INSPIRE CALIFORNIA SCIENCE

GRADE- 8

CURRICULUM PACING GUIDE

Getting Started

- This pacing guide was designed to support teachers and parent educators in the implementation of the "Inspire California Science" curriculum from McGraw-Hill.

- Students will need the McGraw-Hill Consumable text and a student login for online materials such as videos, investigations and assessments. Website https://my.mheducation.com/login Username: Student first name and ID number (i.e. Stella95834) Password: Sutterpeak1

- Module assessments can be printed or assigned to take online. These are helpful to check for understanding and monitor student progress through the curriculum. Please discuss with your teacher if you would like your child to take the assessments and if you would like them assigned to take online or emailed to you as a pdf to print.

- This curriculum is available in hard copy or online. The online program includes accessibility options for students, including a read aloud feature for the textbook. This feature is indicated with a speaker icon in the top corner of the online curriculum. The online student text can be accessed by clicking on "Browse Your Course" on the Dashboard under "Where Do you want to go?" and then clicking on "Program Resources: Course Materials". You can then choose which Unit you want to access.

- The textbook will indicate when you should access online materials (videos, additional activities, etc.). You can access them by logging in, click on "Browse Your Course", click on the Module and/or Lesson and then "Launch Presentation". You can scroll through the resources to find the one you want by clicking on "next resource" at the bottom.

Inspire California Science Unit One: Weeks 1-8		
Week #	Lessons	Unit Focus
1 **Module Opener:** Geologic Time **Lesson One:** Analyzing the Rock and Fossil Records **Essential Question:** How are the analyses of rock formations and the fossils they contain used to establish relative ages of major events in Earth's history?	☐ Pages 2-4 ☐ Pages 5-26 & 49	MS-ESS1-4 Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6 billion-year-old history.
2 **Lesson Two:** Building a Time Line **Essential Question:** How do geologists correlate rock strata across regions to develop the geologic time scale and organize Earth's history?	☐ Pages 27-48 & 50	
3 **STEM Module Project and Wrap-Up** **Module Two Opener:** Natural Selection and Adaptations	☐ Pages 51-53 ☐ Pages 54-56	
4 **Lesson One:** How Traits Change **Essential Question:** How do changes to genetic material alter proteins and, thereby, traits?	☐ Pages 57-78 & 117-118	MS-LS3-1 Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.

5 **Lesson Two:** The Theory of Evolution by Natural Selection **Essential Question:** How can variations in a population result in an adaption as a consequence of its interactions with its environment over time?	☐ Pages 79-100 & 119	MS-LS4-4 Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. MS-LS4-5 Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms. MS-LS4-6 Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.
6 **Lesson Three:** Artificial Selection **Essential Question:** How can humans selectively alter the traits of organisms?	☐ Pages 101-116 & 120	
7 **STEM Module Project and Wrap-Up** **Module Three Opener:** Evidence of Evolution **Lesson One:** Fossil Evidence of Evolution **Essential Question:** What can fossils tell us about evolution?	☐ Pages 121-125 ☐ Pages 126-128 ☐ Pages 129-146 & 163-164	
8 **Lesson Two:** Biological Evidence of Evolution **Essential Question:** What evidence for evolution can living organisms provide? **STEM Module Project and Wrap-Up**	☐ Pages 147-162 & 165 ☐ Pages 166-169	MS-LS4-1 Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past. MS-LS4-2 Apply scientific ideas to construct an explanation for the anatomical similarities and difference among modern organisms and between modern and fossil organisms to infer evolutionary relationships. MS-LS4-3 Analyze displays of pictorial data to compare patterns

		of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.
Inspire California Science Unit Two: Weeks 9-20		
Week #	Lessons	Unit Focus
9 **Module Opener:** Forces and Motion **Lesson One:** Position and Motion **Essential Question:** How do units and direction describe position and motion?	☐ Pages 2-4 ☐ Pages 5-32 & 95-96	MS-PS2-1 Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects. MS-PS2-2 Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object. MS-PS2-4 Construct and present arguments using evidence to support the claim that gravitational interaction are attractive and depend on the masses of interacting objects.
10 **Lesson Two:** Fore and Acceleration **Essential Question:** How does a push or pull affect motion?	☐ Pages 33-56 & 96-97	
11 **Lesson Three:** Force Pairs **Essential Question:** How does Newton's third law relate to force pairs and collisions?	☐ Pages 57-74 & 97-99	
12 **Lesson Four:** Gravitational Force **Essential Question:** How do objects interact with non-contact forces? **STEM Module Project and Wrap-Up**	☐ Pages 75-94 & 100-101 ☐ Pages 102-103	
13 **Module Two Opener:** Mechanical Energy	☐ Pages 104-106	MS-PS3-1 Construct and interpret graphical displays of data to describe the

