#) (6.P.3.1, 6.P.3.3)
- [Physics 4 Kids, Electricity](#) (6.P.3.3)
- [Physics 4 Kids, Light](#) (6.P.1.2)

Study Jams

- [Energy & Matter](#) (6.P.3.1)
- [Light](#) (6.P.1.1, 6.P.3.2)
- [Light Absorption, Reflection, Refraction](#) (6.P.3.2)
- [The Senses: Seeing](#) (6.P.3.1)
- [Heat](#) (6.P.3.1)
- [Sound](#) (6.P.1.1, 6.P.1.2)
- [The Senses: Hearing](#) (6.P.1.2)

Online Reading

- [Chem 4 Kids, Matter](#) (6.P.2.1)
- [Chem 4 Kids, Atoms](#) (6.P.2.1)

Lessons

- [Middle School Chemistry – Chapter 1 Matter](#) (6.P.2.1)
- [Middle School Chemistry – Chapter 2 Changes of State](#) (6.P.2.2)
- [Middle School Chemistry – Chapter 3 Density](#) (6.P.2.3)

Study Jams

- [Properties of Matter](#) (6.P.2.1)
- [Solid, Liquid, Gases](#) (6.P.2.2)
- [Physical & Chemical Changes](#) (6.P.2.3)

Online Reading

- [Biology4kids, Plants](#) (6.L.1.1)
- [Plants](#) (6.L.1.1)
- [Plant Processes](#) (6.L.1.2, 6.L.2.2)

Bill Nye (Schooltube)

- [Flowers](#) (6.L.1.1)
- [Plants](#) (6.L.1.2)

Magic School Bus (Discovery Education)

- [Gets Planted](#) (6.L.1.2)
- [Goes to Seed](#) (6.L.1.1)

Youtube and other Videos

- [TedEd, The Simple Story of Photosynthesis](#) (6.L.1.2)
- [NASA, Seeing Photosynthesis from Space](#) (6.L.1.2)
- [Photosynthesis](#) (6.L.1.2)

Study Jams

- [Photosynthesis](#)(6.L.1.2)
- [Flowers](#)(6.L.1.1)
- [Roots & Stems](#) (6.L.1.1)
- [Plant Parts](#)(6.L.1.1)

Online Reading

- [Interactions of Life](#) (6.L.2.1, 6.L.2.3)

Lab

- [Food Chain Game](#) (6.L.2.1)

Bill Nye (Schooltube)

- [Population](#) (6.L.2.1)

Youtube and other Videos

- [Amoeba Sisters, Food Webs and Energy Pyramids](#) (6.L.2.1)

Study Jams:

- [Ecosystems](#) (6.L.2.3)
- [Aquatic Ecosystems](#)(6.L.2.3)
- [Food Chains](#) (6.L.2.1)
- [Food Webs](#) (6.L.2.1)
- [Changes in Ecosystems](#) (6.L.2.3)
- [Biomes](#)(6.L.2.3)

Bill Nye

- [Biodiversity](#) (6.L.2.3)
- [Food Webs](#) (6.L.2.1)
- [Populations](#) (6.L.2.1)

NCFE Weight Distribution

| Domain | Grade 7 |
|---|------------------|
| Physical Science 7.P.1 7.P.2 | 13-17% 18-24% |
| Earth Science | |

| | |
|---------------------------------------|-----------------|
| 7.E.1 | 20-28% |
| Life Science 7.L.1 7.L.2 | 16-22% 8-14% |

Number of Operational Items by Clarifying Objectives

| Grade 7 Science Clarifying Objectives | Number of Operational Items by Objective |
|---|--|
| Forces and Motion | |
| 7.P.1.1 Explain how the motion of an object can be described by its position, direction of motion, and speed with respect to some other object. | 2 |
| 7.P.1.2 Explain the effects of balanced and unbalanced forces acting on an object (including friction, gravity and magnets). | 2 |
| 7.P.1.3 Illustrate the motion of an object using a graph to show a change in position over a period of time. | 1 |
| 7.P.1.4 Interpret distance versus time graphs for constant speed and variable motion. | 1 |
| Energy: Conservation and Transfer | |
| 7.P.2.1 Explain how kinetic and potential energy contribute to the mechanical energy of an object. | 3 |
| 7.P.2.2 Explain how energy can be transformed from one form to another (specifically potential energy and kinetic energy) using a model or diagram of a moving object (roller coaster, pendulum, or cars on ramps as examples). | 2 |
| 7.P.2.3 Recognize that energy can be transferred from one system to another when two objects push or pull on each other over a distance (work) and electrical circuits require a complete loop through which an electrical current can pass | 2 |

| | |
|---|---|
| 7.P.2.4 Explain how simple machines such as inclined planes, pulleys, levers and wheel and axles are used to create mechanical advantage and increase efficiency. | 1 |
| Earth Systems, Structures, and Processes | |
| 7.E.1.1 Compare the composition, properties and structure of Earth's atmosphere to include: mixtures of gases and differences in temperature and pressure within layers. | 3 |
| 7.E.1.2 Explain how the cycling of water in and out of the atmosphere and atmospheric conditions relate to the weather patterns on Earth. | 3 |
| 7.E.1.3 Explain the relationship between the movement of air masses, high and low pressure systems, and frontal boundaries to storms (including thunderstorms, hurricanes, and tornadoes) and other weather conditions that may result. | - |
| 7.E.1.4 Predict weather conditions and patterns based on information obtained from: • Weather data collected from direct observations and measurement (wind speed and direction, air temperature, humidity and air pressure) • Weather maps, satellites and radar • Cloud shapes and types and associated elevation | 1 |
| 7.E.1.5 Explain the influence of convection, global winds and the jet stream on weather and climatic conditions. | 1 |
| 7.E.1.6 Conclude that the good health of humans requires: monitoring the atmosphere, maintaining air quality and stewardship. | 1 |
| Structures and Functions of Living Organisms | |
| 7.L.1.1 Compare the structures and life functions of single-celled organisms that carry out all of the basic functions of life including: • Euglena • Amoeba | 2 |

| | |
|---|---|
| <ul style="list-style-type: none"> • Paramecium • Volvox | |
| 7.L.1.2 Compare the structures and functions of plant and animal cells, including major organelles (cell membrane, cell wall, nucleus, chloroplasts, mitochondria, and vacuoles). | 1 |
| 7.L.1.3 Summarize the hierarchical organization of multi-cellular organisms from cells to tissues to organs to systems to organisms. | 1 |
| 7.L.1.4 Summarize the general functions of the major systems of the human body (digestion, respiration, reproduction, circulation, and excretion) and ways that these systems interact with each other to sustain life. | 3 |
| Evolution and Genetics | |
| 7.L.2.1 Explain why offspring that result from sexual reproduction (fertilization and meiosis) have greater variation than offspring that result from asexual reproduction (budding and mitosis). | 1 |
| 7.L.2.2 Infer patterns of heredity using information from Punnett squares and pedigree analysis. | 3 |
| 7.L.2.3 Explain the impact of the environment and lifestyle choices on biological inheritance (to include common genetic diseases) and survival. | 1 |