Fowler Elementary School District 45
7th. Grade Science Curriculum Map

Arizona Department of Education

AzDE Science Standards
https://www.azed.gov/standards-practices/k-12standards/standards-science

Sixth through eighth grade starts on page 48.

Sixth through eighth grade progression of content

- **In sixth grade, students apply their understanding of the cycling of matter, energy flow, and scale, as it relates to molecules, geosphere, the solar system, and ecosystems.**
- **In seventh grade, students will investigate the relationship between forces and the changes in motion, how energy transfer impacts geologic and atmospheric processes, and the structure and function of cells.**
- **In eighth grade, students will describe how cause-and-effect interact with stability and change to influence the natural world. *1**

Valuable resources from the AzDE – All of these are links. Just click on them!

Distribution of Core Ideas of Knowing Science Across All Grade Level from AzDe

Planning Summaries from AzDE - Seventh Grade

Crosscutting Concepts Progression Matrix of Elements from AzDE*

*A Look at the AzDe Standards Video-**Webinar***

*Transforming Science Learning SEPs by the AzDe **Video - Webinar***

*SEP Asking Questions with a DQB **Video-Webinar***

*Transforming Science Learning SEPs **Video-Webinar***

*Engaging Students in Developing and Using Models Using Digital Tools **Video-Webinar***

***Using the Arizona Science Standards to Plan a Unit of Instruction BSCS Too** Video-Webinar*

Inspire Science Books´ access

https://my.mheducation.com/login

USERNAME **PASSWORD**
AZK12Science **AZK12Science**

Scope and Sequence of topics

Scope and sequence of topics link – observe the second column of this online document
https://mheducation.padlet.org/michael_matti/inspire4kids

In the e-book you will find two collections. McGraw Hill has labelled them as LEP and INT respectively.
LEP Collection:
Consists of 3 books, one for Earth and Space Science, one for Physical Science and one for Life Science.
One can find the content of 6th, 7th. and 8th. grades in each book.

INT or Integrated collection:
It consists of 4 books per grade level. Each Unit is a Book and each Module is like a chapter.
The pages and units stated in this document have been taken from this collection.
Be aware that in this collection, some topics for 7th. grade will be found in the sixth or eight grade books.

EACH BOOK is one UNIT – when the unit number changes, you need to look into another book.

Inspire Science Training 6-12 tutorial videos.

http://www.brainshark.com/mcgraw-hillseg/vu?pi=zHLzJncMBz5Vahz0
https://www.brainshark.com/1/player/mcgraw-hillseg?pi=zHLzJncMBz5Vahz0&r3f1=&fb=0

K-5 Inspire Science Padlet: https://mheducation.padlet.org/christina_quarelli/d9mmpjfvzi0wcvol **password: inspire**
6-8 Inspire Science Padlet: https://mheducation.padlet.org/michael_matti/inspire4kids **password: science**

5640 AZ Inspire Physical Science 2020

Labs and investigations organized by **Science Standards – Physical Science**

5640 AZ Inspire Earth and Space Science 2020

5640 AZ Inspire Life Science 2020

Quarter 1

Physical Science – Energy and Motion

Forces and Motion

7.P3U1.4 Use non algebraic mathematics and computational thinking to explain Newton's laws of motion.
MODULE 1 – Lessons 1 through 3

7.P3U1.3 Plan and carry out an investigation that can support an evidence-based explanation of how objects on Earth are affected by gravitational force.
MODULE 1 – Lesson 4

Mechanical Energy

7.P2U1.2 Develop and use a model to predict how forces act on objects at a distance**.**

MODULE 2 – Lessons 1 through 3

Eighth grade Book Unit 2

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UNIT 2	**ENERGY AND MOTION**
MODULE	**Forces and Motion**
LESSON	Position and Motion
LESSON	Force and Acceleration
LESSON	Force Pairs
LESSON	Gravitational Force
MODULE	**Mechanical Energy**
LESSON	Kinetic Energy
LESSON	Potential Energy
LESSON	Conservation of Energy

Pages in the Book 8th. Grade Book Unit 2	Skills/Objectives SWBAT or I can ...	Additional Resources/STEM projects	Vocabulary	Accommodations	Assessment

Q1- Physical Science – *Forces and Motion*

7.P3U1.4

Use non algebraic mathematics and computational thinking to explain Newton's laws of motion.
(GAP-demonstrate velocity as a rate of change of position over time, creating position-time and velocity-time graphs)

