

# Mad-Made Habitat on Earth: Protecting Life in the Cryosphere

*Plant and Animal Needs*

*Grade: Kindergarten*

*Ms. Martinez, Alamosa, CO*

## **BIG IDEAS**

This lesson comes after spending 4 weeks learning about animal habitats on Earth and following 2 weeks learning about Mar's environment and comparing it to Earth's habitats, and identifying what plants and animals need to survive (K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive). Students will use their knowledge of the relationship between animals/plants and where they live to design a solution for making the cryosphere on Earth a habitable planet for plants and animals that are vulnerable/endangered due to the changes in the cryosphere as a result of climate change.

## EDUCATION STANDARDS

### NGSS Performance Expectation(s)

#### **K-ESS3 Earth and Human Activity**

**K-ESS3-1.** Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live. *[Clarification Statement: Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; and, grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.]*

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts:
<p><b>Asking Questions and Defining Problems</b></p> <p>Asking questions and defining problems in grades K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested.</p> <ul style="list-style-type: none"> <li>Ask questions based on observations to find more information about the designed world. (K-ESS3-2)</li> </ul> <p><b>Developing and Using Models</b> Modeling in K–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, storyboard) that represent concrete events or design solutions.</p> <ul style="list-style-type: none"> <li>Use a model to represent relationships in the natural world. (K-ESS3-1)</li> </ul> <p><b>Obtaining, Evaluating, and Communicating Information</b></p> <p>Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information.</p> <ul style="list-style-type: none"> <li>Read grade-appropriate texts and/or use media to obtain scientific information to describe patterns in the natural world. (K-ESS3-2)</li> <li>Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas. (K-ESS3-3)</li> </ul>	<p><b>ESS3.A: Natural Resources</b></p> <ul style="list-style-type: none"> <li>Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. (K-ESS3-1)</li> </ul> <p><b>ETS1.A: Defining and Delimiting an Engineering Problem</b></p> <ul style="list-style-type: none"> <li>Asking questions, making observations, and gathering information are helpful in thinking about problems. (secondary to K-ESS3-2)</li> </ul> <p><b>ETS1.B: Developing Possible Solutions</b></p> <ul style="list-style-type: none"> <li>Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem’s solutions to other people. (secondary to K-ESS3-3)</li> </ul>	<p><b>Systems and System Models</b></p> <ul style="list-style-type: none"> <li>Systems in the natural and designed world have parts that work together. (K-ESS3-1)</li> </ul>

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**Common Core State Standards:**

**Colorado State Standards link:**

<https://www.cde.state.co.us/apps/standards/7,2,17/4,2,11/6,2,19>

**Math: Standard 4**

**K.G.A. Geometry: Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).**

Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above*, *below*, *beside*, *in front of*, *behind*, and *next to*. (CCSS: K.G.A.1)

Correctly name shapes regardless of their orientations or overall size. (CCSS: K.G.A.2)

Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). (CCSS: K.G.A.3)

**K.G.B. Geometry: Analyze, compare, create, and compose shapes.**

Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes. (CCSS: K.G.B.5)

Compose simple shapes to form larger shapes. *For example, "Can you join these two triangles with full sides touching to make a rectangle?"* (CCSS: K.G.B.6)

**ELA: Reading, Writing and Communicating**

**Standard 3: Writing and Composition**

- a. Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic. (CCSS: W.K.2)
- b. With guidance and support from adults, respond to questions and suggestions from peers and add details to strengthen writing as needed. (CCSS: W.K.5)
- c. With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers. (CCSS: W.K.6)

## MEASURABLE STUDENT LEARNING OBJECTIVES

Students will be able to demonstrate their knowledge of the relationships between plants and animals and the places they live by designing a three-dimensional, man-made habitat to support vulnerable/endangered life on Earth that lives in the cryosphere.

## STEM INTEGRATION

Science, Engineering, Math, Literacy

Students will use their knowledge of what plants/animals need to survive in their habitats on Earth and apply it to designing a habitat that would support vulnerable/endangered species in the cryosphere. Students will design and build a 3-dimensional habitat that will include a shelter. The habitat will be a diorama consisting of materials that are 2D and 3D shapes. Students will identify shapes and build their dioramas by composing larger shapes from simple shapes. The literacy component will consist of students labeling their habitat with prompts and support, using a combination of drawing, dictating, and writing an explanatory text that includes a topic and some information about the topic.

