

Lions, Tigers & Monsters, Oh My!

Week 4: Grades K-2

Day	Topics	Related Standards
1	A Monsterous Task!	Develop and use models about how living things use resources to grow and survive; design and evaluate habitats for organisms using earth materials.
2	A Place to Call Home	
3	It's Dinner Time!	Obtain, analyze, and communicate evidence that organisms need a source of energy, air, water, and certain temperature conditions to survive.
4	Changing Plans!	Observe, ask questions, and explain how specialized structures found on a variety of plants and animals (including humans) help them sense and respond to their environment.
5	Ladies & Gentlemen, I Present to You...	

Lions, Tigers & Monsters, Oh My!

Day 1: A Monsterous Task!

Teacher/Parent Background:

Lions, tigers and monsters? Yes, you read that correctly; monsters! By creating a unique monster, students will apply their understanding of the needs of living things and their roles in their environments. All animals and plants (including monsters!) body parts that help them survive, grow and behave in their environments.

Overview:

In this activity, students will begin to imagine their unique monster by brainstorming what the monster would look like.

Related Standards:

- Develop and use models about how living things use resources to grow and survive; design and evaluate habitats for organisms using earth materials.

Key Terms:

- Organism- A single living thing
- Basic Needs- Things that a living thing needs to survive
- Survive- Stay alive

Materials List:

- Pen/pencil
- Possible visual representation resources:
 - Colored pencils/crayons/markers
 - Internet access for images/pictures
- Internet access - optional for *Extensions*
- *Student Resources - Pages 5-7*
 - *Monster Project Details*
 - *Animal Match-Up Cards*
 - *My Monster's Portrait - Portfolio Page 1*

Activity Description:

- Introduce students to the project goal:
 - As we have learned, animals and plants around us need certain things to help them survive and grow in their environments! All animals and plants have body parts that help them carry out certain jobs to survive.
 - For example, dogs have strong teeth to help them eat hard things and plants have roots that help them soak up water.
 - Or, another example might be that we have lungs that help us breathe on land whereas fish have gills that help them breathe in water.
 - We are soon going to engage in a week-long project to apply what we know about how organisms survive in their environments by creating a brand-new, very unique animal...a monster!
 - Review the *Monster Project Details* with students.
 - Encourage students to ask clarifying questions about the project details.
 - Inform students that the “report” will be in the form of a portfolio that they work towards each day; at the end, each of their “pages” will build the “report”.
 - Inform students that they will have time on Day 5 to build a 3D model (physical representation) of their monster, as they may make changes to their monster throughout the week.
- Today, you are going to brainstorm the structures of your monster by answering the following questions:
 - What is your monster? What is it's name?
 - What does it look like?
 - How does it move? How does it eat?
- To help you get started, we are going to explore examples of different animal body parts!
 - Engage students in the following activity:
 - Using the *Animal Match-Up Cards*, pair-up the body parts that best match the descriptions of how the body parts help the animals.
 - Duck feet: My two webbed feet help me swim and live in water-based environments.
 - Owl wings: My two wings help me move from place to place in search of shelter and food.
 - Cat paw/claws: My four paws and claws help me run and climb to escape predators and eat my food.
 - Eagle beak: My sharp, hooked beak helps me catch and eat my prey with ease, sometimes in the air!
 - Dog teeth: My sharp teeth help me protect myself when in danger and eat my food.

- Grasshopper mouth: My tong-like mouth helps me crunch and chew food, like leaves.
- After looking through a few examples of animal body parts and their jobs, let's revisit your monster! Remember, today you are brainstorming the what your monster will look like:
 - What is your monster? What is it's name?
 - What does it look like? What are its body parts?
 - How does it move? How does it eat?
 - Assist and monitor as they begin brainstorming by guiding them through the *My Monster's Portrait - Portfolio Page 1*.
 - Encourage students to use colored pencils/crayons/markers to help them illustrate their monster.

Closure:

- After the activity has concluded, engage in a discussion with students:
 - How would you best describe your monster?
 - What body parts does your monster have that help it survive?
 - What else might we need to know about your monster, as the project continues?

Extensions:

Continue the Project!

- Encourage students to research ([example source 1](#) & [example source 2](#)) animal behaviorists or zoologists to learn more about what they do. For example, ask students to research:
 - What does an animal behaviorist/zoologist do?
 - What kind of training do they need?
 - What career opportunities do they have?

