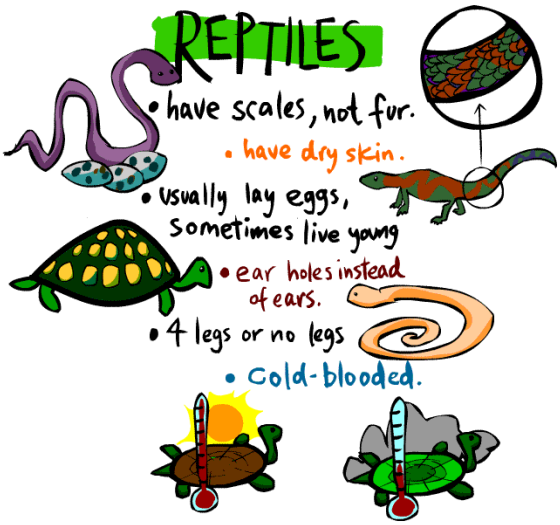
Reptiles



Discipline: Science and Language Arts
Grade: 3rd-5th
Time: Three 45 minute blocks

Introduction

Reptiles are fascinating creatures! There are four main categories of reptiles including; Crocodilia (crocodiles, and alligators), Sphenodontia (tuataras), Squamata (lizards and snakes) and Testudines(turtles and tortoises). Two distinguishing characteristics of reptiles are that they are cold blooded and typically covered in scales. Reptiles spend most of their time on land however, they do enjoy some time in the water. Adaptations describe the changing traits that enable reptiles to live in their environments. Adaptations can be found both in the physical and behavioral traits of reptiles.

Anticipated Student Learning Outcomes

-Students will understand common physical and behavioral characteristics of reptiles.
- Students will possess a basic understanding of adaptations.
- Students will investigate adaptations for a specific reptile.
- Students will identify various benefits of adaptations for specific reptiles.
- Students will create their own reptile exhibiting various adaptations and providing a rationale for these unique traits.

CRISPA

___X__ Connections	__X___ Risk-Taking	__X____Imagination
___X__ Sensory Experience	__X___ Perceptivity	__X__ Active Engagement

Overview

In this lesson, students will investigate various characteristics of reptiles, specifically their unique adaptations. Students will research one specific reptile, however, through a collaborative classroom environment; they will gain a greater understanding of several reptiles and their adaptations. The lesson culminates with a creation of a new reptile in which students identify adaptations and provide evidence for these unique adaptations.

Materials

- Michael Stanwood's *Reptiles* song on his CD *Living Together on Planet Earth* (track 6)
- CD player or comparable device
- Index cards
- Writing utensils
- Chart Paper or blackboard
- Photographs of reptiles (some provided in appendix of this lesson)
- Reptile research materials
- *Reptiles and their Adaptations* Handout
- *Scientists Discover a New Reptile* handout
- Various artistic materials

Evaluation

Students will be evaluated throughout the lesson in a variety of informal and formal ways. Students' active engagement and participation in discussions provide an informal assessment of their understanding. The construction of the reptile and the artistic representation provides a more formal evaluation of student understanding of reptiles and their adaptations.

Suggested Procedures

Introduction

1. Distribute a large index card to each student. Explain to students that they are going to be investigating reptiles during this lesson. On the front of the index card, ask students to draw a representation of a reptile. If they would like to, they can incorporate a few describing words about reptiles as well. On the back of the index cards, have students write three questions about what they would like to know about reptiles. Explain to the students that as they work, you are going to play a song about reptiles (Track 6, *Reptiles* by Michael Stanwood). Tell students that they can move to the music as they feel while they complete their index card. Provide time for the students to complete the index card activity and enjoy the music.
2. Instruct students to turn to their neighbor and talk about what they think a reptile is. Have them share their illustration from their index card. After they share what they think a reptile is, have students discuss their questions. As the students are engaging in conversation, walk around to each pair and provide any necessary prompts or guiding questions. Have pairs share back to the class.
3. Hand out a photograph of a reptile to each student. Have the student examine the picture for approximately one minute. After a minute, explain to students that they are going to look at the picture again, and this time, they are to truly examine the picture. This time, they should record their observations of the reptile. Provide questions to prompt your students' critical thinking. Such prompts may include:
    - Can you imagine what the reptile would feel like?
    - Look at one tiny detail in the picture and describe it.
    - What unusual thing do you see in the picture?
    - What do you imagine this reptile smelling like?
    - If this animal was making a sound, what would it sound like?