Lesson One: Kinetic Energy **Essential Question:** What factors determine the kinetic energy of an object?	☐ Pages 107-124 & 161-162	relationships of kinetic energy to the mass of an object and to the speed of an object.
14 & 15 **Lesson Two:** Potential Energy **Essential Question:** What factors determine the potential energy of an object?	☐ Pages 125-140 & 162-163	MS-PS3-2 Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are store in the system.
Lesson Three: Conservation of Energy **Essential Question:** How are different types of energy used?	☐ Pages 141-160 & 164	MS-PS3-5 Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.
STEM Module Project & Wrap-Up	☐ Pages 165-167	
16 **Module Three Opener:** Electromagnetic Forces	☐ Pages 168-170	MS-PS2-3 Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.
Lesson One: Magnetic Forces **Essential Question:** How do magnetic fields interact?	☐ Pages 171-196 & 261	MS-PS2-5 Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.
17 **Lesson Two:** Electric Forces **Essential Question:** How do electric charges attract and repel objects?	☐ Pages 197-216 & 262	
18 & 19 **Lesson Three:** Simple Circuits **Essential Question:** How does a simple circuit function? (cont.)	☐ Pages 217-232 & 262	MS-PS3-2 Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.

Lesson Four: Electromagnetism **Essential Question:** What is the relationship between electricity and magnetism?	☐ Pages 233-260 & 263	
20 **STEM Module Project and Wrap-Up** **Unit 3 Module One Opener:** Introduction to Waves	☐ Pages 264-267 ☐ Pages 2-4	
Inspire California Science Unit Three: Weeks 21-28		
21 & 22 **Lesson One:** Wave Properties **Essential Question:** How do the properties of waves correspond with observations of waves? **Lesson Two:** Mechanical Wave Interactions **Essential Question:** How are waves reflected, absorbed, and transmitted through various materials? **STEM Module Project and Wrap-Up**	☐ Pages 5- 34 & 55-56 ☐ Pages 35-54 & 56-57 ☐ Pages 58-61	MS-PS4-1 Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave. MS-PS4-2 Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials. MS-ETS1-2 Evaluate competing design solutions using systematic process to determine how well they meet the criteria and constraints of the problem.
23 **Module Two Opener:** Light **Lesson One:** How Light Travels **Essential Question:** How are light waves similar to and different from mechanical	☐ Page 62-64 ☐ Pages 65-84 & 143	MS-PS4-2 Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials. MS-ET1-4 Develop a model to generate data for iterative testing and modification of a

waves in how they travel and interact?		proposed object, tool, or process such that an optimal design can be achieved.
24 **Lesson Two:** Reflection and Mirrors **Essential Question:** How does light reflect?	☐ Pages 85-104 & 144	
25 **Lesson Three:** Refraction and Lenses **Essential Question:** How does light refract through materials?	☐ Pages 105-122 & 144	
26 **Lesson Four:** Color of Light **Essential Question:** What are colors? **STEM Module Project and Wrap-Up**	☐ Pages 123-142 & 145 ☐ 146-149	
27 **Module Three Opener:** Information Technologies **Lesson One:** Communicating with Signals **Essential Question:** How do people communicate? **Lesson Two:** Modern Communication with Digital Signals **Essential Question:** Why are digital signals more reliable than analog signals?	☐ Pages 150-152 ☐ Pages 153-168 & 195 ☐ Pages 169-194 & 196	MS-PS4-3 Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.
28 **STEM Module Project and Wrap-Up** **Unit Four Module One Opener:** Earth and Human Activity	☐ Pages 197-199 ☐ Pages 2-4	

Inspire California Science Unit Four: Weeks 28-		
29 & 30 **Lesson One:** Human Population Growth **Essential Question:** How does a growing human population affect consumption of resources? **Lesson Two:** People and Environment **Essential Question:** How does resource consumption affect the environment? **STEM Module Project & Wrap-Up**	☐ Pages 5-26 & 45 ☐ Pages 27-44 & 46 ☐ Pages 47-51	MS-ESS3-4 Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.
31 **Module Two Opener:** The Sun-Earth-Moon System **Lesson One:** Earth's Motion Around the Sun **Essential Question:** What causes the cyclic pattern of the seasons?	☐ Pages 52-54 ☐ Pages 55-74 & 111-112	MS-ESS1-1 Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.
32 & 33 **Lesson Two:** Lunar Phases **Essential Question:** What causes the cyclic pattern of lunar phases? **Lesson Three:** Changing Ecosystems **Essential Question:** How do natural and human disruptions to physical and **STEM Module Project and Wrap-Up**	☐ Pages 75-90 & 113 ☐ Pages 91-110 & 114 ☐ Pages 115-119	

34 **Module Three Opener:** Exploring the Universe **Lesson One:** Gravity and the Universe **Essential Question:** How does gravity affect the formation of objects in space?	☐ Pages 120-122 ☐ Pages 123-140 & 163-164	MS-ESS1-2 Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system. MS-ESS1-3 Analyze and interpret data to determine scale properties of objects in the solar system.
35 **Lesson Two:** The Solar System **Essential Question:** What are the distinguishing properties of objects in our solar system?	☐ Pages 141-162 & 164-165	
36 **STEM Module Project and Wrap-Up**	☐ Pages 166-169	