Course Title:	Content Area:	Grade Level:	Credit (if applicable)
Shooting Stars	**Science**	**5**	N/A

Course Description:

Students will explore the phenomena of shooting stars to learn more about stars, patterns in space, and the phases of matter in this unit. They are presented with a discovery question in Learning Sequence 1, and continue to explore and refine their answer to the question throughout the following sequences.

In Learning Sequence 1, students explore the concept of shooting stars through watching an introductory video. After watching, they are presented with the unit's discovery question: Is a shooting star a star? They'll base their initial answer off of prior knowledge, and form an agree-disagree line to discuss and revise their ideas. In small groups, students generate a list of questions around the phenomena-"Is a shooting star really a star?". They share their top three questions with the class, and the class organizes the top questions into a driving question board. The driving question board guides the learning in future learning sequences. Later in the unit, students will return to the DQB to answer or respond to their initial questions.

In Learning Sequence 2, students investigate and research stars to generate a list of characteristics common to all stars, and summarize their list to create a definition. Students also investigate the magnitude of stars and use their observations to determine the comparative distance of different stars to Earth. Using the generated list, students look back to their initial anchor phenomenon observations and begin to revise their thinking about the shooting star. As students develop an understanding of stars and their brightness, they will be able to apply the concept of brightness as evidence that the shooting star can not be an actual star. Students end the learning sequence with a self-written definition of a star and updating their Summary Table.

In this Learning Sequence 3, students explore the patterns associated with the sun, earth, and moon. Students explore and model various celestial patterns including day and night, (seasons is only touched upon, this is taught again in Expedition Antarctica)shadows, and the moon phases. Then they analyze shooting star data to determine the shooting stars have the same predictable nature as other celestial events. Through research, students realize that meteor showers are predictable and happen during the same times each year. As the Earth passes through fields of comet debris, some of the debris enters the earth's atmosphere, creating "shooting stars" or meteor showers. Ultimately, students will use their research to claim that shooting stars are not stars. They will explain that because of Earth's orbit and the predictability of location and time, the Earth passes through the same debris field annually, making meteor showers predictable.

In Learning Sequence 4, students have figured out that shooting stars are not stars but are meteors that enter the atmosphere and burn up creating the streak we see across the night sky. Despite the burning, the amount of matter in the meteor is conserved. This Learning Sequence helps students understand that matter cannot disappear. Students will conduct experiments to investigate physical properties of substances. They will determine that matter is conserved as it changes states or is mixed. They will plan investigations, and make and record observations throughout each exploration activity and teacher demonstrations. Students will measure and collect data, making graphical representations of their findings. Students will test samples based on physical properties to identify an actual meteorite. At the end of the sequence, students explain that matter is conserved related to the burning of a meteor as it enters Earth's atmosphere.

In Learning Sequence 5, students review the states of matter from their matter conservation experiments and question the state of matter of a star and a shooting star. Students investigate states of matter and the organizational difference of the particles in those different states. Students apply their understanding of the organizational and particle differences to develop a model representing the three states of matter: solid, liquid, gas. Then, students explore the state of plasma. Stars are composed of matter and are in the state called plasma. Students research the arrangement of the particles in plasma and extend their three dimensional models to include plasma. The sequence ends with explanatory models of each solid, liquid, gas, and plasma.

The final task asks students to apply what they've learned throughout the unit to generate a model that

represents the similarities and differences between a “shooting star” and a star. Students use evidence/learned content from each of the learning sequences to make the comparison and can choose a format of how to present their ideas.

Aligned Core Resources:	**Connection to the *BPS Vision of the Graduate***
N/A	Collaboration • Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal • Assume shared responsibility for collaborative work and value the individual contributions made by each team member Communication • Articulates thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts Critical Thinking and Problem Solving • Collect, assess and analyze relevant information • Reason effectively. • Make sound judgements and decisions. Identify, define and solve authentic problems and essential questions. • Reflect critically on learning experience, processes and solutions. • Transfer knowledge to other situations
Additional Course Information: ***Knowledge/Skill Dependent courses/prerequisites***	**Link to *Completed Equity Audit***
N/A	Grade 5 Science Equity Audit

Standard Matrix

District Learning Expectations and Standards	**Unit 1**	**Unit 2**	**Unit 3**
5-PS1-1. Develop a model to describe that matter is made of particles too small to be seen.	X		X
5-PS1-2. Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.	X		
5-PS1-3. Make observations and measurements to identify materials based on their properties.	X		
5-PS1-4. Conduct an investigation to determine whether the mixing of two or more substances results in new substances.	X		
5-PS2-1. Support an argument that the gravitational force exerted by Earth on objects is directed down.			X
5-PS3-1. Use models to describe that energy in animals’ food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.		X	

ESS1.A: The Universe and its Stars: The sun is a star that appears larger and brighter than other stars because it is closer. Stars range greatly in their distance from Earth.	X		
5-ESS1-2. Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.	X	X	X
5-ESS2-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.			X
5-ESS2-2. Describe and graph the amounts of saltwater and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.			X
5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.		X	
5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water.		X	
5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.		X	
3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.		X	
3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.			X

Unit Links

If unit headings are formatted as a heading, then we can link a Table of Contents to better organize and provide faster access to each unit

Shooting Stars
Golden Jellies
Expedition Antarctica

Unit Title:

Shooting Stars

Relevant Standards: Bold indicates priority

- ESS1.A: The Universe and its Stars: The sun is a star that appears larger and brighter than other stars because it is closer. Stars range greatly in their distance from Earth.

SEP	Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.
DCI	Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted.
CCC	Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. Science assumes natural events happen today as they happened in the past. Many events are repeated.

- 5-PS1-1. Develop a model to describe that matter is made of particles too small to be seen.