Energy and Motion Unit 2 **MODULE 1** ***Forces and motion*** **Lesson 1** Position and Motion – Page 2/ 5 days **Lesson 2** Force and Acceleration Page 33/ 4 days **Lesson 3** Force pairs Page 57/ 4 days	I can determine the meaning of the following terms through investigation: Force, Motion, Mass I can conduct an experiment to explore and describe balanced and unbalanced forces. I can explain the conditions under which an object will continue in its state of motion (Newton's 1st Law of Motion) I can explain how the acceleration of a body is dependent on its mass and the net applied force (Newton's 2nd Law of Motion). (CC: Patterns, Cause & Effect) I can determine the meaning of the following terms through investigation: Inertia, Mass. I can explain forces as interactions between bodies (Newton's 3rd Law of Motion). (CC:Patterns, Cause & Effect) I can draw force diagrams to describe Newton's Laws of Motion.	General Physics PHET Simulation - Forces and Motion PHET Simulation - Forces and Motion Basics Broom Ball - Good Activity for introducing the Laws of Motion. Eurkea Video - Inertia Newton's Third Law Lab - This used Vernier Sensors, but can be modified by using spring scales. Discovery Education: Key Phrases: "Laws of Motion" "Forces and Motion" "Simple Machines"	**A1.Motion** Force Mass Orientation Balanced forces Unbalanced forces Friction Weight **A2.Distance** Energy transfer Inertia Proportional relationship between mass and acceleration, Acceleration Gravity Gravitational force	**Related ELA Standards:** 7.RST.4 7.W.4 7.W.9 7.RI.1-3 *Content Reading* ACTIVE READING Circle 1, Underline a Few Highlighting G,Y,R 2-Column Notes Quick Sketch Response Starter VOCABULARY Frayer Model Foldable Word Wall Circle Chart THINKING CHARTS Tri-Chart Tree Chart Circle Chart Multi-Flow Flowchart	District Pre/Post-Test CFA Assessments Quarter Benchmark

Pages in the Book	Skills/Objectives SWBAT or I can ...	Resources/STEM projects	Vocabulary	Accommodations	Assessment

Q1- Physical Science – *Forces and Motion*

7.P3U1.3
Plan and carry out an investigation that can support an evidence-based explanation of how objects on Earth are affected by gravitational force.

Energy and Motion Unit 2 **MODULE 1** ***Forces and motion*** **Lesson 4** Gravitational Force Page 75/ 4 days	I can define gravity. I can identify gravity as a force and describe its affects the Earth. I can describe the difference between mass and weight. I can use reasoning to construct the argument that gravitational forces are attractive and mass dependent. I can construct a model showing that gravitational interactions are attractive and depend on the masses of interacting objects. I can plan an investigation using evidence of gravitational force.	Khan Academy Intro to Gravity Discovery Education Key Phrases: Motion, Force, and Gravity PHET Simulation-Gravity & Force Lab-Newton's 3rd Law PHET Simulation-Gravity & Orbits (shows change of mass, gravity and impacts) Gravity Reading PHET Simulation-Gravity & Force Lab-Newton's 3rd Law Water Balloon Gravity Teacher Guide Student Sheet Gravity Force Car Investigation	**Important People:** Isaac Newton Archimedes Aristotle Henry Cavendish Albert Einstein Johannes Kepler Galileo Galilei STEM Projects: Hovering on a Cushion of Air Activity. Tug of War Broom Ball - Good Activity for introducing the Laws of Motion https://www.jpl.nasa.gov/edu/teach/activity/planetary-egg-wobble-and-newtons-first-law/		

Pages in the Book	Skills/Objectives SWBAT or I can ...	Resources/STEM projects	Vocabulary	Accommodations	Assessment

Q1- Physical Science – *Mechanical Energy*

7.P2U1.2 Develop and use a model to predict how forces act on objects at a distance**.**

Energy and Motion Unit 2 **MODULE 2** ***Mechanical Energy*** **Lesson 1** Kinetic energy Page 105 / 4 days **Lesson 2** Potential energy Page 125 / 4 days **Lesson 3** Conservation of energy Page 141 / 4 days	I can describe gravitational force. I can use data from an investigation to predict forces on an object. (link to data table from 7.P2U1.1) I can describe the difference between gravitational force between objects with small and large masses. I can create a model to demonstrate gravitational force between two masses. I can interpret models showing proportional relationships between mass and gravitational forces.	Glencoe Virtual Lab - Newton's 2nd Law Discovery Education: Key Phrases: "Force and Gravity" "Mass and Gravity"	Newtons Force fields Weight Distance Gravity Gravitational force		

Quarter 2

Physical Science – *Electromagnetic and Gravitational Forces*

Electromagnetic Forces

7.P2U1.1 Collect and analyze data demonstrating how electromagnetic forces can be attractive or repulsive and can vary in strength.

