

Amazing Animal Adaptations

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Abstract

This curriculum unit is designed for use in the K-2 Special Education classroom, specifically, an Autistic Support classroom. In order to accommodate the diverse population of learners, differentiated instruction and assessment will be provided in order for all students to successfully participate in the lesson. The lessons purpose is to teach students that animals must adapt to their environment in order to survive. Students will also understand the ways that they, themselves, adapt to their environments.

Rational

In the autistic support classroom, the focus tends to be on functional life skills. There tends to be a wide range of verbal, functional and academic abilities in this setting. Students can range from extremely low functioning to gifted, therefore, lessons have to be planned with these differences in mind. Creating a science curriculum that will accommodate the wide range of educational abilities in the Autistic classroom can be a challenge.

Keeping any student engaged in a lesson requires forethought and planning. That's why, during the planning of this curriculum, I must keep in mind the different learning styles of my students. Some of my students are very visual learners, they like to see pictures, videos, or actual demonstrations of concepts that I am trying to teach them. Some of my students are very tactile learners. In order to understand something they want to touch it or feel it in their hands. My curriculum will be taught in condensed increments in order to accommodate the short attention spans of my students.

My Curriculum will teach students about Animal Adaptations. The students will learn about behavioral and physiological adaptations of animals in the wild. I will use a hands on approach to reinforce the concepts of adaptations. I will also integrate videos showing how animals in the wild use their adaptations to survive. Because autistic students often need repetition in order to master a skill or concept, the material will be presented in a number of ways in order to keep the students engaged. The use of animals in the wild as the main focus of the curriculum allows the students to explore animals and habitats that they are not familiar with. The curriculum can easily be followed up with a trip to the zoo so the students can see the animals that they learned about. At the end of the curriculum, the students will be able to identify animal adaptations and

their importance, either verbally or with the use of PECS pictures (picture exchange communication system) for non-verbal students.

Content Objectives

This unit is intended for students in the K-2 Autistic Support classroom. It will include differentiated instruction to accommodate different learning abilities.

Students will be able to:

- Describe how they adapt to their environment during different seasons
- Describe animal adaptations that are important for survival
- Identify how animals adapt to different environments

Standards that will be addressed:

3.1.4 C2, students will describe plant and animal adaptations that are important for survival.

4.1 2.D Identify differences in living things (e.g., color, shape, size, etc.) and describe how adaptations are important for survival.

4.1 2.E Identify how living things survive changes in their environment.

Teaching Strategies

Autistic students benefit from repetition to promote learning in the classroom. This is why it's important to present the material in a variety of ways to keep the students engaged.

Take Students Interests into Account

Many children with autism have a fixation on certain topics or activities. When a student is interested in a topic that they are learning about, their engagement deepens. Animals are a topic that all of my students enjoy talking about, and that they have some experience with in the form of family pets.

Multisensory Learning

Many students with autism are multisensory thinkers and don't focus as well when assignments only engage one of their senses. Renowned scientist and autism advocate Dr. Temple Grandin once said, "I used to think adults spoke a different language. I think in pictures. Words are like a second language to me." With this in mind, it is important to include hands-on lessons in order to keep students interested.

Read Alouds

Reading aloud is an important component of the elementary classroom. Read Alouds help build many foundational skills and improve language and listening skills in students. Read Alouds develop connections between the spoken and written word as well as develop vocabulary. During the implementation of this curriculum, students will listen to stories read aloud in the classroom pertaining to animals and how they adapt in their environment.

Graphic Organizers

Graphic Organizers are charts that are used to visualize ideas and organize information. Research shows graphic organizers aid comprehension by allowing students to make connections between what they know and what they are learning. They also provide a simple structure for thinking about old and new information. Graphic Organizers help students sort ideas, analyze relationships, review concepts, and demonstrate new understanding.

Modeling

Modeling is a process that includes demonstrating a desired skill or behavior while describing the actions and decisions being made throughout the process. During the lesson, the teacher will Model the actions or tasks that the students are required to imitate.

Easy Ways to Demonstrate Mastery

Because we are often teaching the science standards as part of the IEP we need easy ways to demonstrate mastery. I included a number of different ways that the students can demonstrate mastery depending on their skill level. There are worksheets for cutting and pasting, using words and pictures, and using PECS (Picture Exchange Cards).

Classroom Activities

Lesson 1: How Do I Adapt to the Seasons?