Student Resources

Monster Project Details

Dear Student,

As a local animal behaviorist, my team and I are interested in working with you to learn more about your newly discovered monster! My sources have informed me that you are currently in the process of identifying and observing this new creature. You have been tasked with presenting your findings to my team as soon as possible, so that we may study this monster as well. Please closely follow all the project details outlined below:

- 1. Your project report must include a description and visual representation of the following:**
 - a. The main body parts of the monster.
 - b. Where the monster lives
 - c. How your monster eats, what it eats and what eats it.
 - d. How your monster responds to changes in it's environment.

- 2. You may use the following resources to create visual representations:**
 - a. Drawings
 - b. Pictures/videos
 - c. 3D models

- 3. Your project report must include the following observation-based details:**
 - a. The place to see the monster.
 - b. The best time of day/night to see the monster.

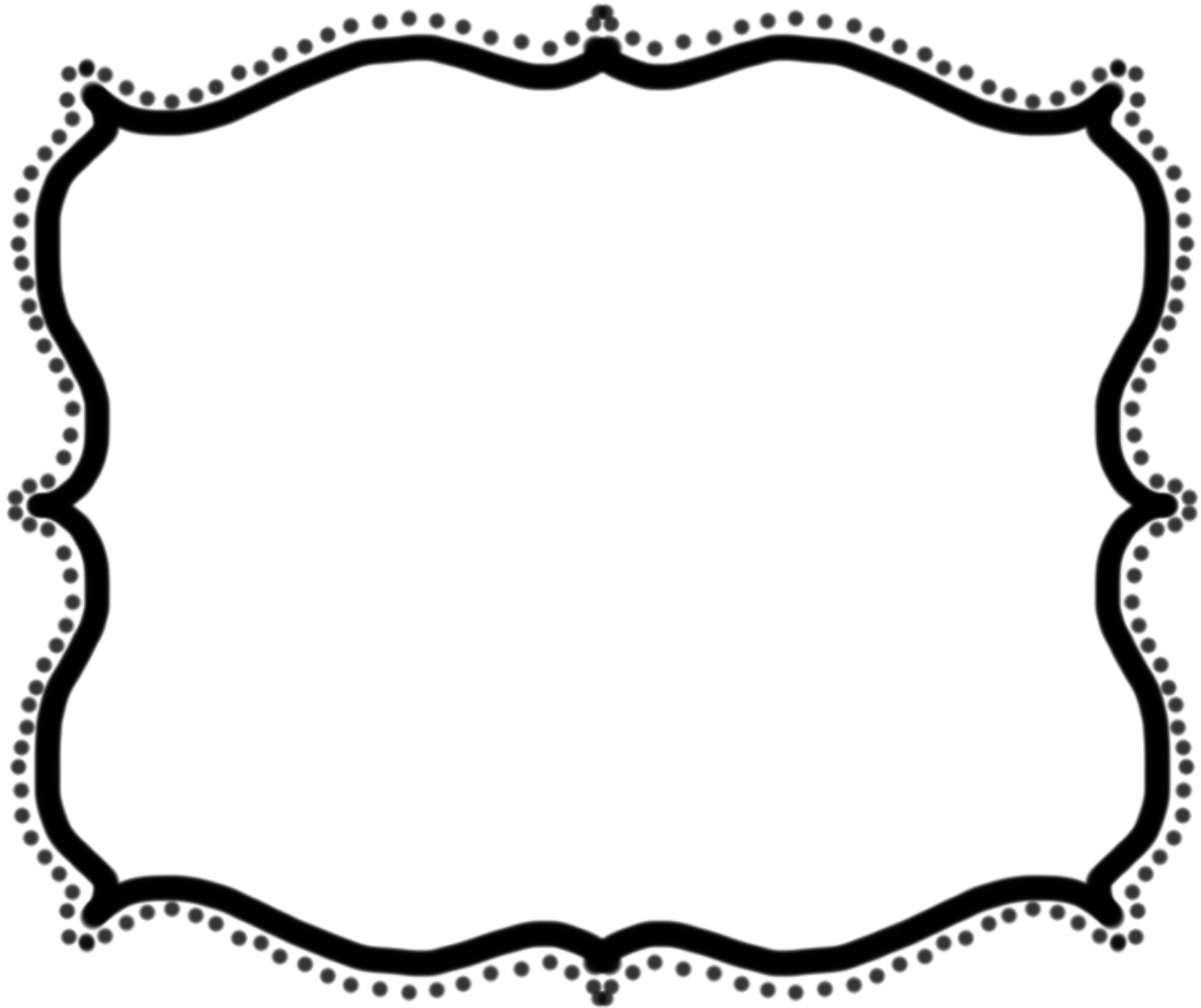
My team eagerly awaits your report. Best of luck out there!