## NATURE OF STEM

This lesson addresses the “nature of” science, technology, engineering and math by integrating each of them simultaneously within the lesson. The NOS, NOT, NOE, and NOM each produce specific types of knowledge, but they also overlap and can apply each other's knowledge with each discipline. The majority of the NOS piece takes place during 4 weeks of learning about habitats, it is still being used in this lesson as the primary content. Students will use their knowledge about habitats to design a habitat in Earth's cryosphere that will support endangered species. NOE and NOM are overlapped with NOS to be able to design a solution to the lesson's problem of creating a habitat on Earth. In order to successfully engineer a 3D habitat, knowledge of 2D and 3D shapes as well as composing larger shapes is needed. NOT is used as a resource

for data, which is used to learn about the cryosphere.

## **MATERIALS NEEDED**

Videos/Images of Earth

Paper

Pencils, crayons, markers

Cardboard box (shoebox)

Construction paper

Glue

Scissors

Clay

Cotton

2d Shapes and Foam 3D forms

Toothpicks

Tape

rocks/pebbles

Paint

Post It notes

Anchor Charts: cryosphere, animal adaptations, habitats, vocabulary, sentence frames for informational writing

Animal images

Chart Paper

Rubrics

## ENGAGING CONTEXT/PHENOMENON

Video: [Ice Mass Changes-Antartica](#)

[Ica Mass Changes-Arctic](#)

[polar bear image](#)

The engaging phenomena for this lesson will be a video from NASA that does not explain what is happening. It includes a timelapse video and still images of Antarctica and the Arctic. Next, students will be shown images of animal life (polar bears) from past and current times.

This video is intended to get students thinking and questioning. Students will not be told that the video is about Ice Mass, the cryosphere, or climate change. They will need to make observations and, using prior knowledge about habitats, try to guess what type of habitat it is (desert, ocean, forest, etc.). Students will then need to consider animal needs and what is happening to polar bears' habitat. Students will need to explain their reasoning.

## DATA INTEGRATION

Data for this lesson will include information from NASA, including images and timelapse footage of the cryosphere.

\*Students will not be collecting data in this lesson, however, they will be analyzing data from the cryosphere to assist them in creating a habitat that will help vulnerable populations in the cryosphere.

## TEACHER BACKGROUND KNOWLEDGE

The teacher will need to know what the environment is like in the cryosphere in order to lead a discussion on climate change and its effects on animal and plant populations. Videos and visuals will be utilized to create phenomena.

## DIFFERENTIATION OF INSTRUCTION

**To accommodate for English Language and SPED learners, use the following differentiation strategies:**

Use of visuals and non-linguistic representations of key concepts and vocabulary will be used and referenced throughout the lesson. Students will be introduced to key vocabulary at the beginning of the lesson, picture sorts or Frayer Models for vocabulary will be utilized. Use of small groups and one-on-one support will be incorporated during the planning and building stage of the 3D habitat. Sentence frames and word banks (with pictures) will be made available for the ELA piece.

**To accommodate Gifted Learners, the following differentiation strategies could be used:**

Allow students to research animal adaptations and create a version of the polar bear that has adapted to its new environment. Students can research other animal species that have adapted over time to survive in their environment and compare and contrast those animals to polar bears. Students can present their project to other classes, parents and/or other school staff using technology (Google slides).

## REAL-WORLD CONNECTIONS FOR STUDENTS

Animals are always an exciting topic for young learners. Learning about animals and their habitats makes students aware of their world. Real-world connections come from being able to identify the effects of climate change on our world and how it impacts plant and animal life. Our previous learning shows that plants and animals need certain things to survive (food, water, air, shelter). When the environment changes, it is evident that plants and animals must adapt to the changes for their species to survive.

Students will use their background knowledge of habitats to design man-made shelters for vulnerable/endangered species in the cryosphere. Students will be able to connect this lesson to their everyday lives by comparing how the needs of vulnerable/endangered species change due to climate change's effects on their environment.