MODULE 3 – *Electromagnetic Forces*

Eighth grade Book *Unit 2 – Module 3*

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MODULE	**Electromagnetic Forces**
LESSON	Magnetic Forces
LESSON	Electric Forces
LESSON	Simple Circuits
LESSON	Electromagnetism

Pages in the Book	Skills/Objectives SWBAT or I can ...	Resources/STEM projects	Vocabulary	Accommodations	Assessment
Q2 Physical Science – *Electromagnetic Forces* **7.P2U1.1 Collect and analyze data** demonstrating how electromagnetic forces can be attractive or repulsive and can vary in strength.					
Energy and Motion Unit 2 **MODULE 3** *Electromagnetic Forces* **Lesson 1** Magnetic Forces Page 171 / 6 days **Lesson 2** Electric Forces Page 197 / 5 days **Lesson 3** Simple Circuits Page 217 / 5 days Lesson 4 Electromagnetism Page 233/ 6 days	I can conduct an investigation to identify properties of magnets addressing the following: Size Magnitude (strength) Attraction (positive and negative charges) Repulsion I can identify trends and patterns to explain the relationship between distance and magnetic strength. I can define attractive and repulsive forces. I can compare and contrast attractive and repulsive forces. Building an Electromagnet Electro and Magnetic Field Lines Building and comparing electromagnets	PHET Simulation-Electromagnetic Forces PHET Simulation-Magnetic Fields DiscoveryEducation Key Phrases: “Magnetic Forces” “Electromagnets” Discovery of Electromagnetism - Article about Oersted Electromagnetic Reading with Review NGSS Electromagnetic Relationships Activity Earth’s Magnetic Field Reading	Electromagnetic Force Attract Attraction Repel Repulsive Proportional Magnitude Charge Resistance Currents Gravity Mass Weight Mass-dependent Interactions Trends Carl Friedrich Gauss James Clerk Maxwell J.J. Thompson Joseph Henry Michael Faraday Andre-Marie Ampere		District Pre/Post-Test CFA Assessments Quarter Benchmark

		What happens when Earth's magnetic field flips polarity			

Quarter 3

Earth Science – Changing Earth

Changing Earth **7.E1U1.6 Construct a model** to explain how the distribution of fossils and rocks, continental shapes, and seafloor structures provides evidence of the past plate motions. **MODULE 3 – Dynamic Earth**	

Inspire Science Grade 7 Book ***Unit 2 Changing Earth - Module 3 - Dynamic Earth***

https://my.mheducation.com/secure/teacher/urn:com.mheducation.openlearning:enterprise.identity.organization:prod.global:organization:de8e90a2-78ac-4b82-a664-72f5fe2fa188/urn:com.mheducation.openlearning:enterprise.roster:prod.us-east-1:section:a6040260-fb78-11eb-bff1-e5b49d5bcc87/course/folders/urn:com.mheducation.openlearning:content.courseware.deliver:prod.us-east-1:user_folder:b878f817-4681-411d-9d2a-b1dd1e847d9d.9ca80775-a233-4eb0-ad77-aebf1371c757/overview#

UNIT 2	**THE CHANGING EARTH**
MODULE	**Dynamic Earth**
LESSON	Moving Continents
LESSON	Development of a Theory
LESSON	Shaping Earth's Surface
LESSON	Changing Earth's Surface
LESSON	The Cycling of Earth's Materials
MODULE	**Natural Hazards**
LESSON	Earthquake Risks
LESSON	Volcanoe Risks
LESSON	Severe Weather Risks

Pages in the Book	Skills/Objectives SWBAT or I can ...	Resources/STEM projects	Vocabulary	Accommodations	Assessment

Q3- Earth Science – Changing Earth

7.E1U1.6 Construct a model to explain how the distribution of fossils and rocks, continental shapes, and seafloor structures provides evidence of the past plate motions.