SEP	Use models to describe phenomena.
DCI	Matter of any type can be subdivided into particles that are too small to see, but even then the matter still exists and can be detected by other means. A model showing that gasses are made from matter particles that are too small to see and are moving freely around in space can explain many observations, including the inflation and shape of a balloon and the effects of air on larger particles or objects.
CCC	Natural objects exist from the very small to the immensely large.

- 5-PS1-2. Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.

SEP	Measure and graph quantities such as weight to address scientific and engineering questions and problems
DCI	• **PS1.A:** Structure and Properties of Matter The amount (weight) of matter is conserved when it changes form, even in transitions in

<table>
<tr><td></td><td>
<table>
<tr><td></td><td>• PS1.B: Chemical Reactions No matter what reaction or change in properties occurs, the total weight of the substances does not change. (Boundary: Mass and weight are not distinguished at this grade level.)</td></tr>
<tr><td>CCC</td><td>• Standard units are used to measure and describe physical quantities such as weight, time, temperature, and volume.
• Science assumes consistent patterns in natural systems.</td></tr>
</table>
</td></tr>
<tr><td>• 5-PS1-3. Make observations and measurements to identify materials based on their properties.</td><td>
<table>
<tr><td>SEP</td><td>Make observations and measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon.</td></tr>
<tr><td>DCI</td><td>Measurements of a variety of properties can be used to identify materials. (Boundary: At this grade level, mass and weight are not distinguished, and no attempt is made to define the unseen particles or explain the atomic scale mechanism of evaporation and condensation.)</td></tr>
<tr><td>CCC</td><td>Standard units are used to measure and describe physical quantities such as weight, time, temperature, and volume.</td></tr>
</table>
</td></tr>
<tr><td>• 5-PS1-4. Conduct an investigation to determine whether the mixing of two or more substances results in new substances.</td><td>
<table>
<tr><td>SEP</td><td>Conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered.</td></tr>
<tr><td>DCI</td><td>When two or more different substances are mixed, a new substance with different properties may be formed</td></tr>
<tr><td>CCC</td><td>Cause and effect relationships are routinely identified and used to explain change</td></tr>
</table>
</td></tr>
<tr><td>• 5-ESS1-2. Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.</td><td>
<table>
<tr><td>SEP</td><td>Represent data in graphical displays (bar graphs, pictographs and/or pie charts) to reveal patterns that indicate relationships.</td></tr>
<tr><td>DCI</td><td>The orbits of Earth around the sun and of the moon around Earth, together with the rotation of Earth about an axis between its North and South poles,</td></tr>
</table>
</td></tr>
</table>

	cause observable patterns. These include day and night; daily changes in the length and direction of shadows; and different positions of the sun, moon, and stars at different times of the day, month, and year.
CCC	Similarities and differences in patterns can be used to sort, classify, communicate and analyze simple rates of change for natural phenomena.

Essential Question(s):	**Enduring Understanding(s):**
• Is a shooting star really a star? • What is a star? • What are the patterns of the Earth, sun, moon, and shooting stars? • Is matter lost or destroyed when a meteoroid enters Earth's atmosphere? • What is matter? ○ What state of matter is a shooting star?	• Describe that matter is made of particles too small to be seen. • Understand that regardless of the type of change matter undergoes, the total weight of matter is conserved. • Understand patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.
Demonstration of Learning:	**Pacing for Unit**

• LS4 - CFA
  ○ Does the amount of mass change as a meteoroid enters the Earth's atmosphere?
  ○ Students write 3-5 sentences in their Science Notebooks about the conservation of matter and meteorites entering the atmosphere to gather ideas and questions
• Culminating Task
  ○ In this task, students apply what they've learned throughout the unit to generate a model that represents the similarities and differences between a shooting star and a star.
  ■ Options: A report, A Slides presentation, A poster or brochure, Accept any reasonable suggestions
	6 weeks

Family Overview (link below)	**Integration of Technology:**
Family Overview - Unit 1	*Intentionally aligned use of digital tools and resources to support acquisition of content, researching, organizing and communicating learning* • *Digital Science Notebook* • *Graphing Weights of Substances*

	• PHET Interactive Simulations
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**

Analyze	Model	Phenomena
Matter	Solid	Liquid
Gas	Plasma	Particle
Observation	Effects	Measure
Immense	Graph	Quantity
Substances	Conservation	Form
Evidence	Chemical reactions	Standard units
Weight	Time	Temperature
Scientific Questions	Engineering questions	Problems
Data	Properties	Investigation
Fair Test	Variable	Control
Trial	Substance	Cause/Effect Relationship
Change	Change	Argument
Graphical Display	Bar Graph	Pictograph
Orbit	Revolution	Axis
Rotation	North/South Pole	Classify
Apparent brightness/magnitude		

- Books in Bin:
  - From Galileo to the Mars Rover and Beyond-Exploring Space
  - Hidden Figures
  - Margaret and the Moon
  - Next Time You See a Sunset
  - Seven Wonders of the Solar System
  - Stars (Jump Into Science)
  - Voyager's Greatest Hits-the Epic Trek to Interstellar Space
  - When the Sun Goes Dark, Star Stuff-Carl Sagan
  - When I heard the Learn'd astronomer
  - Elon Musk and the Quest for a Fantastic Future; Space Exploration
  - The Sun, S. Simon
- Epic! Book Collection
- Shooting Stars At Night - LS1
- Otional: Virtual Field Trip to International Space Station
- The Anvil of Creation Video
- Sci Show Kids Star Video
- Crash Course Kids Stars Video
- Day & Night Time Lapse Video
- Day on Earth Study Jams video
- Shadows Crash Course Video
- Moon Phases Demonstration Video
- Moon Phases Crash Course
- Scale Model Video
- Meteor Showers Article
- Meteor Showers 101 National Geographic
- Properties Video
- Sugar Dissolving Video
- Elephant Toothpaste
- Conservation of Matter Video
- Meteor vs. Meteorite Video
- Meteorite Identification Article
- Plasma Article
- PHET Interactive Simulations
- Meteors 101 National Geographic