## INTEGRATION POSSIBLE MISCONCEPTIONS

Students may need clarification about climate change on the planet. They may think that animals can survive no matter the conditions. Videos, images, and texts will be included to help students better understand climate change and the environment.

## ASSESSMENT

Using both formative and summative assessments will guide my instruction throughout the lesson. This lesson will build off of prior lessons on plant and animal needs. Through student discourse, teacher will be able to look for indicators of critical thinking. For example, the ability to connect concepts and provide evidence to support their claims. Students will need to take their knowledge of animal needs and apply those needs to their changing environment. By observing and listening to student discourse, teacher can gain insight into which students are grasping content and who is struggling. It gives an opportunity for a review of content as a whole. The attached rubrics are included for the summative assessment of the content.

## LESSON PROCEDURE

5E	Details of 5E Lesson Implementation
<b>Day 1:</b> <b>Engage</b>	<b>Procedure: Prior Knowledge and Engaging Phenomena</b> <b>Prior Knowledge</b> Students will discuss with a partner the following questions: <ul style="list-style-type: none"><li>• What is a habitat?</li><li>• What do plants and animals need to survive?</li></ul> <p>*Allow students think time (30 seconds). Students should be able to identify which partner they are. For example Partner A/Partner B. Instruct partner A to share with B, and vice versa.</p> <ul style="list-style-type: none"><li>• Whole group, ask the class “what is a habitat?” Due to prior knowledge, the whole group should be able to define a habitat along with</li></ul>

non-linguistic representation. (A habitat is a place where plants and animals live and grow)

\*Ask the second question, again allowing for think time and making sure each partner gets a chance to share.

- Whole group, ask the class “what do plants and animals need to survive?” Due to prior knowledge, the whole group should be able to define a habitat along with non-linguistic representation. (Plants and animals need food, water, air and shelter to survive in their habitat)

### **Engaging Phenomena**

Video:

[Ice Mass Changes-Antartica](#)

[Ica Mass Changes-Arctic](#)

[polar bear image](#)

Teacher will explain to the class that they will need to make observations of the video and use their prior learning about habitats to identify where the video is taking place and possibly what kind of habitat it is.

When the video is over:

- Give students time to collect their thoughts before having them illustrate and label their ideas on a PostIt note.
- Students will share with their partner what they illustrated and think the video was about. \*use the Partner A/B protocol used previously
- Teacher will bring the whole group back together and ask for students to share their thoughts on the place and habitat.
  - Teacher can collect PostIt notes on a note catcher.
- Teacher will lead discussion on what the video was of: Arctic and Antarctic
  - Teacher will use their background knowledge of habitats and what plants and animals need to survive, to launch the lessons problem.

- Teacher explains that students will use their knowledge about plants/animals and their habitats to design a man-made habitat in the cryosphere.
- Students will get a mini-lesson on the cryosphere and learn which habitats are a part of the cryosphere.
  - Explain that polar bears live in the cryosphere, which is the frozen part of the Earth's surface. This includes areas like the Arctic Ocean, glaciers, and sea ice.
  - Ask students what they think the polar bears need to survive in the cryosphere. Encourage them to share their ideas.

**Modifications**

Anchor charts of habitats in the cryosphere will be displayed for students to reference.

Sentence frames will be posted and modeled before students share with their partners.

- A habitat is\_\_\_\_\_.
- Plants and animals need\_\_\_\_\_.
- The habitat is\_\_\_\_\_because\_\_\_\_\_.

**Standards Addressed**

Science: 3.2.a

Literacy: 1.1a,b,c

**Formative/Summative Assessments**

Academic discourse through partner talk

Students illustrations and labeling.