Unit 2 **MODULE 3** **Lesson 1** Moving Continents Page 5 / 3 days **Lesson 2** Development of a Theory Page 23 / 6 days **Lesson 3** Shaping Earth´s surface Page 41 / 6 days	I can analyze the evidence that lithospheric plate movements occur. I can explain lithospheric plate movement as a result of convection. I can create a model of plate boundary movements to their resulting landforms, including: • mountains • faults • rift valleys • trenches • volcanoes I can interpret how the rock record shows that environmental conditions have changed over geologic and recent time to formulate conclusions. I can describe how the fossil record shows that environmental conditions have changed over geologic and recent time. I can conceptualize of the following plate boundaries: • Divergent • Convergent • Transverse	Earth's Layers PPT Earth's Layers Stations Earth's Formation PPT Earth's Formation Stations Fossils PPT Fossils Stations Plate Boundary, Volcano, Earthquake Map Plate Movements PPT Plate Movements Stations PHET Simulation-Plate Tectonics PHET Simulation-Glacier Formation and Movement Plate Tectonics Graham Cracker Activity Edible Plates (milky ways)	**Essential People** Alfred Wegener Harry Hess James Hutton J. Tuzo Wilson Fred Vine Drummond Matthews Chemical changes Physical changes Radioactive decay Tectonic plates Convection Convection currents Lithosphere Crust Seafloor Fossil record Hot Spots Subduction Continental Crust Oceanic Crust Continental Drift Pangaea Mid Ocean Ridges Ocean Trenches Sea Floor Spreading		Earth's Layers Quiz Earth's Formation Quiz Fossils Quiz Plate Movements Quiz

Pages in the Book	Skills/Objectives SWBAT or I can ...	Resources/STEM projects	Vocabulary	Accommodations	Assessment

Q3- Earth Science – Changing Earth

7.E1U1.6 Construct a model to explain how the distribution of fossils and rocks, continental shapes, and seafloor structures provides evidence of the past plate motions.

Unit 2 **MODULE 3** **Lesson 4** Changing Earth´s surface Page 67/ 8 days **Lesson 5** The cycling of Earth´s materials **The Rock Cycle** Page 95 / 7 days	I can compare and contrast the connection between the fossil record and plate tectonics. I can describe the distribution of seafloor structures (e.g., volcanic ridges at the centers of oceans, trenches at the edges of continents) I can make connections on the patterns of ages of rocks of the seafloor (youngest ages at the ridge, oldest ages at the trenches) by analyzing inquiry data and/or scientific diagrams. I can evaluate the relationship between new crust formation and the destruction of seafloor trenches in relation to the fossil record as a system. I can describe physical and chemical changes of matter in Earth's materials including the following: ● Rock cycle I can explain the rock cycle. I can distinguish the components and characteristics of the rock cycle for the following types of rocks: ● igneous ● metamorphic ● sedimentary	Dating Fossil Record Activity Yellowstone 3 day activity/ unit discussing geoscience, technologies and natural hazards, climate change, and real world solutions Rock Cycle PPT Rock Cycle Stations Rock Cycle Game-NASA (possible assessment or intro "inquiry") Ride the Rock Cycle Game with Comic Strip (possible assessment) Background Reading and Comprehension Questions-Rock Cycle, Plate Tectonics Theory and Plate Boundaries	Divergent Boundary, Transform Boundary, Continental-Continental Collision, Oceanic-Oceanic Subduction, Oceanic-Continental Subduction, Convergent Transverse Mountains Faults Rift valleys Trenches Climate Greenhouse gases Latitude Altitude Atmosphere Weather	Discovery Education Key Phrases: "Lithospheric Movement" "Earth's Surface"	Rock Cycle Quiz Oral Discussion Oral Discussion (Building background)