Objectives:

- The students will understand the differences in weather that occur in summer (hot) and winter (cold)
- The students will be able to identify the differences in the way they dress and the activities they perform during summer and winter
- The students will understand that they adapt, or adjust their behavior, to suit the weather

Materials:

- Book - *A Book of Seasons*
- Chart Paper

- Glue Sticks
- Crayons
- Adapting to Weather handout
- Pecs

Procedure:

1. The lesson will begin with the introduction of the meaning of the word adapt/adaptation. Write the words “adapt” and “adaptation” on a piece of chart paper that will hang in the classroom. for the duration of the unit. This will be the Vocabulary Chart for the duration of the unit. To adapt means to adjust or change your behavior in order to survive. Explain to the students that all living things must adapt to the environment where they live in order to survive. Tell the students that one way humans adapt is by adjusting or changing their behavior during the different seasons of the year. Humans dress and behave differently according to the season. Ask the students questions, such as, “ What do you wear when you play outside in the summer?” “Do you wear the same clothes if you play outside in the winter?” “Why or why not?”
2. Read *A Book of Seasons* aloud to the students. Stop to ask and answer questions during the read aloud.
3. After the read aloud, direct the students to the “Adapting to the Seasons” chart (made on chart paper) that is hanging at the front of the room. Tell the students that you will be filling out the chart together. Each student will receive their own copy of the chart to fill in. The students will either write their answers on their chart, or, glue PECS onto their paper to indicate their response. (Adapting to the Seasons handout and PECS are included at the end of the curriculum unit.)
4. Ask questions about the different clothing that the students wear in the summer and winte, coat, mittens, bathing suit, etc. Ask students about the different things that they do in the summer and winter, swim, chase lightning bugs, build a snowman, etc. Write their responses in the appropriate space on the chart.
5. Allow the students time to write the responses on their own paper. If the student is not able to write, he/she will glue a picture of the correct response in the correct column on their own paper.
6. When all students are finished recording their responses, have them share their work with the class.

Assessment:

Student understanding of the material taught will be based on teacher observation, student responses given during the lesson and the responses on the students worksheet.

Lesson 2: Behavioral Adaptations

Hibernation - How Animals Adapt to the Winter

Objectives:

- The students will be able to define the word hibernation
- The students will be able to know why animals hibernate
- The students will be able to identify animals that hibernate

Materials:

- Vocabulary Chart from the first lesson
- Hibernating Animals For Kids video
- Copy of the song, *Time For Hibernation*, and pictures of or toy replicas of the animals in the poem (optional)
- Copies of Hibernation handouts for students which are differentiated based on student ability

Procedure:

1. The lesson will begin with a review of the meaning of the word, adapt/adaptation. Students will be reminded that to adapt means to adjust or change your behavior in order to survive. The students will then be introduced to the new words, hibernate/hibernation. These words will be added to the Vocabulary Chart. Explain to students that to hibernate means to go into a deep sleep for long periods of time. Just as humans adapt their behavior and stay indoors during the cold winter months, some animals adapt to the winter weather by hibernating.
2. The students will watch the video, *Hibernating Animals For Kids*, which will show the types of animals who hibernate and where they hibernate. Ask and answer questions when the students are finished watching the video.
3. Next, the teacher will lead the students in singing the song, *Time For Hibernation*. The song is a review of animals who hibernate and where they hibernate. Young students love to sing, and putting the information to music will make remembering it easier for the students. (You can use pictures of the animals or toy animals to introduce each verse of the song)
4. Finally, the students will complete a worksheet about hibernation. Worksheets will be distributed based on student ability.
5. Students will share their completed work with the class.

Assessment:

Student understanding of the material taught will be based on teacher observation, student responses given during the lesson and the responses on the students worksheet.

Lesson 3: Physical Adaptations

How Animals Use Camouflage To Protect themselves

Objectives:

- The students will be able to define the word camouflage
- The students will know that this adaptation is important to animal survival
- The students will know that camouflage helps animals hide from predators and helps them to blend into their surroundings so they can catch food

Materials:

- Vocabulary Chart from the first lesson
- Book - *Critters In Camouflage*
- Butterfly template
- Crayons
- Tape

Procedure:

- Review the words on the Vocabulary Chart
- Tell the students that they will be learning about another type of animal adaptation called camouflage. Explain that camouflage is a way for animals to disguise themselves to protect them from predators and to help them obtain food in the wild. Explain that animals use the color of their fur, feathers, or skin to blend into their environment. This helps them to hide from their enemies. It also helps them to sneak up on their prey.
- Read *Critters In Camouflage* aloud to the students. Stop to ask and answer questions during the read aloud.
- Next, tell the students that they will take part in an activity where they will camouflage a butterfly. Students will be told to look around the room to find a spot where they would like to hide their butterfly. They will then be given a paper butterfly that they will color to conceal their butterfly. After the butterflies are colored, the students will hide their eyes as each one tapes their butterflies around the classroom.