**Resources:**

[Ice Mass Changes-Antartica](#)

	<p><a href="#">Ica Mass Changes-Arctic</a></p> <p><a href="#">polar bear image</a></p> <p>Sticky notes, pencils, note catcher, existing habitat anchor charts, cryosphere anchor chart</p>
<p><b>Explore</b></p> <p><b>Day 2</b></p>	<p><b>Procedure:</b></p> <p><b>Identify the cryosphere and the needs of polar bears and how their habitat provides for their survival.</b></p> <p><b>Illustrate and label the needs of polar bears:</b></p> <ul style="list-style-type: none"> <li>● Provide students with additional information about the cryosphere and the needs of polar bears, such as: <ul style="list-style-type: none"> <li>○ The cryosphere is the frozen part of the Earth's surface, including the Arctic Ocean, glaciers, and sea ice.</li> <li>○ Polar bears rely on the cryosphere to hunt, find food, and raise their young.</li> <li>○ They need sea ice to hunt seals, their primary food source.</li> <li>○ Polar bears also need a cold, snowy environment to build their dens and raise their cubs.</li> </ul> </li> <li>● Have students work in small groups to create a web of polar bear needs. They will illustrate and label.</li> </ul> <p>Within those groups, (using the Partner Protocol) the teacher will facilitate questioning: <u>How do polar bears survive in the cryosphere? What do they need to survive? How does the habitat in the cryosphere provide those needs?</u></p> <p><b>Modifications</b></p> <p>Word banks for labeling web</p> <p><b>Standards Addressed</b></p> <p>Science 3.2.a,</p>

	<p>Literacy Standard 2.2.a</p> <p><b>Formative/Summative Assessments</b></p> <p>Academic discourse</p> <p>Illustration and labeling of polar bear needs</p> <p><b>Resources</b></p> <p>Habitat and cryosphere anchor charts</p> <p>Chart paper</p> <p>Graphic organizer (web)</p> <p>Pencils</p>
<p><b>Explain</b></p> <p><b>Day 3</b></p>	<p><b>Procedure: Identify challenges of designing a habitat for polar bears</b></p> <p>This part of the lesson involves observing and learning about the cryosphere in order to design a habitat that can support life in the Arctic. Teacher will show informational videos from NASA and lead discussions about how the cryosphere is shrinking and how habitats affect the lives of animals that live there.</p> <p>Cryosphere will be analyzed and compared to past years using video resources.</p> <p>Video: <a href="#">How do we know the Climate is Changing?</a></p> <p>Tying the video back to the needs of polar bears:</p> <ul style="list-style-type: none"> <li>● Invite students to share what they have learned about the needs of polar bears and how the cryosphere provides for those needs.</li> <li>● Explain that climate change is causing the cryosphere to shrink, which is making it harder for polar bears to find food and survive.</li> <li>● Discuss the impact of climate change on the polar bear's habitat and the animals that live in the cryosphere.</li> </ul>

Allow students time to explore Space Place [Weather and Climate](#). Afterwards, gather students together in a whole group to create an image that compares and contrasts the changing cryosphere.

Ask the following questions:

\*You can reference videos as well as images.

**Questions for the whole group:**

\*Use the partner protocol,

- How has the cryosphere changed? (illustrate a before and after image)
- Has the habitat of the polar bear changed? How?

\*Remember to illustrate to help learners quickly identify differences. You can label the drawings.

Explain to students that we will now look closer at the changing cryosphere and its challenges for sustaining life. We will create a T-Chart with “challenges/problems” and possible “solutions.” Students will have a white board and marker to illustrate and label their answers before sharing with their partner.

**Questions for whole group (referencing our illustrations of the cryosphere):**

1. What does the habitat of the polar bear need in order to sustain life? (recalling what plants and animals need to survive)
2. What are some ways we can solve that problem?
  - Ask question 1, allowing students think time and enough time to illustrate and label their “challenge/problem” \*use the partner protocol for discussion. Teacher will then record students' answers on the “challenge/problem” side of the T-chart.
  - Repeat using question 2, going through all of the challenges and recording on the T-chart.

**Modifications**

Teacher will join partners with SPED/EL students to assist in facilitating discussion.

Sentence frames for partner discussions and whole group participation:

- Polar bears need \_\_\_\_\_ to survive in the \_\_\_\_\_.
- The cryosphere is shrinking, but still has \_\_\_\_\_.
- Both have/can \_\_\_\_\_.
- A problem in the cryosphere is \_\_\_\_\_.
- A solution can be \_\_\_\_\_.
- We can solve that by \_\_\_\_\_.

Vocabulary and images are posted for reference.

### **Standards Addressed**

Science: 3.2.a, K-ESS3-1, K-2-ETS1-1

Literacy: 1.1a,b,c, 1.2.b,c

### **Formative/Summative Assessments**

- Academic discourse through partner talk
- Students illustrations and labeling.