Opportunities for Interdisciplinary Connections:	**Anticipated misconceptions:**
Literacy connections: • Students are asking and answering questions.	• The Sun is not a star • The Sun disappears at night • The surface of the Sun is without visible features

• Students draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. • Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. • Recalling information and data from multiple sources Mathematics connections: • Measuring and estimating • Reason abstractly and quantitatively. • Use appropriate tools strategically • Recognize volume as an attribute of solid figures • Represent real world and mathematical problems by graphing	• The Sun rises exactly in the east and sets exactly in the west every day • All stars are the same brightness in space • The Sun is very close to Earth • Stars are a similar distance away from Earth • The height the sun reaches in the sky on any given day is the same everywhere on earth • The highest point the sun reaches in the sky is the same throughout the year • The number of hours of daylight is the same anywhere on earth • The number of hours of daylight a place receives is due to how far the earth is from the sun • Mass is not conserved during chemical reactions • New mass is created during chemical reactions • Mass can become lighter or less in a chemical reaction • Matter that we can't see has disappeared • Air does not take up space • Matter exists only when we can see or feel it • Particles of a solid, liquid or gas are not moving • The gaseous state of a substance weighs less than its liquid or solid form • If two substances share a characteristic property, they are the same substance
Connections to Prior Units:	**Connections to Future Units:**
Connections to: • Grade 1 Unit 1: Shadows on the Playground • Grade 2 Unit 1: 4th Little Pig	Connections to: • Grade 6 Unit 3: Energy Drinks • Grade 7 Unit 3: Jetpackson Earth and in Space • Grade 7 Unit 4: Congo Medicine Drop • Grade 8 Unit 3: Navigating the Seas throughout Human History
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Comprehension 3.3	• Provide interactive models that guide exploration and new understandings • Progressively release information (e.g., sequential highlighting)
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
4-5.5 conduct research and evaluate and communicate findings to answer questions or solve problems.	I can gather information from multiple resources to demonstrate my learning of shooting stars.

Learning Sequence	Learning Target & Success Criteria	Resources
1	I can make observations and ask questions on shooting stars. ☐ I can make 2-3 observations.	• science notebook

	☐ I can ask what, where, when, why questions.	• Epic! Book Collection • loom video as an option
2	I can list characteristics of stars from a variety of sources. ☐ I listed 3-5 characteristics I can generate a simple definition of a star ☐ I used the characteristics to define a star ☐ I did not use the word star in my definition I can explain why the sun appears larger and brighter than other stars ☐ I included the relationship of distance ☐ I used evidence from flashlight activity in my explanation I can make a claim about whether or not a shooting star is a star ☐ I used the characteristics of stars, including size, to make my claim	• STARFORGE: The Anvil Creation • scishow kids stars; crash course kids stars • Science Learning Hub • National Geographic article *Stars* • CK-12 Resources: Stars, Sun • EPIC: Galaxies and Stars: star resource • EPIC! Digital Library - G5 U1B Lis • Think, Pair, Share strategy
3	I can explain the rotation of the Earth about an axis as the pattern of day and night ☐ I explained how the Earth rotates on an axis ☐ I explained the pattern of day and night I can use evidence to explain the changing patterns of sun-related shadows throughout the day ☐ I explained how and why shadows change throughout the day I can explain what causes the phases of the moon ☐ I explained the reason for the different moon phases I can demonstrate with a simulation the regular patterns of the orbit of the Earth around the sun and the orbit of the moon around the earth ☐ I demonstrated the pattern of the earth orbit around the sun and the moon around the earth I can explain that shooting stars are really predictable patterns of meteor showers ☐ I explained the predictable patterns of meteor showers	• Time Lapse Video • Study Jam Video • Shadows crash course kids • Moongiant website • Video Demo Earth, Moon, Sun relationship-28 minute video from Glastonbury Planetarium • CK-12 Resources: Lunar Phases • CK-12: Meteors
4	I can identify and provide examples of the three common states of matter ☐ I identified the three states of matter ☐ I gave 2 to 3 examples of each state of matter	• meteorite video • sugar dissolving • Elephant Toothpaste Demonstration Procedure • Vacation or

	I can describe common materials by their physical properties ☐ I described a material using at least 3 different physical properties I can conduct investigations involving changing states of matter ☐ I conducted an investigation on changing states of matter I can conduct an investigation to determine if mixing two substances results in a new substance ☐ I conducted an investigation of mixing two substances ☐ I described why mixing two substances created a new substance I can record data and represent it with a graph to show a relationship ☐ I recorded and graphed the data ☐ I used the data to explain the relationship between of the two substances I can use data to determine if matter is conserved ☐ I explained the term conservation ☐ I used evidence to prove my claim I can explain what happens when a meteoroid hits earth's atmosphere with a model ☐ I created a model of a meteoroid traveling through the earth atmosphere ☐ I labeled the three different terms meteoroids, meteors and meteorite ☐ I explained the relationship between meteoroids, meteors and meteorite I can use physical properties of a meteorite to identify specimens ☐ I tested the specimens using the tools safely ☐ I collected evidence on each specimen on my recording sheet ☐ I used evidence to prove which specimen was a meteorite	Conservation (Of Mass) • meteorite video • Difference between meteor and meteorite
5	I can describe the 3 states of matter and provide examples ☐ I described the 3 states of matter ☐ I gave 2-3 examples of each state of matter I can identify the fourth state of matter, plasma, in a star ☐ I can identify the fourth state of matter I can demonstrate understanding of particle arrangement and behavior with an explanatory model of the four states of matter ☐ I demonstrated, using my model, the four states of matter ☐ I showed differences in particle arrangement of the four states of matter	• States of Matter: Basics
6	I can-generate and present an explanatory model that represents the similarities and differences between a star and a "shooting star"(culminating task) ☐ I showed at least 4 ways meteors are different from or similar to	

	stars ☐ I showed at least 3 - 5 pieces of evidence to support my model ☐ I used respected sources and past investigations form the unit to support my mode ☐ I presented my model in an organized presentation	