- When everyone is finished, the students will look around the classroom to see who can spot the butterflies.
- Whose butterfly was spotted first? Why? Were there any butterflies that were not found? Why? What would happen if these were real butterflies in the wild?

Assessment:

Student understanding of the material taught will be based on teacher observation, student responses given during the lesson and student participation in the butterfly activity.

Extension Activity:

Materials:

- Color pictures of different habitats, desert, savanna, woodlands and arctic
- Small plastic animal figures (make sure they are the animals natural colors)

Procedure:

- Print out color pictures of different habitats such as desert, savanna, woodlands and arctic.
- Give students an assortment of small plastic animals.
- Have students place each animal in their natural habitat. If they're not sure of an animal's habitat, tell the student to place the animal in the habitat where it is best camouflaged.
- Discuss with the students what helped each animal camouflage in its habitat

Assessment:

Student understanding of the material taught will be based on teacher observation of student participation in the camouflage activity.

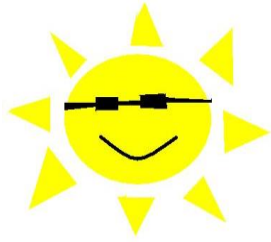
Reading List:

Alexander, Karen. (2010). *Critters In Camouflage*. New York, NY: Scholastic.

Goodman, Susan E., and Michael J. Doolittle. *Claws, Coats, and Camouflage: the Ways Animals Fit into Their World*. Millbrook Press, 2001.

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- “Animal Adaptations for Survival.” *PowerKnowledge Life Science*, The Rosen Publishing Group, Inc., pklifescience.com/article/480/animal-adaptations-for-survival. Accessed 2 Mar 2020.
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- “Adaptation.” National Geographic Society. Retrieved March 2, 2020 from <https://nationalgeographic.org>
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- Learningjunction. (n.d.). Hibernating Animals For Kids. Retrieved July 17, 2020, from <https://www.youtube.com/watch?v=1KIDrDOy9hg&t=25s>
- “Unbelievably Amazing Examples of Animal Adaptations.” Retrieved March 2, 2020 from <https://animalsake.com>

Adapting to the Weather



SUMMER



WINTER

Time For Hibernation
(Frere Jacques tune)

Are you sleeping, are you sleeping,
Big black bear, big black bear?
Time for hibernation.
What is your location?
In a log, in a lair.

Are you sleeping, are you sleeping,
Hanging bat, hanging bat?
Time for hibernation.
What is your location?
In a cave is where I'm at.

Are you sleeping, are you sleeping,
Garter snake, garter snake?
Time for hibernation.
What is your location?
In the mud, in a lake.



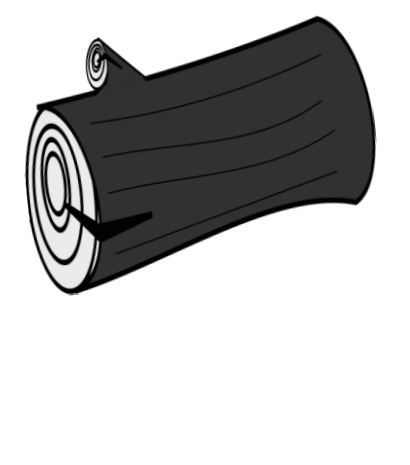
Are you sleeping, are you sleeping,
Toad and frog, toad and frog?
Time for hibernation.
What is your location?
In a pond, near a log.