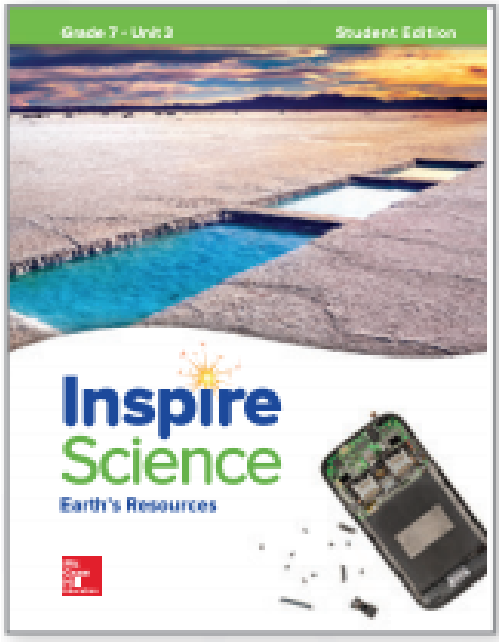
Pages in the Book	Skills/Objectives SWBAT or I can ...	Resources/STEM projects	Vocabulary	Accommodations	Assessment

Q3- Earth Science – Natural Hazards **Changing Earth** **7.E1U1.6 Construct a model** to explain how the distribution of fossils and rocks, continental shapes, and seafloor structures provides evidence of the past plate motions. **MODULE 3 – Dynamic Earth**					
Unit 2 **MODULE 4** **Lesson 1** Earthquake Risk Page 135 / 6 days **Lesson 2** **Volcano Risk** Page 164 / 6 days Lesson 3 Severe Weather Risk Page 190 / 6 days	I can understand how an earthquake occurs on Earth. I differentiate the characteristics of the scales that measure earthquakes. I can understand the process to locate the epicenter of an earthquake. I can understand why the Ring of Fire is the location where most volcanoes form. I can explain how Hot Spot Volcanoes are formed. I can understand the causes of Tsunamis	Discovery Education Key Phrases: "Lithospheric Movement" "Earth's Surface" Dating Fossil Record Activity Yellowstone 3 day activity/ unit discussing geoscience, technologies and natural hazards, climate change, and real world solutions	Earthquake Seismic waves Focus Epicenter Volcano Magma Lava Ring of Fire, island arc, hot spot. plume of magma Shaking liquefaction aftershock Tsunamis water displacement		

Quarter 3

Earth Science – Earth's Resources - Minerals

Unit 3 Earth's Resources **7.E1U1.6 Construct a model** to explain how the distribution of fossils and rocks, continental shapes, and seafloor structures provides evidence of the past plate motions.	
Inspire Science Grade 7 Book ***Unit 3 Earth's- Resources- Module 1 - Distribution of Earth's Resources.***	



UNIT 3	**EARTH'S RESOURCES**
MODULE	**Distribution of Earth's Resources**
LESSON	Natural Resources
LESSON	Distribution of Resources
LESSON	Depletion of Resources

Pages in the Book	Skills/Objectives SWBAT or I can ...	Resources/STEM projects	Vocabulary	Accommodations	Assessment

Q3- Earth Science – Earth's Resources - Minerals

7.E1U1.6 Construct a model to explain how the distribution of fossils and rocks, continental shapes, and seafloor structures provides evidence of the past plate motions.

Unit 3 **MODULE 1** **Lesson 1** **Natural Resources** **page 4 / 5 days** **Lesson 2** **Distribution of Resources** **page 26 /5 days** **Lesson 3** **Depletion of Resources** **page 52 / 4 days**	I can identify the characteristics of minerals and their properties. I can compare and contrast rocks and minerals. (how they form, where they are formed, etc.) I can identify some minerals in my daily life. I understand the process of extraction of minerals	Intro to Geology Intro to Geology B Student interactive learning - building background	**Ore**		

Quarter 3

Earth Science – The Water Cycle and Weather and Climate

Unit 3 Module 3 **The Water Cycle** **7.E1U1.5 Construct a model** that shows the cycling of matter and flow of energy in the atmosphere, hydrosphere, and geosphere.	**Unit 3 Module 4** **Weather and Climate** **7.E1U2.7**

Inspire Science Grade 6 Book ***Unit 3 Changing Earth - Module 3 - The Water Cycle and Module 4 – Weather and Climate***

MODULE	**The Water Cycle**
LESSON	Water in the Atmosphere
LESSON	Water on Earth's Surface
MODULE	**Weather and Climate**
LESSON	Solar Energy on Earth
LESSON	Atmospheric and Oceanic Circulation
LESSON	Weather Patterns
LESSON	Climates of Earth