### **Resources**

Video: [How do we know the Climate is Changing?](#)

### **Weather and Climate**

White boards and dry erase markers

Illustrations of the cryosphere and T-chart (Problem/Solution)

<p><b>Elaborate</b></p> <p><b>Day 4</b></p>	<p><b>Procedure: Analyze how problems can be solved with the use of technology.</b></p> <p>Teacher and students will recall their past knowledge, and our previous lesson on building a habitat for Mars, of how scientists have used technology and research to try and make habitats in space.</p> <p>Students will apply that knowledge to create a habitat for polar bears in the changing cryosphere.</p> <p><b>Whole Group Questioning:</b></p> <ul style="list-style-type: none"> <li>• Can any of the scientists' solutions help us to design our man-made habitat in the cryosphere?</li> <li>• Which ones will help us design a habitat to sustain life in the changing cryosphere for polar bears?</li> </ul> <p><b>Modifications</b></p> <p>Partner with students who need additional support for discussion.</p> <p><b>Standards Addressed</b></p> <p>Science 3.2.a, K-2-ETS1-1</p> <p>Literacy Standard 2.2.a</p> <p><b>Formative/Summative Assessments</b></p> <p>Academic discourse</p> <p><b>Resources</b></p> <p>T-Chart, chart paper,</p>
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<p><b>Evaluate</b></p> <p><b>Day 5</b></p> <p><b>(3D model)</b></p> <p><b>Day 6</b></p> <p><b>(writing)</b></p>	<p><b>Procedure: Design 3D Man-Made Habitat for Polar Bears in the Cryosphere</b></p> <p>Students will work in groups of 4 to complete the task.</p> <p>Students will recall prior knowledge of habitats and what plants and animals need to survive to create their 3D Habitat.</p> <p><b>Questioning for small groups:</b> *Follow the partner protocol, partner will share within their small group, then share out whole group</p> <p><b>Questions:</b></p> <ul style="list-style-type: none"> <li>● How is the cryosphere different today than from the past? What has changed?</li> <li>● Is anything missing from the environment that polar bears need to survive?</li> <li>● What would need to be added to the cryosphere in order for polar bears to survive?</li> <li>● What technology have humans used already would help support life in today's cryosphere?</li> </ul> <p>Teacher references the T-Chart made previously and discusses challenges and possible solutions for designing a man-made habitat that will sustain life on Mars (from previous lesson).</p> <p>Teacher will model creating (drawing) a design for their 3D model that includes: shelter, water source, food source, and air source.</p> <p>Teacher will model using 2D and 3D shapes, stating the name and any defining attributes, as well as the modeling of composing larger shapes using small shapes. <b>Ex:</b> <u>"To make the walls of my shelter, I will use 2 square tiles to compose a rectangle to make my wall longer."</u> <u>"I will use a cylinder foam for the oxygen tank."</u></p> <p>(Teacher will model completing Resource and Shapes Checklist)</p> <p>After teacher models design creation and building, students will then work collaboratively with their groups to create their design for their man-made 3D habitat for polar bears in the cryosphere. Students will be given a self-check</p>
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list of what needs to be included in their design before building with the given materials. (Found in "Printed Materials" at end of lesson)

Resource	
Food	
Water	
Air	

Shape	2D or 3D	Amount used

**Once students have collaboratively built their man-made habitat, complete with labels, they will begin the writing process of describing their habitat and what it provides for polar bears in their writing journals.**

**Modifications**

Teacher will join partners with SPED/ELL students to assist in facilitating discussion.

Sentence frames for partner discussions and whole group participation:

- The cryosphere is changing because\_\_\_\_\_.
- The cryosphere has less\_\_\_\_\_.
- A problem for polar bears in the cryosphere is \_\_\_\_\_.
- A solution can be \_\_\_\_\_.
- We can solve that by\_\_\_\_\_.
- My habitat is composed of \_\_\_\_\_ (shape).

Teacher will model creating a design that students can reference for their own.

Teacher will assist in the building of habitat.

Images of 2D and 3D shapes for reference.

Teacher will use grouping strategies for placing students in their group.