Unit Title:

Golden Jellies

Course Description

This unit is designed to build student's understanding of life on Earth and the factors which allow species to survive and thrive and humanity's role in this. Students study the Golden Jellyfish of Lake Palau as an anchoring phenomena. The Jellyfish of Lake Palau are a non stinging jellyfish that have evolved in isolation in Lake Palau's salt lake. The jellyfish has a symbiosis with zooxanthellae (algae). The zooxanthellae live in the tissues of the Jelly and convert sunlight to sugar using photosynthesis. This sugar is the food source for both the zooxanthellae and the jelly. Because of the zooxanthellae need for direct sunlight, the Golden Jellyfish travel across lake Palau daily to guarantee direct sunlight.

Students share their experiences and prior knowledge about jellyfish, then observe a video of a man swimming through Lake Palau with the Golden Jellyfish. Their prior understanding and observations will have some contradictions. After watching the video students will generate questions and create a driving question board to guide the rest of the unit.

Through the learning in the sequence 2, students come to understand the role of sunlight and other abiotic factors to the success of an organism within an ecosystem. The golden jellyfish of Lake Palau are in a unique ecosystem and meet their needs in a unique way, a symbiotic relationship with photosynthetic algae. Students research the role of sunlight, abiotic factors and the algae (plant/food) in the success of the Jellies in Lake Palau

In sequence 3, students build their understanding of the word ecosystem, as they begin to map how matter moves through the biotic and abiotics factors found within the system. Students relate this system's thinking to the Lake Palau ecosystem, where students learn the means through which matter travels . Students build an understanding of the types of organisms present and their relationship with one another in the process of moving matter and energy.

The golden jellyfish has zooxanthellae (algae) that lives within its tissues. The zooxanthellae use sunlight to make sugar (food) for both itself and the Golden Jellyfish. As a result of this partnership, the golden jellyfish needs access to direct sunlight to get food. To improve the amount of food accessed during the day, the Golden Jellyfish travels across Lake Palau with the sun. This pattern of the sun (daily and seasonal) is essential to the success of the two species-zooxanthellae and golden jellyfish. In sequence 4, students understand the symbiosis and the daily migration of the jellies to improve access to food.

The location of Palau and its famous Jellyfish lake is amidst the most popular shipping route in the world. While Palau itself has limited visitors and a small human population, the trade route impacts the region in a variety of ways. The greater the number of ships traveling through the South Pacific increases the risk for an oil spill or other harmful pollutants to enter the ecosystem. All pollution impacts the trophic levels of the Palau environment. Learning sequence 5 asks students to predict how human interactions may be affecting the population of the golden jellyfish.

In the culminating performance task, students show their understanding of ecosystem dynamics by developing a final model of how the Golden Jellyfish survives and thrives in Lake Palau.

Relevant Standards: Bold indicates priority

5-PS3-1. Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.	**SEP**: Use models to describe phenomena. **DCI**: • The energy released [from] food was once energy from the sun that was captured by plants in the chemical process that forms plant matter (from air and water). • Food provides animals with the materials they need for body repair and growth and the energy they need to maintain body warmth and for motion. (secondary) **CCC**: Energy can be transferred in various ways and between objects.
5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water.	**SEP**: Support an argument with evidence, data, or a model. **DCI**: Plants acquire their material for growth chiefly from air and water. **CCC**: Matter is transported into, out of, and within systems.
5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.	**SEP**: • Develop a model to describe phenomena. • Science explanations describe the mechanisms for natural events. **DCI**: • The food of almost any kind of animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as "decomposers." Decomposition eventually restores (recycles) some materials back to the soil. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem • Matter cycles between the air and soil and among plants, animals, and microbes as these organisms live and die. Organisms obtain gasses, and water, from the environment, and release waste matter (gas, liquid, or solid) back into the environment.

	CCC: A system can be described in terms of its components and their interactions.
5-ESS1-2. Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky	SEP: Represent data in graphical displays (bar graphs, pictographs and/or pie charts) to reveal patterns that indicate relationships. DCI: The orbits of Earth around the sun and of the moon around Earth, together with the rotation of Earth about an axis between its North and South poles, cause observable patterns. These include day and night; daily changes in the length and direction of shadows; and different positions of the sun, moon, and stars at different times of the day, month, and year. CCC: Similarities and differences in patterns can be used to sort, classify, communicate and analyze simple rates of change for natural phenomena.
5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.	SEP: Obtain and combine information from books and/or other reliable media to explain phenomena or solutions to a design problem. DCI: Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air, and even outer space. But individuals and communities are doing things to help protect Earth's resources and environments. CCC: • A system can be described in terms of its components and their interactions. • Science findings are limited to questions that can be answered with empirical evidence.
3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost	SEP: Define a simple design problem that can be solved through the development of an object, tool, process, or system and includes several criteria for success and constraints on materials, time, or cost. DCI: Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets

	the specified criteria for success or how well each takes the constraints into account.
CCC	People's needs and wants change over time, as do their demands for new and improved technologies.