Dr. Lilly Padton

Animal Match-Up Cards

Duck Feet	Owl Wings	Cat Paw/Claws
		
Eagle Beak	Dog Teeth	Grasshopper Mouth
		
<p>My two webbed feet help me swim and live in water-based environments.</p>	<p>My two wings help me move from place to place in search of shelter and food.</p>	<p>My four paws and claws help me run and climb to escape predators and eat my food.</p>
<p>My sharp, hooked beak helps me catch and eat my prey with ease, sometimes in the air!</p>	<p>My sharp teeth help me protect myself when in danger and eat my food.</p>	<p>My tong-like mouth helps me crunch and chew food, like leaves.</p>

My Monster's Portrait - Portfolio Page 1



Monster Brainstorming!

What do you want your monster's body to look like? Will it be hairy, scaly, fluffy? Will it be large or small?

How will your monster move around? Will it need wings, webbed feet, fins, paws/claws?

How will your monster eat? What will it's face/mouth look like? Will it need a beak, sharp teeth, a straw-like or tong-like mouth?

Lions, Tigers & Monsters, Oh My!

Day 2: A Place to Call Home

Teacher/Parent Background:

Lions, tigers and monsters? Yes, you read that correctly; monsters! By creating a unique monster, students will apply their understanding of the needs of living things and their roles in their environments. All animals and plants (including monsters!) body parts that help them survive, grow and behave in their environments. A living thing's environment is like its home, providing shelter/protection, access to water/food and space. In science, we describe a habitat as a place where plants and animals can live.

Overview:

In this activity, students will create a habitat that best suits the needs of their monsters.

Related Standards:

- Develop and use models about how living things use resources to grow and survive; design and evaluate habitats for organisms using earth materials.

Key Terms:

- Organism- A single living thing
- Basic Needs- Things that a living thing needs to survive
- Survive- Stay alive
- Shelter- Protection from the environment
- Habitat- A place where plants and animals can live
- Non-living- Things that have never lived.

Materials List:

- Pen/pencil
- Possible visual representation resources:
 - Colored pencils/crayons/markers
 - Internet access for images/pictures
- Internet access - optional for *Extensions*
- Computer/phone with audio - optional for *Extensions*
- *Student Resources - Pages 4-6*
 - *Freshwater Ecosystem*

- *Desert Ecosystem*
- *My Monster's Home - Portfolio Page 2*

Activity Description:

- Revisit student ideas from *Day 1's: A Monsterous Task!*,
 - How would you best describe your monster?
 - What body parts does your monster have to help it survive?
 - What else might we need to know about your monster as the project continues?
- As we continue this project, we still need to know a few things about your monster! One of which is where your monster lives. As we have learned, plants and animals live in different places. A living thing's habitat is its home, providing shelter/protection, access to water/food and space.
 - For example, the birds outside my house have a habitat that includes trees for protection/shelter, a water dish for access to water, various seeds in the grass for food, and other trees in the neighborhood for space.
- Today, you are going to create your monster's habitat by answering the following questions:
 - Where does your monster live?
 - What kinds of living and non-living things are in your monster's habitat?
- To help you get started, we are going to explore examples of two different types of habitats!
 - Engage students in the following activity:
 - Using the images in the *Freshwater Ecosystem* and *Desert Ecosystem*, identify living and non-living things.
 - Then, discuss the questions below the images.
 - Freshwater Ecosystem - Possible responses may include:
 - Living things are the trees, bushes, plants, and fish.
 - Non-living things are the rocks, gravel, sunlight, and water.
 - The fish may need living things like, smaller fish/animals to eat and plants to hide in.
 - The fish may need non-living things like water, sunlight, rocks for shade and for protection.
 - The fish will need a temperature that is not too hot or too cold and freshwater that is not polluted.
 - Desert Ecosystem - Possible responses may include:
 - Living things are the cacti, trees, plants, and rabbits.