Pages in the Book	Skills/Objectives SWBAT or I can ...	Resources/STEM projects	Vocabulary	Accommodations	Assessment
Q3- Earth Science – The Water Cycle **7.E1U1.5 Construct a model** that shows the cycling of matter and flow of energy in the atmosphere, hydrosphere, and geosphere.					
Unit 3 **Module 3** **The Water Cycle** **Lesson 1** **Water in the Atmosphere** **page 102 / 5 days** **Lesson 2** **Water on Earth's surface** **page 120 / 5 days**	I can describe physical and chemical changes of matter in Earth's materials including the following: ● Water cycle I can describe the flow of energy in the atmosphere. I can identify and describe the following: ● atmosphere ● hydrosphere ● geosphere I can describe the properties and the composition of the layers of the atmosphere. I can create a model demonstrating the flow of energy through Earth's abiotic features.	Live Global Winds Water Cycle Water Cycle Interactive Diagram (can be modified for Beginning, Middle and Advanced) Layers of the Atmosphere background reading and diagrams Making a Cloud in a Jar	Climate Greenhouse gases Latitude Altitude Atmosphere Weather atmosphere hydrosphere geosphere hydrologic cycles		

Pages in the Book	Skills/Objectives SWBAT or I can ...	Resources/STEM projects	Vocabulary	Accommodations	Assessment
Q3- Earth Science – Weather and Climate **7.E1U2.7 Analyze and interpret data** to construct an explanation for how advances in technology have improved weather prediction.					
Unit 3 **Module 4** **Weather and Climate** **Lesson 1** **Solar Energy on Earth** **page 144 / 6 days** **Lesson 2** **Atmospheric and Oceanic Circulation** **page 169 / 6 days** **Lesson 3** **Weather Patterns** **page 226 / 5 days** **Lesson 4** **Climates of Earth** **page 227 / 5 days**	I can identify and describe technologies used to predict Earth's weather. I can identify the impact of the following factors on weather and climate: • Sunlight • Ocean • Atmosphere • Ice • Landforms • Living things I can describe how oceanic and atmospheric flow patterns are impacted by: • Latitude • Altitude • Geography I can compare and contrast the past and current technologies used to predict weather. I can describe greenhouse gases and their effect on Earth. I can evaluate the impact of energy radiated from land and ocean surfaces on Earth. I can analyze and interpret data that shows evidence of changes in Earth's climate.	Cloud formation activity and forecasting technology reading Weather Book and Weather Tech Weather Basics Weather Camera Tech General Weather Website Center for Science Education • There are a lot of different sources to choose from. Weather Predicting Technologies a small research activity Intro to Greenhouse Gases Extension Lesson on greenhouse gases	NGSS Sample Task-Climate vs Weather, and patterns over time "Four Cities" (could also be used as an assessment) Building a Seismograph		

	I can construct an argument to support the claim of Earth's changing climate.				

Quarter 4

Life Science – Life: Structure and Function

Unit 1 Module 1
Cells and Life

7.L1U1.8 Obtain, evaluate, and communicate information to provide evidence that all living things are made of cells, cells come from existing cells, and cells are the basic structural and functional unit of all living things.

Unit 1 Module 2
Body Systems

7.L1U1.9 Construct an explanation to demonstrate the relationship between major cell structures and cell functions (plant and animal).

7.L1U1.10 Develop and use a [model] to explain how cells, tissues, and organ systems maintain life (animals).

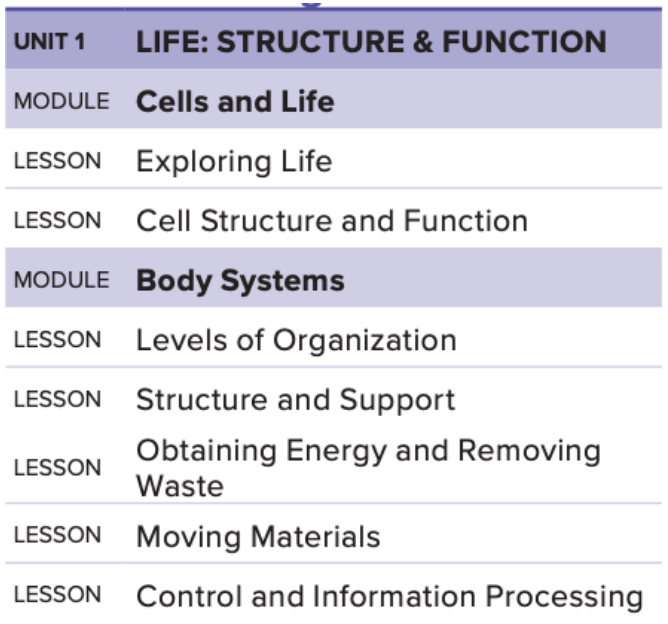
Unit 1 Module 2
Body Systems

7.L1U1.11 Explain how organisms maintain internal stability and evaluate the effect of the external factors on organisms' internal stability.