Essential Question(s):	**Enduring Understanding(s):**
• What questions do we have about the jellyfish of Lake Palau? • What do species need to survive and thrive? • Why is an ecosystem a system? • How does matter move through the system? • How do the predictable patterns of the Sun affect living things, including zooxanthellae and Golden Jellyfish, on Earth? • What impact are human activities having on the Earth and what can humans do to protect the Earth and the Earth's resources?	• Describe the ways the geosphere, biosphere, hydrosphere and/or atmosphere interact. • Understand that plants get the materials they need for growth chiefly from air and water. • Describe the movement of matter among plants, animals, decomposers, and the environment and that energy in animals' food was once energy from the sun. • Understand patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.
Demonstration of Learning:	**Pacing for Unit**

• CFA LS2
  ○ Student Assessment Task
  ○ Rubric
• CFA LS3
  ○ Why is an ecosystem a system?
  ○ Template
• CFA LS 4
  ○ How do the predictable patterns of the sun affect living things?
  ○ Google Form
• Culminating Task: Human Impact
  ○ Examples
  ○ Research Resources
	6 weeks

Family Overview (link below)	**Integration of Technology:**

Family Overview - Unit 2	*Intentionally aligned use of digital tools and resources to support acquisition of content, researching, organizing and communicating learning*
	• Digital Student Science Notebook
	• Synthesizing Information from Multiple Resources
	  ○ Temperate Deciduous Forest Jamboard
	  ■ Student Research Resources
	  ○ Human Impact
	• Mangrove Ecosystem Simulation

Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**

Phenomena	Energy	Repair
Body Warmth	Chemical Process	Transferred
Support	Systems	Decomposers
Environment	Ecosystem	Organisms
Food Web	Fungi	Bacteria
Recycle	Survive	Species
Balance	Microbes	Components
Interactions	Graphical Display	Bar Graph
Pie Chart	Interactions	Classify
Analyze	Protect	Human Activities
Agriculture	Industry	Major Effects
Vegetation	Criteria	Constraints
Proposal	Compared	Demands
Improved	Technologies	Communities

- Intro to Golden Jellies Video
- Smithsonian Museum SlideShow Coral Reefs
- Discover Files Abiotic & Biotic Factors Article
- EPIC! Books Collection
- Lake Paula Information (for Jigsaw)
- Jellyfish Lake Article
- Snorkeling Amongst the Jellies Article
- Ecosystems Study Jams
- Flow of Matter Article
- Sun Seeking Plant Time Lapse Video
- Plant Following Light Video
- Earth's Rotation Video
- Golden Jellies Migration Video
- Gotta Eat! Crash Course Video

Opportunities for Interdisciplinary Connections:

Literacy connections:

- Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.
- Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.
- Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.
- Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources.
- Include multimedia components (e.g.,

Anticipated misconceptions:

- All jellyfish only live in saltwater
- Jellyfish are fish
- The jellyfish were placed in Lake Palau
- Humans have no impact on the environment
- All jellyfish are dangerous

graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. Mathematics connections: • Use appropriate tools strategically. • Convert among different-sized standard measurement units within a given measurement system • Represent real world and mathematical problems.	
Connections to Prior Units:	**Connections to Future Units:**
Connections to: • Kindergarten Unit 2: Mystery Class Pet • Grade 1 Unit 1: Shadows on the Playground • Grade 2 Unit 2: Beavers • Grade 4 Unit 2: Bear Sense • Grade 4 Unit 3: Forces That Move Earth	Connections to: • Grade 6 Unit 1: Engineering a Bio-Bottle
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation 3.1	• Anchor instruction by linking to and activating relevant prior knowledge (e.g., using visual imagery, concept anchoring, or concept mastery routines) • Pre-teach critical prerequisite concepts through demonstration or models
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
4-5.4 construct grade appropriate oral and written claims and support them with reasoning and evidence.	I can gather information from multiple resources to demonstrate my learning of how the Golden Jellies survive and thrive in Lake Palau.

Learning Sequence	Learning Target & Success Criteria	Resources
1	I can share experiences and current understandings of jellyfish ☐ I shared my knowledge about jellyfish I can make observations and ask questions about the Golden Jellies of Lake Palau ☐ I made observations about the Golden Jellyfish ☐ I asked what, where, when, why questions. ☐ I asked at least 3 questions about Golden Jellyfish I can identify patterns from the Golden jellies that are the same or different from current understandings on jellyfish ☐ I explained the movement pattern of the Golden Jellyfish ☐ I added to my understanding of how the Golden Jellyfish was	• Great Migrations from • Great Migrations from National Geographic • Intro to Golden Jellies Video

	different that other Jellyfish	
2	I can define ecosystem and apply related unit vocabulary ☐ I defined the term ecosystem I can compare healthy and unhealthy ecosystems to begin to understand what they need to thrive ☐ I defined an healthy and unhealthy ecosystem ☐ I showed examples of what an ecosystem needed to thrive ☐ I was able to identify the differences between a healthy and unhealthy ecosystem I can show how a local organism fits in its ecosystem, with focus on abiotic factors ☐ I identified the abiotic factors in an ecosystem ☐ I created a model of how a local organism fits into our local system I can identify the role the sun plays in ecosystems ☐ I explained the role of the sun in an ecosystem	• National Geographic,Epic • Photosynthesis: Changing Sunlight Into Food • Photosynthesis: Changing Sunlight Into Food • PebbleGo • Information on the geography of Micronesia • Stanford Students Study Heat in Coral Reef video • Climate Change Palau video • Coral Reef System Studies Stanford Students video • **Virtual Field trip video**
3	I can identify key factors that work together in an ecosystem though Readers Theatre ☐ I identified the factors that work together in an ecosystem ☐ I created a poster showing my understanding of food chain based on the Readers Theatre I can obtain information on the how the Golden Jellies interact with biotic and abiotic factors ☐ I demonstrated how the Golden Jellyfish interacts with the biotic and abiotic factors of their ecosystem I can create an explanatory model to show how matter and energy move through the Golden Jelly ecosystem and at least one other ecosystem ☐ I created a model on how matter and energy move through the Golden Jellyfish ecosystem ☐ I created a model on how matter and energy move through the a different ecosystem I can compare the Golden Jelly Ecosystem to a different ecosystem ☐ I compared the Golden Jellyfish ecosystem to another ecosystem	• Lake Palau ecosystem information from PBS • Ecosystem Resource • Flow of Matter from CK-12 • The State of Coral Reef Ecosystem in Palau • international trade routes