- Non-living things are the rocks, gravel and sunlight.
 - The rabbits may need living things like plants to eat and bushes to hide in.
 - The rabbits may need non-living things like water to drink, sunlight, rocks/ground for a space to burrow inside.
 - The rabbits will need a temperature that is not too cold and not too much rainfall, as they are used to warm temperatures and dry periods.
- After looking through a few examples of habitats, let's revisit your monster! Remember, today you are creating its ecosystem?
 - Where does your monster live?
 - What kinds of living and non-living things are in your monster's habitat?
 - Assist and monitor students as they begin creating their monster's habitat, by guiding them through the *My Monster's Home - Portfolio Page 2*.
 - Encourage students to use colored pencils/crayons/markers to help them illustrate the parts of their monster's ecosystem.

Closure:

- After the activity has concluded, engage in a discussion with students:
 - How would you best describe your monster's habitat?
 - Now that you have created your monster's habitat, what changes do you want to make to your monster/monster's structures to make sure it is best suited to live in its habitat?
 - Feel free to update your *Monster's Portrait* from Day 1!

Extensions:

Watch & Play! BrainPOP - [Ecosystems](#) (free access to BrainPOP at this [link](#))

Student Resources

Freshwater Habitat



Google Image, Conservation Gateway, Healthy Rivers in Colorado Assessing Freshwater Ecosystems for Conservation Outcomes, 2018.



Google Image, Synchronicity Earth, Freshwater Programme: Conserving Freshwater Fish and Ecosystems, 2020.

Circle the living things you can see. Box the non-living things you can see.

- Consider the fish. What living things do they need in their freshwater habitat?
- What non-living things do they need in their habitat?

Desert Habitat



Google Image, Arizona Important Bird Area Program, Cave Creek Ecosystem, 2011.



Google Image, KCET, Architects of The Desert: Jackrabbits and Cottontails, 2012.

Circle the living things you can see. Box the non-living things you can see.

- Consider the jack rabbits. What living things do they need in their desert habitat?
- What non-living things do they need in their habitat?

My Monster's Home - Portfolio Page 2

Ecosystem Brainstorming!

Where does your monster live? What is it's habitat like? Will it be underwater, in a forest, in the arctic or somewhere else?

What other living things are in your monster's habitat? Will there be lots of plants and other animals? What do those plants and animals look like?

What non-living things and conditions does your monster need in its habitat? What kind of protection/shelter does it need?

Lions, Tigers & Monsters, Oh My! Week 4

Lions, Tigers & Monsters, Oh My!

Day 3: It's Dinner Time!

Teacher/Parent Background:

Lions, tigers and monsters? Yes, you read that correctly; monsters! By creating a unique monster, students will apply their understanding of the needs of living things and their roles in their environments. All animals and plants (including monsters!) have body parts that help them survive, grow and behave in their environments. Living things need ways/strategies to obtain the energy they need to survive in their environments. Some living things, called consumers, directly consume other living things for food. Other living things, called producers, produce their own food using sunlight, water and gases in the surrounding air. In science, we describe the possible path energy can take through an ecosystem, between one living thing to the next, as a food chain.

Overview:

In this activity, students will create a food chain to show the feeding relationships between their monster and other living things in their ecosystems.

Related Standards:

- Obtain, analyze, and communicate evidence that organisms need a source of energy, air, water, and certain temperature conditions to survive.

Key Terms:

- Producers: living things that make their own food.
- Consumers: living things that eat other living things for food.
- Food chain: a path energy can take through an ecosystem, from one living thing to the next.

Materials List:

- Pen/pencil
- Scissors
- Glue/tape
- Possible visual representation resources:
 - Colored pencils/crayons/markers
 - Internet access for images/pictures
- Internet access - optional for *Extensions*

- Computer/phone with audio - optional for *Extensions*
- *Student Resources* - Pages 4-6
 - *Food Chain Puzzle* - Story & Pieces
 - *Food Chain Puzzle* - Puzzle Mat
 - *My Monster's Dinner* - Portfolio Page 3

Activity Description:

- Revisit student ideas from *Day 2's: A Place to Call Home*.
 - How would you now describe your monster and your monster's habitat?
 - What else might we need to know about your monster as the project continues?
- As we continue this project, we still need to know a few things about your monster! One of which is how your monster gets the energy it needs to survive and grow. Just like us, some living things called *consumers*, eat other living things for food.
 - For example:
 - A wolf eats a deer to get the energy it needs.
 - A rabbit eats a plant to get the energy it needs.
- Other living things call *producers*, make their own food using resources in its environment, like sunlight and water.
 - For example:
 - Plants, trees and bushes make their own food to get the energy they need.
- In science, we organize these feeding relationships using a food chain. A *food chain* shows a path energy can take through an ecosystem, from one living thing to the next.
- Today, you are going to create your monster's food chain by answering the following questions:
 - What does your monster eat in its habitat?
 - How does it eat?
 - What eats your monster?
 - How does that living thing eat?
- To help you get started, we are going to explore an example of a food chain!
 - Engage students in the following activity:
 - Using the story and images in the *Food Chain Puzzle*, organize the feeding relationships into a food chain.
 - **Note:** Guide students through cutting the puzzle pieces and glueing/taping the pieces into the puzzle mate. Always monitor and assist students with scissors. During this time, share the following main ideas:
 - Remember, food chains show a path energy, from one living thing to the next.

- Food chains are organized a certain way. They always start with producers, since they get their energy from sunlight and other resources. The Sun is how energy first enters the ecosystem.
 - Feel free to draw in a picture of the Sun to the left of the grass, if wanted!
- We can use arrows to show the flow of energy in an ecosystem, from one living thing to the next. The arrows represent the flow of energy.
 - You can glue/tape in the arrows below the mat or below the puzzle piece of the living thing, but still directly on the mat.
 - Feel free to draw an arrow from the Sun to the grass, to show that the grass gets energy from the Sun!
- After creating an example of a food chain, let's revisit your monster! Remember, today you are creating your monster's food chain! Focus on the following questions to guide you:
 - What does your monster eat?
 - How does it eat?
 - What eats your monster?
 - How does that living thing eat?
 - Assist and monitor students as they begin creating their food chains, by guiding them through the *My Monster's Dinner - Portfolio Page 3*.
 - Encourage students to use colored pencils/crayons/markers to help them illustrate the food chain.

Closure:

- After the activity has concluded, engage in a discussion with students:
 - How would you describe your monster's food chain?
 - Now that you have created your monster's food chain, what changes do you want to make to your monster to make sure it is best suited to live in its habitat? Are there any changes you want to make?
 - Feel free to update your *Monster's Portrait* from Day 1 and your *Monster's Ecosystem* from Day 2!

Extensions:

Watch! Crash Course Kids - [Fabulous Food Chains](#)

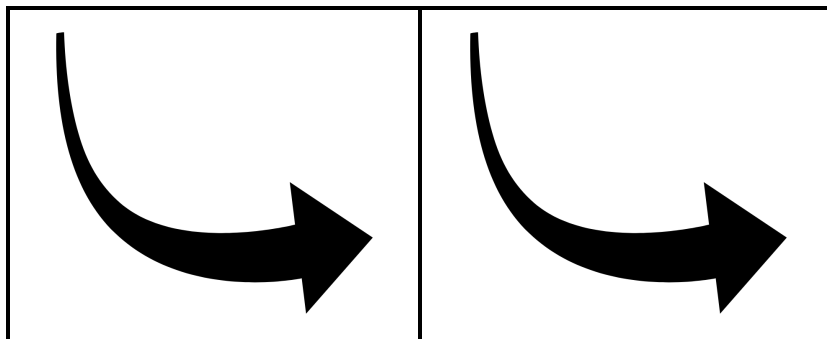
Student Resources

Food Chain Puzzle - Story & Pieces

Story:

On one sunny day in the forest, a deer awoke and was feeling very hungry! Using its rough-textured teeth, the deer grinds-up and eats lots of grass and plants. Feeling full of energy, the deer runs through the forest and comes face-to-face with a wolf! The wolf, who hasn't eaten in a long time, needs energy to survive. The wolf chases the deer and uses its sharp and strong teeth to eat the deer. Just around the trees, three, small wolf cubs join their mom and eat their first meal together.

Puzzle Pieces:



Food Chain Puzzle - Puzzle Mat

--	--	--

My Monster's Dinner - Portfolio Page 3

Food Chain

- Be sure to include names and drawings of the living things and your monster.
- Don't forget to include arrows to show the path of energy!

Food Chain Brainstorming!

Think back to the other living things in your monster's habitat. What does your monster eat in its habitat?