**Standards Addressed**

Science: K-ESS3-1

Literacy: 3.2.a

Math:

CCSS: K.G.A.1, K.G.A.2, K.G.A.3, K.G.B.5, K.G.B.6

**Formative/Summative Assessments**

Academic discourse

Illustrated model design with labeling

3D Model with explanatory writing and/or verbal description (prompt and support)

**Resources**

Paper

Pencils, crayons, markers

Cardboard box (shoebox)

Construction paper

cotton

Glue

Scissors

Clay

Foam 3D forms

	Toothpicks
	Tape
	rocks/pebbles
	Post It notes
	Anchor Charts: habitats, vocabulary
	Sentence frames for informational writing
	Student Self-Check Rubric
	Teacher Rubric

## Rubrics

# Mad-Made Habitat on Earth: Protecting Life in the Cryosphere Design/Structure

Criteria	4	3	2	1	0
<b>Knowledge of Relationship Between Animals/Plants and Where They Live</b>	Student demonstrates a thorough understanding of the relationship between animals/plants and their habitats, and effectively applies this knowledge to design a man-made habitat that can sustain life for plants and animals.	Student demonstrates a good understanding of the relationship between animals/plants and their habitats, and applies this knowledge to design a man-made habitat that can sustain life for plants and animals, with minor inaccuracies or omissions.	Student demonstrates a basic understanding of the relationship between animals/plants and their habitats, and attempts to apply this knowledge to design a man-made habitat that can sustain life for plants and animals, but with significant inaccuracies or omissions.	Student demonstrates limited understanding of the relationship between animals/plants and their habitats, and makes minimal attempts to apply this knowledge to design a man-made habitat that can sustain life for plants and animals.	Student demonstrates no understanding of the relationship between animals/plants and their habitats, and does not attempt to apply this knowledge to design a man-made habitat that can sustain life for plants and animals.
<b>Solutions for Food, Water and Air Source</b>	Student designs a comprehensive and innovative solution for providing ALL 3 Sources for food, water and air in the man-made habitat, considering the specific needs of plants and animals.	Student designs a well-thought-out solution for providing food, water and air, but only includes 2 of the 3 sources in the man-made habitat, considering the needs of plants and animals, with some minor inaccuracies or omissions.	Student designs a basic solution for providing food, water and air, but only includes 1 source in the man-made habitat, but with significant inaccuracies or omissions in addressing the needs of plants and animals.	Student provides a limited solution for providing food in the man-made habitat, with minimal consideration of the needs of plants and animals.	Student does not provide a solution for providing food in the man-made habitat.

<p><b>Application of 2D and 3D Shapes</b></p>	<p>Student accurately identifies and effectively applies a variety of 2D and 3D shapes to compose larger shapes for the structure of the man-made habitat.</p>	<p>Student identifies and applies a variety of 2D and 3D shapes to compose larger shapes for the structure of the man-made habitat, with minor inaccuracies or omissions.</p>	<p>Student identifies and attempts to apply some 2D and 3D shapes to compose larger shapes for the structure of the man-made habitat, but with significant inaccuracies or omissions.</p>	<p>Student provides limited identification and application of 2D and 3D shapes to compose larger shapes for the structure of the man-made habitat.</p>	<p>Student does not identify or apply any 2D and 3D shapes to compose larger shapes for the structure of the man-made habitat.</p>
<p><b>Notes/ Comments</b></p>					

# Mad-Made Habitat on Earth: Protecting Life in the Cryosphere

## Writing Component

Criteria	4	3	2	1
<b>Topic and Information</b>	The student includes a clear topic and provides multiple details about the topic using a combination of drawing and writing.	The student includes a topic and provides some details about the topic using a combination of drawing and writing.	The student includes a topic but provides limited details about the topic using a combination of drawing and writing.	The student does not include a clear topic and provides minimal or no details about the topic using a combination of drawing and writing.
<b>Notes/ Comments</b>				

## Resource and Shapes Checklist (Evaluate)

Resource:	I have a source for this ✓
Food	
Water	
Air	
Shelter	

<b>Shape</b> (draw)	<b>2D or 3D</b>	<b>Amount</b> (tally marks)

## REFERENCES

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