4	I can identify patterns of how organisms respond to sunlight ☐ I explained how organisms respond to light I can explain the necessary pattern of movement of the Golden Jellies across Lake Palau ☐ I explained why the Golden Jellyfish move in a predictable pattern I can explain why all living things need food ☐ I explained why all living things need food I can explain what would happen to Jellies and their ecosystem if there was interruption to the sunlight ☐ I explained the effect of the interruption of sunlight to the Golden Jellyfish ecosystem I can explain how the predictable patterns of sun affect living things(CFA prompt) ☐ I explained how predictable patterns of the sun affect living things	• Algae Beads • Photosynthesis: Changing Sunlight Into Food • Gotta Eat!- Crash Course Kids 1.1 • Sun-Seeking Plant Time Lapse • Time Lapse- Plant Following Light • Patterns • golden jellies movement • Gr5 Jellies LS4 CFA
5	I can define and research a problem that relates to human interference with ecosystems ☐ I researched human interference with an ecosystem ☐ I used multiple resources to research ☐ I created a presentation to show how humans interference with ecosystems I can explain what humans are doing to solve ecosystem problems ☐ I can share how humans are solving ecosystem problems I can identify which part (biotic or abiotic) is most disrupted in various ecosystem ☐ I identified which is more disruptive to these ecosystems, biotic or abiotic. I can investigate clean up methods through oil spill simulation ☐ I created a model habitat which will suffer an oil spill. ☐ I created a claim about what methods will clean up the simulated oil spill ☐ I tested different tools to clean the habitat as best as possible. ☐ I presented the method and materials that best cleaned up the simulated oil spill and the advantages of using this method	• A swim through Jellyfish lake video • Natural Resources (CK-12) • People and the Planet (getEPIC) numerous topics • Environmental Activist (getEPIC) numerous topics
6	I can gather information from multiple resources to demonstrate my learning of how humans impact ecosystems. ☐ I used multiple resources to show my learning on the human impact on ecosystems ☐ I presented this information in a organized presentation	• Research Resources

Unit Title:

Course Name (BOE Approved Date)

Expedition Antarctica

Course Description:

Students begin this learning sequence on an expedition research team based in Antarctica. In the unit, their expedition team must make the hike to base camp from a distance due to weather complications. They know the coordinates of their final destination and have survival supplies, but must use tools and scientific discoveries to make their way to safety. Throughout the unit, students encounter a unique series of situations requiring them to discover and apply scientific knowledge to handle the trek.

In this learning sequence 1, students are introduced to their mission and review current weather phenomena in Antarctica. After becoming stranded away from base, they review key materials and resources they will need for their hike to safety. They create a QFT to create questions about how they will manage their hike and their survival needs.

In learning sequence 2, students observe the path the sun appears to travel across the sky, reviewing Earth's movement to navigate the path to safety. They review movements that create both day and night and the seasons. Students will examine how the movement of the Earth causes different observable patterns in different geographical locations. They use this understanding to make predictions and decisions about their journey.

In learning sequence 3, the research expedition team realizes they are running out of water! Students explore the distribution of water on Earth to gather information on safe drinking water. Using cups as a model, or other models, they will predict the distribution of the Earth's water, then research data to evaluate and revise their models. Students will complete graphs comparing salt water, fresh water and the amount of freshwater in reservoirs to determine next steps for their Antarctica mission.

Students address their lack of safe freshwater in Antarctica in learning sequence 4. After identifying water resources and distribution patterns from the previous sequence, they problem-solve different ways to obtain fresh drinking water. They predict, test, and explore methods for safe drinking water.

With their water resources back to safe levels, students follow the map toward the main research base in learning sequence 5. Their path passes both new and old glaciers, and gives the scientists an extra chance to learn about them. In this sequence, students discover how a glacier is formed and how they change over time.

In learning sequence 6, the expedition research team is almost to the research base and back to open communication. Their map indicates a giant iceberg in their path, but there is no iceberg to be found! In this sequence, students explore the phenomena of flipping icebergs. By the end of the lesson, students identify the forces involved in making icebergs flip and continue on their path toward the research base.

For the culminating task, students will apply their learning from all of the learning sequences to write a story detailing a day in their Expedition Research travels. The story must include vocabulary words from earlier learning, as well as a model or illustration documenting their knowledge. Students will present their stories and learning models to the class.

Relevant Standards: Bold indicates priority

5-PS1-1. Develop a model to describe that **matter is made of particles too small to be seen** (just revisited from Bundle 1)

SEP	Use models to describe phenomena.
DCI	Matter of any type can be subdivided into particles that are too small to see, but even then the matter still exists and can be detected by other means. A model showing that gasses are made from matter particles