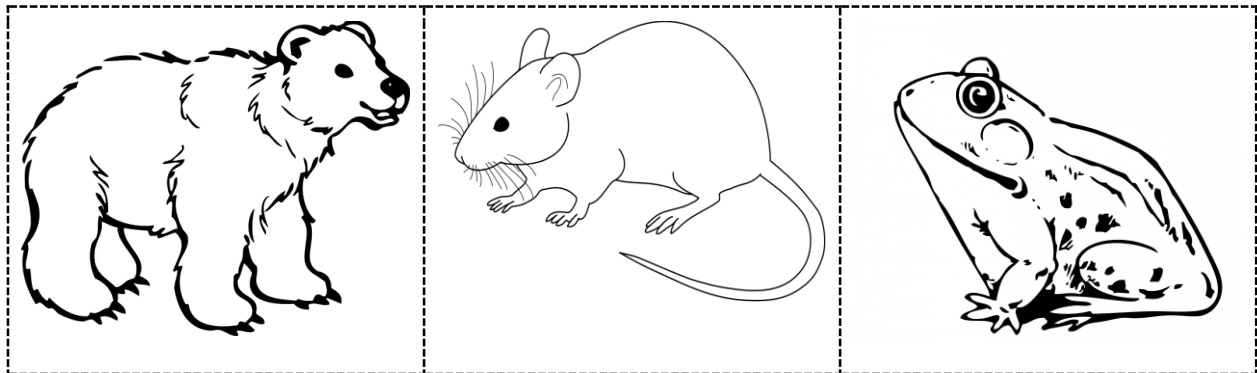
Are you sleeping, are you sleeping,
Meadow mouse, meadow mouse?
Time for hibernation.
What is your location?
in a field, near a house.

Are you sleeping, are you sleeping,
Turtle friend, turtle friend?
Time for hibernation.
What is your location?
In the stream, till winter's end!

Animals Who Hibernate

Directions: Cut out the animal pictures. Glue the animal on the picture of the place where they hibernate.

		
Cave	House	Log





Name: _____

Hibernate

Write a definition:

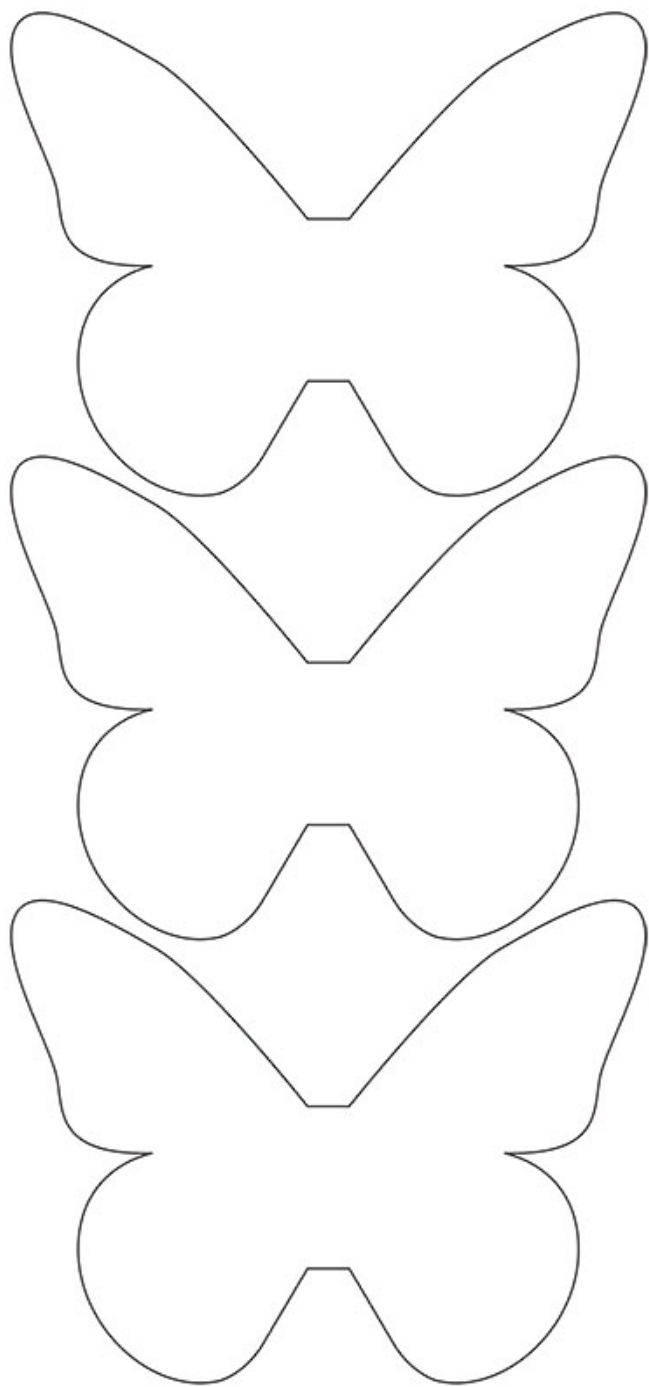
Name 4 animals that hibernate:

1. _____ 3. _____

2. _____ 4. _____

Write the word hibernate in a sentence:

Butterfly Template for Camouflage Activity



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