Unit 4 Module 1
Interactions between Ecosystems

7.L2U1.12 Construct an explanation for how some plant cells convert light energy into food energy.

Inspire Science Grade 6 Book ***Unit 1 Life: Structure & Function - Module 1 – Cells and Life and Module 2– Body Systems***

m	

Pages in the Book	Skills/Objectives SWBAT or I can ...	Resources/STEM projects	Vocabulary	Accommodations	Assessment
Q4- Life Science – Life: Structure and Function **7.L1U1.8** Obtain, evaluate, and communicate information to provide evidence that all living things are made of cells, cells come from existing cells, and cells are the basic structural and functional unit of all living things.					

Unit 1 **Module 1** **Cells and Life** **Lesson 1** **Exploring Life** **page 4 / 11 days** **Lesson 2** **Cell Structure and Function** **page 28 / 7 days**	I can investigate organisms using a microscope. I can explain how the processes of life begins. I can conduct an investigation describing different types of cells within one multicellular organism.	Microscope Data Sheet Cell Theory Reading Cell Labs	Zacharias Janssen Anton van Leeuwenhoek Robert Hooke Theodor Schwann Matthias Schleiden		

Pages in the Book	Skills/Objectives SWBAT or I can ...	Resources/STEM projects	Vocabulary	Accommodations	Assessment

Q4- Life Science – Life: Structure and Function

7.L1U1.9 Construct an explanation to demonstrate the relationship between major cell structures and cell functions (plant and animal).

Unit 1 **Module 2** **Body Systems** **Lesson 1** **Levels of organization** **page 56 / 5 days** **Lesson 2** **Structure and Support** **page 74 / 5 days** **Lesson 3** **Obtaining Energy and Removing Waste** **page 96 / 5 days** **Lesson 4** **Moving Materials** **page 114 / 6 days**	I can label and explain the function of the structures within a cell. I can describe how organelles work together to perform a function. Differentiate between plant and animal cells. I can explain the process of cell division **(Boundary: just discuss purpose of mitosis)**. I can describe the purpose of cell reproduction. **(Boundary: just discuss purpose of meiosis)** I can summarize food as an energy source to carry out functions. I can create a model to describe the interconnectivity of structures and functions of a cell	Cell City Project Cells Alive - Animal and Plant Cell Interactive Cells Alive - Cell Cycle Animation Cells Alive - Mitosis Description and Animation Online Mitosis Lab	Cells Structure Function Photosynthesis Stability Organism Tissue Organ Systems Ribosomes Growth Development Response Energy	Cell Activities (projects, ideas, pictures, and LOTS of additional resources) DiscoveryEducation: Key Phrases: 1. "Cell Structure" 2. "How Organisms Obtain Energy"	

Pages in the Book	Skills/Objectives SWBAT or I can ...	Resources/STEM projects	Vocabulary	Accommodations	Assessment
Q4- Life Science – Life: Structure and Function **7.L1U1.10** Develop and use a [model] to explain how cells, tissues, and organ systems maintain life (animals). **7.L1U1.11 Explain** how organisms maintain internal stability and evaluate the effect of the external factors on organisms' internal stability.					
Unit 1 **Module 2** **Body Systems** **Lesson 5** **Control and Information Processing** **page 136 /** **10 days**	I can explain the hierarchy of cells, tissues, organs and systems. I can relate the following structures of living organisms to their functions (animals): • Respiration (gills, lungs) • Digestion (stomach, intestines, elimination of waste) • Temperature control • Circulation (heart, veins, arteries, capillaries) I can create a system model of human body systems and demonstrate the structure and function of the organs within each system. I can explain the patterns within the levels of organization within an organism. I can describe the properties and functions of stem cells. I can explain how new technology has improved the study of cells through stem cell research I can understand the relationships between structures and functions of organisms. (Plant & Animal Cells) I can evaluate the cause and effect of new technologies on maintaining homeostasis in humans.	Life Science Unit Plan DiscoveryEducation: Key Phrases: 1. "Respiration" 2. "Circulation" 3. "Digestion" What Are Stem Cells TEDed video with questions Homeostasis online lab DiscoveryEducation: Key Phrases: 1. "Homeostasis" 2. "Body Systems"	Hierarchy Respiration Digestion Circulation Stem Cells Organelles Cell division Mitosis Meiosis Multicellular Cell Theory Cell Wall Cell Membrane Nucleus Cytoplasm DNA Mitochondria Unicellular Stimulus Response		