	that are too small to see and are moving freely around in space can explain many observations, including the inflation and shape of a balloon and the effects of air on larger particles or objects.
CCC	Natural objects exist from the very small to the immensely large.
5-PS2-1. Support an argument that the gravitational force exerted by Earth on objects is directed down.	
SEP	Support an argument with evidence, data, or a model.
DCI	The gravitational force of Earth acting on an object near Earth's surface pulls that object toward the planet's center.
CCC	Cause and effect relationships are routinely identified and used to explain change.
5-ESS1-2. Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky. (revisited from Bundle 1)	
SEP	Represent data in graphical displays (bar graphs, pictographs and/or pie charts) to reveal patterns that indicate relationships.
DCI	The orbits of Earth around the sun and of the moon around Earth, together with the rotation of Earth about an axis between its North and South poles, cause observable patterns. These include day and night; daily changes in the length and direction of shadows; and different positions of the sun, moon, and stars at different times of the day, month, and year.
CCC	Similarities and differences in patterns can be used to sort, classify, communicate and analyze simple rates of change for natural phenomena.
5-ESS2-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.	
SEP	Develop a model using an example to describe a scientific principle.
DCI	Earth's major systems are the geosphere (solid and molten rock, soil, and sediments), the hydrosphere (water and ice), the atmosphere (air), and the biosphere (living things, including humans). These systems interact in multiple ways to affect Earth's surface materials and processes. The ocean supports a variety of ecosystems and organisms, shapes landforms, and influences climate. Winds and clouds in the atmosphere interact with the landforms to

	determine patterns of weather.
CCC	A system can be described in terms of its components and their interactions.

5-ESS2-2. Describe and graph the amounts of saltwater and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.	
SEP	Describe and graph quantities such as area and volume to address scientific questions.
DCI	Nearly all of Earth's available water is in the ocean. Most fresh water is in glaciers or underground; only a tiny fraction is in streams, lakes, wetlands, and the atmosphere.
CCC	Standard units are used to measure and describe physical quantities such as weight and volume.

3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.	
SEP	Generate and compare multiple solutions to a problem based on how well they meet the criteria and constraints of the design problem.
DCI	• Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions. • At whatever stage, communicating with peers about proposed solutions is an important part of the design process, and shared ideas can lead to improved designs.
CCC	Engineers improve existing technologies or develop new ones to increase their benefits, decrease known risks, and meet societal demands.

Essential Question(s):	**Enduring Understanding(s):**
• What would this research team need to survive? • What will you need to learn about Antarctica to survive? • How does the movement of the Earth affect day/night and seasons? • How much of the water on Earth is freshwater and how much is saltwater? • In what ways do humans create and store safe drinking water? • How do glaciers form and what conditions impact them? • How do earth's systems work together?	• Describe and graph data to provide evidence about the distribution of water on Earth. • Understand patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.

<table>
<tr><td>

- Why do icebergs flip?

</td><td></td></tr>
<tr><td>Demonstration of Learning:</td><td>Pacing for Unit</td></tr>
<tr><td>

- Culminating Task: Travel Journal
  - Each student will create and share a travel journal from one day on your trek from drop off point to McMurdo Station, highlighting at least one scientific phenomena or situation that was encountered, investigated, and figured out (24 hour sunlight, obtaining fresh water, glacier formation and movement, icebergs flipping) This scientific highlight must be complete in its explanation and use at least 8 vocabulary terms correctly.
  - You should include labeled sketches as they apply.
  - Rubric

</td><td>6 weeks</td></tr>
<tr><td>Family Overview (link below)</td><td>Integration of Technology:</td></tr>
<tr><td>Family Overview - Unit 3</td><td>Intentionally aligned use of digital tools and resources to support acquisition of content, researching, organizing and communicating learning

- LIVE Cam from McMurdo Station
- Google Earth
- PHET Simulation

</td></tr>
<tr><td>Unit-specific Vocabulary:</td><td>Aligned Unit Materials, Resources, and Technology (beyond core resources):</td></tr>
</table>

Support	Argument	Evidence
Data	Gravity	Earth's center
Change	Iceberg	Cause/Effect Relationship
Graphical Display	Bar Graph	Pictorial Graph
Pie Chart	Patterns	Orbit
Revolution	Axis	Rotation
North/South Pole	Antarctica	Analyze
Systems	Geosphere	Molten Rock
Sediment	Hydrosphere	Atmosphere
Biosphere	Processes	Ecosystem
Organism	Shapes/Landforms	Climate
Components	Interactions	Glacier
Compress	Ice Crystals	Calve
Bergie Seltzer		

- Icebergs and Glaciers by Seymour Simon
- Colin O'Brady Reading
- Day & Night in Hemispheres video
- Colin O'Brady Interview video
- Day & Night in Antarctica Article
- Classification of Bodies of Water Article
- Groundwater Reading
- Water Distribution of Earth Video
- NASA Show me the Water video
- Saline Water: Desalination Article
- Water Desalination Video
- NASA Glacier for kids
- A Glacier's Life Cycle
- Crash Course Spheres Part 1
- Crash Course Spheres Part 2
- Glaciers for Kids video
- Iceberg Flip Video
- Crash Course Gravity (Optional)

Opportunities for Interdisciplinary Connections:

Literacy Connections:

- Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question.
- Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably
- Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.
- Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.

Mathematical Connections:

- Reason abstractly and quantitatively.
- Recognize volume as an attribute of solid figures and understand concepts of

Anticipated misconceptions:

- Sunlight does not warm the land
- The seasons in Antarctica are the same as they are in the northern hemisphere
- Freshwater is plentiful
- The equator always has the most hours of daylight; the north and south poles always have the fewest hours of daylight
- The number of hours of daylight on a given day is the same everywhere on earth
- All water is drinkable
- You can drink salt water to survive
- Freshwater is more prevalent than saltwater
- Wind and water cannot wear away the solid rock of a mountain
- Landforms look similar today as they did many millions of years ago. For example, a river on earth today hasn't changed over time
- Landforms can change in size, but not by the motion of wind and water
- A passive (stationary) object cannot exert a force

volume measurement. • Represent real world and mathematical problems by graphing points in the first quadrant of the • coordinate plane, and interpret coordinate values of points in the context of the situation.	
Connections to Prior Units:	**Connections to Future Units:**
Connections to: • Grade 1 Unit 1: Shadows on the Playground • Grade 3 Unit 3: The Case of the Missing Monarchs • Grade 4 Unit 1: National Parks	Connections to: • Grade 6 Unit 2: Destructive Weather
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation 3.2	• Highlight or emphasize key elements in text, graphics, diagrams, formulas
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
4-5.7 adapt language choices to purpose, task, and audience when speaking and writing.	I can gather information from multiple resources to demonstrate my learning of situations encountered while surviving Antarctica.