Think back to your monster. How does it eat? What (mouth, legs/arms, etc.) help it eat?

What eats your monster in its habitat? How does that living thing eat?

Lions, Tigers & Monsters, Oh My! Week 4

Lions, Tigers & Monsters, Oh My!

Day 4: Changing Plans!

Teacher/Parent Background:

Lions, tigers and monsters? Yes, you read that correctly; monsters! By creating a unique monster, students will apply their understanding of the needs of living things and their roles in their environments. All animals and plants (including monsters!) have body parts that help them survive in their habitats. Throughout the year habitats change with the seasons or because of some other environmental change.

Overview:

In this activity, students will decide how their monsters respond to environmental changes.

Related Standards:

- Observe, ask questions, and explain how specialized structures found on a variety of plants and animals (including humans) help them sense and respond to their environment.

Key Terms:

- Temperature: how hot or cold something is.
- Migration: the long distance movement of animals from one place to another.
- Precipitation: rain, snow, sleet and hail.
- Hibernation: when an animal goes into a deep sleep for a long time.

Materials List:

- Pen/pencil
- Internet access
- Computer/phone with audio
- Possible visual representation resources:
 - Colored pencils/crayons/markers
 - Internet access for images/pictures
- *Student Resources*

Activity Description:

- Revisit student ideas from *Day 3's: It's Dinner Time.*
 - So far, we have learned so much about your monster, including its:
 - Body parts
 - Habitat
 - Food chain
- As we continue this project, we still need to know one more thing about your monster: How affected by changes in its habitat?
 - As you learned yesterday, your monster eats living things and is eaten by other living things.
- Organisms are constantly responding to things around them!
 - Have students think of how the environment around us can change with the seasons. Does it get colder? Warmer? Do the days get longer? Shorter? How might animals and plants deal with these changes?
- Today,
- To help you get started, we are going to explore a few examples of how other organisms respond to changes!
 - Engage students in the following activity:
 - In *Changing Plans!* students will use their story cards to create two storylines that make sense. There may be more than one correct answer, so be sure that students use supportive reasoning to show why their stories line up. Have students examine why the environmental change will cause the animal or plant to be affected in a certain way. Encourage them to make more storylines if they would like!
 - Once students look at their storylines, have them reflect on why certain organisms migrate while others hibernate. For example, if birds can fly, they might migrate easier than a bear that hibernates. Plants do not have an option to move, so they go dormant during the colder or darker periods.
 - Now that we have looked at examples of how other organisms respond to changes, let's revisit your monster! Remember, today you are going to decide how your monster will respond to things changing in its habitat. Use the following questions to guide you:
 - What kind of do you want your habitat to experience?
 - How will your monster respond to that change?
 - Assist and monitor students.
 - Encourage students to use colored pencils/crayons/markers to help them illustrate the adaptations.

Closure:

- After the activity has concluded, engage in a discussion with students:
 - How would you describe your monster's habitat change?

- Now that you have decided how your monster will respond to the change, is there anything you want to change about how your monster looks?
- Feel free to update your *Monster's Portrait* from Day 1, your *Monster's Home* from Day 2, and your *Monster's Dinner Plate* from Day 3, as wanted!

Extensions:

Watch! Crash Course Kids - [Living Things Change](#)

Student Resources

Changing Plans!

Cut out the story cards and ask students to put them together in a way that makes sense on the sentence mats on the next page. There can be more than one correct answer. Be sure to have students explain why the environmental change will cause the organism to be affected in a certain way.

I am a duck...	...who migrates south across the ocean...	...when snow covers my food in the winter.
I am a bear...	...who hibernates in a cave...	...in the dry desert.
I am a tree...	...who migrates south to find ponds...	...when it rains a lot.
I am the grass...	...who drops my leaves...	...that are not frozen over.
I am a whale...	...who grows very quickly...	...to get away from the icy ocean water.
I am a camel...	...who can live a longtime without water...	...when it gets cold in the winter.

Sentence 1

A vertical flowchart for Sentence 1. It consists of three empty rectangular boxes stacked vertically. The top box is connected to the middle box by a downward-pointing arrow. The middle box is connected to the bottom box by another downward-pointing arrow.

Sentence 2

A vertical flowchart for Sentence 2. It consists of three empty rectangular boxes stacked vertically. The top box is connected to the middle box by a downward-pointing arrow. The middle box is connected to the bottom box by another downward-pointing arrow.