	I can develop a basic understanding of the role of cells in body systems and how those systems work to support the life functions of the organism				

Quarter 4

Life Science – Interactions within Ecosystems

Unit 1 Module 1

Cells and Life

7.L1U1.8 Obtain, evaluate, and communicate information to provide evidence that all living things are made of cells, cells come from existing cells, and cells are the basic structural and functional unit of all living things.

Unit 1 Module 2

Body Systems

7.L1U1.9 Construct an explanation to demonstrate the relationship between major cell structures and cell functions (plant and animal).

7.L1U1.10 Develop and use a [model] to explain how cells, tissues, and organ systems maintain life (animals).

Unit 1 Module 2

Body Systems

7.L1U1.11 Explain how organisms maintain internal stability and evaluate the effect of the external factors on organisms' internal stability.

Unit 4 Module 1

Interactions between Ecosystems

7.L2U1.12 Construct an explanation for how some plant cells convert light energy into food energy.

Inspire Science Grade 7 Book ***Unit 4 Interactions within Ecosystems - Module 1 – Matter and Energy in Ecosystems***

UNIT 4	**INTERACTIONS WITHIN ECOSYSTEMS**
MODULE	**Matter and Energy in Ecosystems**
LESSON	Photosynthesis and Cellular Respiration
LESSON	Flow of Energy
LESSON	Cycling of Matter

Pages in the Book	Skills/Objectives SWBAT or I can ...	Resources/STEM projects	Vocabulary	Accommodations	Assessment

Q4- LIfe Science – Interactions within Ecosystems

7.L2U1.12 Construct an explanation for how some plant cells convert light energy into food energy.

Unit 4 **Module 1** Interactions between Ecosystems Lesson 1 Photosynthesis and Cellular Respiration page 4 / 6 days Lesson 2 Flow of Energy page 24 / 5 days Lesson 3 Cycling of Matter page 42 /5 days	I can compare different structures and functions of plants and animals and explain how they help them grow, survive, and reproduce. I can explain how cells use light in photosynthesis and change it to make food. I can relate the following structures of living organisms to their functions (plants): • Transportation (stomata, roots, xylem, phloem) • Absorption (roots, xylem, phloem) • Response to stimuli (phototropism, hydrotropism, geotropism) - roots, xylem, phloem) I can understand how cells provide a context for the plant process of photosynthesis and the movement of matter and energy needed for the cell	Photosynthesis in Education information Basic Vocabulary Overview Photosynthesis Reading DiscoveryEducation: Key Phrases: 1. "Organisms in their Environment" 2. "Producers" 3. "Plant Structures" Single Cell Organism begins photosynthesis (Ted Ed with discussion questions) Eggshell Seed Growing Modeling Photosynthesis and Cellular Respiration Celery Transpiration Lab	Zacharias Janssen Anton van Leeuwenhoek Robert Hooke Theodor Schwann Matthias Schleiden Phototropism Hydrotropism Geotropism Xylem Phloem Stimulus Response Cells Structure Function Photosynthesis Organism Tissue Energy		Project Plan Reflection

Additional links and resources that teachers will find very helpful!

Amazing book that will guide you to implement the Scientific and Engineering practices in your everyday lessons. As well as to better understand how to utilize students' background knowledge, previous experiences and the knowledge of the world around us to make those important connections to achieve higher level thinking. Remember the inquiry should be emphasized all year.

A Framework for K-12 Science Education Book link
Practices, Crosscutting Concepts, and Core Ideas (2012)

Months at a glance Excel document Link pending

Treasure Box for teachers

https://docs.google.com/document/d/14LhzDa58fBueUF_I78RUz92deoI4GJeM5bosONib-HQ/edit?usp=sharing

Resources Box where all 7th. Grade teachers can continue to add on links or Google docs to share as well as instructional videos and activities that have worked in the past.

School Year calendar 2021-2022 link – pending to update

Science fair documents link – pending to update

Have a wonderful School Year 2021-2022