Learning Sequence	Learning Target & Success Criteria	Resources
1	I can locate Antarctica on a map and identify possible challenges of exploration in Antarctica ☐ I located antarctica on a map ☐ I identified at least 3 challenges of exploring Antarctica I can review the provided survival supplies and explore the purpose of unfamiliar items. ☐ I reviewed survival supply and the need for these items I can identify additional survival items with reasoning ☐ I created a list of additional survival items and why they are needed in this environment I can generate questions on how to survive the trek from emergency drop off point to McMurdo Station ☐ I created a set of questions on how to survive in Antarctica in challenging situations	• Welcome to Antarctica Slide Deck • Quadrant Slide • Google Earth • Colin O'Brady Reading • Student Response Document
2	I can describe patterns of daylight hours in CT and Antarctica ☐ I described the patterns of daylight in Connecticut and	• Agree/Disagree Line

	Antarctica I can graph and compare the hours of daylight in CT and Antarctica ☐ I graphed the hours of daylight in Connecticut and Antarctica ☐ I identified the differences in the hours of daylight in Connecticut and Antarctica I can use the data to develop an explanation for the extended daylight hours during the Antarctic summer ☐ I explained why Antarctica has expended sunlight during Antarctica summer I can describe the pros and cons of how the extended daylight hours impact the Antarctic trek ☐ I explained the pros and cons of the extended daylight ☐ I explained how extended daylight hours impact the Antarctic trek	• Engage Slideshow • Time & Date Website • Student Graphing Activity • Day & Night in Hemispheres video • Colin O'Brady Interview video • Day & Night in Antarctica Article
3	I can make observations on the water supply around the world ☐ I made at least 3 observation about the world's water supply I can identify freshwater and saltwater reservoirs ☐ I identified freshwater and saltwater reservoirs I can make predictions on the percentages of water in reservoirs ☐ I made a prediction on the percentage of water in reservoirs I can use nonfiction text/media resources to record and compare water distribution data to predictions ☐ I used nonfiction text/media resources to gather information about water distribution ☐ I compared my water prediction to to actual water distribution I can represent fresh and salt water distribution on earth with a graph or a model ☐ I graphed or modeled the water distribution on earth I can explain how Bristol gets it water supply ☐ I explained how Bristol gets its water supply	• Earth's Water Student slide deck • Classification of Bodies of Water Article • World Water Distribution Activity • CER Template ○ Short Template • Water Fact Sheet • Groundwater Reading • Water Distribution of Earth Video • NASA Show me the Water video • Make a Prediction Classwide Google Doc
4	I can identify fresh and saltwater resources in Antarctica ☐ I identified fresh and saltwater resources in Antarctica I can generate ideas on how to obtain potable water ☐ I explained what is potable water ☐ I generated ideas on how to obtain potable water I can use knowledge of states of matter and the water cycle to set up an experimental desalination center ☐ I defined the three states of matter ☐ I defined the water cycle ☐ I worked with a group to set up distillation stations in multiple	• Saline Water: Desalination Article • Desalination Investigation • Water Desalination Video

	settings I can provide evidence that the desalination sets up in the classroom made fresh water ☐ I provided evidence that the distillation station creates fresh water I can describe desalination methods used around the world ☐ I described different desalination methods used around the world I can identify and explain the preferable method to obtain fresh water in Antarctica given limited supplies ☐ I choose the best method to obtain fresh water in Antarctica given limited supplies	
5	I can make observations and ask questions on glaciers ☐ I made observations about glaciers ☐ I created at least 3 questions related to glaciers I can explain how glaciers form and move ☐ I explained how glaciers formed and move I can investigate how light and temperature impact glacier melt with station activity ☐ I completed an investigation on the impact of light and temperature effect a glacier melt ☐ I was able to support what was the impact of light and temperature effect a glacier melt I can analyze glacier melt data ☐ I analyzed glacier melt date I can develop an explanatory model of a glacier ☐ I created a model of a glacier I can iIdentify and describe the four systems (hydrosphere, atmosphere, geosphere, and biosphere) that scientists use to represent Earth ☐ I explained what is a sphere ☐ I identified the four systems that scientists use to represent the earth I can provide evidence for interactions between the spheres ☐ I showed evidence on how the spheres interact with each other	• Engage Slide Deck • 3-2-1 Template • NASA Glacier for kids • Glacier Investigation Student Handout • 3 stay 1 stray protocol • A Glacier's Life Cycle • Spheres Handout] • Glaciers for Kids video
6	I can make observations and ask questions on iceberg characteristics and behaviors ☐ I made observations about icebergs ☐ I asked multiple questions about the characteristics and	• I Notice, I Wonder • Iceberg Resources for Kids • Iceberg Student

	behaviors of icebergs I can investigate iceberg floating and flipping behavior ☐ I investigated why icebergs float and flip I can explain why an iceberg flips ☐ I explained why icebergs flip I can provide evidence to which sphere the iceberg (hydrosphere) most closely interacts with ☐ I proved with evidence which sphere icebergs most closely interact with ☐ I can sketch and summarize the “life” of an iceberg ☐ I created a sketch of the “life” of an iceberg ☐ I wrote a brief summary on the “life” of an iceberg I can generate and share a travel log from Expedition Antarctica(culminating task) ☐ I created a travel log about our exploration of Antarctica. My journal entryl included information about: a. 24 hour sunlight b. obtaining fresh water c. glacier formation and movement d. icebergs flipping	Handout • Iceberg Flip Video • LS 6 CER