My Monster's Response to Change - Portfolio Page 4

Response to Change

- Be sure to include labels and drawings of how your monster's habitat changed and what your monster's response is.

Lions, Tigers & Monsters, Oh My!

Day 5: Ladies & Gentlemen, I Present to You...

Teacher/Parent Background:

Lions, tigers and monsters? Yes, you read that correctly; monsters! By creating a unique monster, students will apply their understanding of the needs of living things and their roles in their environments. All animals and plants (including monsters!) body parts that help them survive, grow and behave in their environments. In the science community, scientists and engineers communicate their findings with others to share their work and receive feedback. Just like scientists and engineers, students will also present their monster projects' findings to share with others.

Overview:

In this activity, students will present their monster projects with others.

Related Standards:

- Observe, ask questions, and explain how specialized structures found on a variety of plants and animals (including humans) help them sense and respond to their environment.

Materials List:

- Pen/pencil
- Possible materials for 3D model:
 - Popsicle sticks
 - Clay/Playdough
 - Feathers/fabric
 - Cardboard/wood
 - Construction paper
 - Aluminum foil
 - Markers
 - Glue/tape and scissors

Activity Description:

- Revisit student ideas from *Day 4's: Changing Plans!*
 - Now that you have decided how your monster will respond to changes, is there anything you changed about how your monster looks? Why or why not?

- So far, we have learned so much about your monster! We have learned...
 - what your monster's body looks like
 - what kind of habitat it lives in
 - what it eats and what eats it
 - how it stays safe in its habitat
- As we near the end of this project, we still need to complete one more task...the presentation! Let's revisit the *Monster Project Details* to check our work so far and to look over the details of the presentation.
 - Review the *Monster Project Details* with students.
 - Remind students that the "report" will be in the form of a portfolio that they have worked towards each day; each of their "portfolio pages" will build the "report".
 - Assist students in checking their progress to ensure they have completed all details listed under Step 1 and 2.
 - **Note:** Students will have time during this activity to build a 3D model of their monster.
 - Encourage students to ask questions about the project details.
- Today, you are going to present your monster project with others! You will need to walk someone else through your project, using and showing your portfolio pages and model.
 - Looking back through the project details, it seems like Dr. Lilly Padton's team would be interested in studying a 3D model of your monster. A 3D model is just a physical representation (something you can make and hold - think of a stuffed animal or toy!) of what your monster looks like, using different materials. This will help your drawings/pictures come alive!
 - Actively assist students in using simple, household materials to create a model of their monster. Closely monitor and assist students when using scissors. Some materials may include:
 - Popsicle sticks
 - Clay/Playdough
 - Feathers/fabric
 - Cardboard/wood
 - Construction paper
 - Aluminum foil
 - Markers
 - Glue/tape and scissors
- Now that our monster models are completed, you will present your portfolio pages and model with someone else!
 - If we look back at Part 3 of the *Monster Project Details*, you will also need to share some "monster tips" during your presentation, including where other people can see your monster (does it like to spend time in the open or does it mostly stay in its home?) and the best time of day/night to see your monster.

- Just like scientists, the people you present to will also want to know the best ways to observe or watch your monster!
- Scientists and engineers not only share their work with others, but they also ask for feedback or for ways they can make things better!
- After sharing your project with a family member, ask for feedback with questions like:
 - What do you like?
 - What do you have questions about?
 - What would you change? Why?
 - Assist students in choosing an audience to share their project with. This will most likely include family members, but could also include a friend or teacher.
 - If sharing with a friend or teacher, assist students in accessing and sharing their work using technology resources like:
 - Google Hangouts
 - Zoom
 - Record a video and email it to a family member, friend or teacher
 - FaceTime

Closure:

- After the activity has concluded, engage in a discussion with students:
 - What did you like the most about this project?
 - What was the hardest part, why? What did you do to overcome the hard part?
 - What feedback did you get from your presentation? What did you learn from the feedback?
 - Think about scientists and engineers. What did you do during the project that scientists and engineers do? What did you learn during the project that scientists and engineers learn?

Extensions:

Continue the Project!

- Encourage students to make revisions to their projects based on feedback they received from audience members.
 - Prompt students to make changes to their portfolio pages/model.
- Then, prompt students to re-present to their audience, sharing their improvements and asking for additional feedback.