4. Have students discuss their observations with their partner. Invite each pair up to the board or on chart paper to record a few of their observations. Review the observations as a class. Explain to students that while reptiles may look different, they share a few common characteristics. Ask students if they can provide these common characteristics of reptiles. Record these characteristics on a separate sheet of chart paper. Some characteristics to include in your discussion:
    - Reptiles are vertebrates
    - They have scaly skin that keeps their bodies from drying out
    - Their young look like small versions of the adults when they hatch
    - Reptiles are a cold blooded animal
        - They must bask in the sun or find a warm spot to get warm and become active, and they must find shade or a cool spot to cool off.
        - In cold conditions they become sluggish and don't move around much, and some enter a state of hibernation if it will be cold for a long time.
    - There are four main groups of reptiles:
        1. turtles and tortoises
        2. lizards and snakes
        3. crocodiles and alligators
        4. tuatara

Activity:

1. Explain that reptiles have several different adaptations to help with their survival. Ask students to predict what the word adaptations means.
    - Adaptations:
        - Any alteration in the structure or function of an organism or any of its parts that results from natural selection and by which the organism becomes better fitted to survive and multiply in its environment.
        - A form or structure modified to fit a changed environment.
        - The ability of a species to survive in a particular ecological niche, especially because of alterations of form or behavior brought about through natural selection.
            - Definitions provided from dictionary.com
    - Provide a well-known example of an animal adaptation to the class. For example, a bear hibernates in the winter so that it can survive the harsh weather and food shortage. Encourage students to provide other examples of adaptations.
    - Explain to students that reptiles have been living on Earth for over 300 million years. They've been able to survive because of specific traits and adaptations, that enable them to live in their environments
2. Divide the class into groups of two or three students. Assign each group a reptile to research. Some suggestions include: a snapping turtle, rattlesnake, iguana, American alligator, chameleon, tuatara, sea turtle, python, and the Nile crocodile. Distribute *Reptiles and their Adaptations* handout. Review the instructions of the assignment and explain that in their groups, students are to research the specific adaptations for the reptile and record their findings on the *Reptiles and their Adaptations* handout. Provide students access to a wealth of resources including books, journals, magazines, and the internet.
    - Example of adaptations are:

- Turtles spend most of their lives in the water and have plated shells covering their bodies.
- Lizards have great vision and use their tongues to taste their surroundings.
- Crocodiles lose their teeth chomping on prey, but new sets always grow in.
- Snakes can go a long time without eating, but when they do, their meal is usually another animal.
- The tuatara is similar to a lizard, but the tuatara has a third eye and an extra row of teeth.

3. Once students have completed their research, regroup the students so that the new groups have one representative for each reptile. Provide the students approximately 1-2 minutes each to share about their reptile and their adaptations.
4. Explain to students that they are going to create their own reptile. Distribute the handout *Scientists Discover a New Reptile…* Have students complete the brainstorming outline about the basic physical characteristics, habitat, and behaviors of the reptile. Utilizing these element, have the students create 7-10 adaptations that help this reptile survive in its environment. For each adaptation, students must provide an explanation as to how this will be beneficial for the reptile.
5. Once students have completed their brainstorming, explain that they are going to make a three dimensional model of their reptile. Provide students access to a variety of artistic resources such as clay, pipe cleaners, card board, recycled materials such as bottles, caps, boxes, etc.
6. Put your newly discovered reptiles on display and provide time for the class to view each other's.

Possible Extensions

1. Instruct students to write a creative story about their new reptile.
2. Select one reptile to further research and present information in a brochure.
3. Create a picture book of various types of reptiles.
4. Create a skit of reptiles that are forced to leave their habitat and find another one.
5. Write a proposal or a persuasive piece asking the local zoo to expand their reptile exhibit.
6. Create a water color painting of reptiles.
7. Take a field trip to the local zoo to observe reptiles
8. Bring in someone who works in the field to share their experience of working with reptiles.

Additional Resources

Websites:

http://kids.sandiegozoo.org/animals/reptiles
http://www.kidzone.ws/animals/reptiles1.htm
http://animals.nationalgeographic.com/animals/reptiles/
http://nationalzoo.si.edu/Animals/ReptilesAmphibians/ForKids/default.cfm
http://www.neok12.com/Reptiles.htm
http://www.sandiegozoo.org/animalbytes/a-reptiles.html

Books:

Reptile (Eyewitness) Colin McCarthy (Jun 1, 2000)
Smart Kids Reptiles, Simon Mugford (Mar 6, 2007)
Everything Reptile: What Kids Really Want to Know about Reptiles, Cherie Winner (Oct 1, 2004)
Eye Wonder: Reptiles, Simon Holland (Apr 1, 2002)

Appendix

Reptile and Their Adaptations handout
Scientists Discover a New Reptile handout
Reptile Photographs

Reptiles and Their Adaptations

Name:_____ Date:_____

Reptile: _____

Directions: Utilizing the available research materials, investigate specific adaptations for your given reptile and record your findings in the table below. You should include the specific adaptation, the purpose or benefits of the adaptation, and a drawing of the adaptation.

Adaptation	Purpose or Benefit	Image

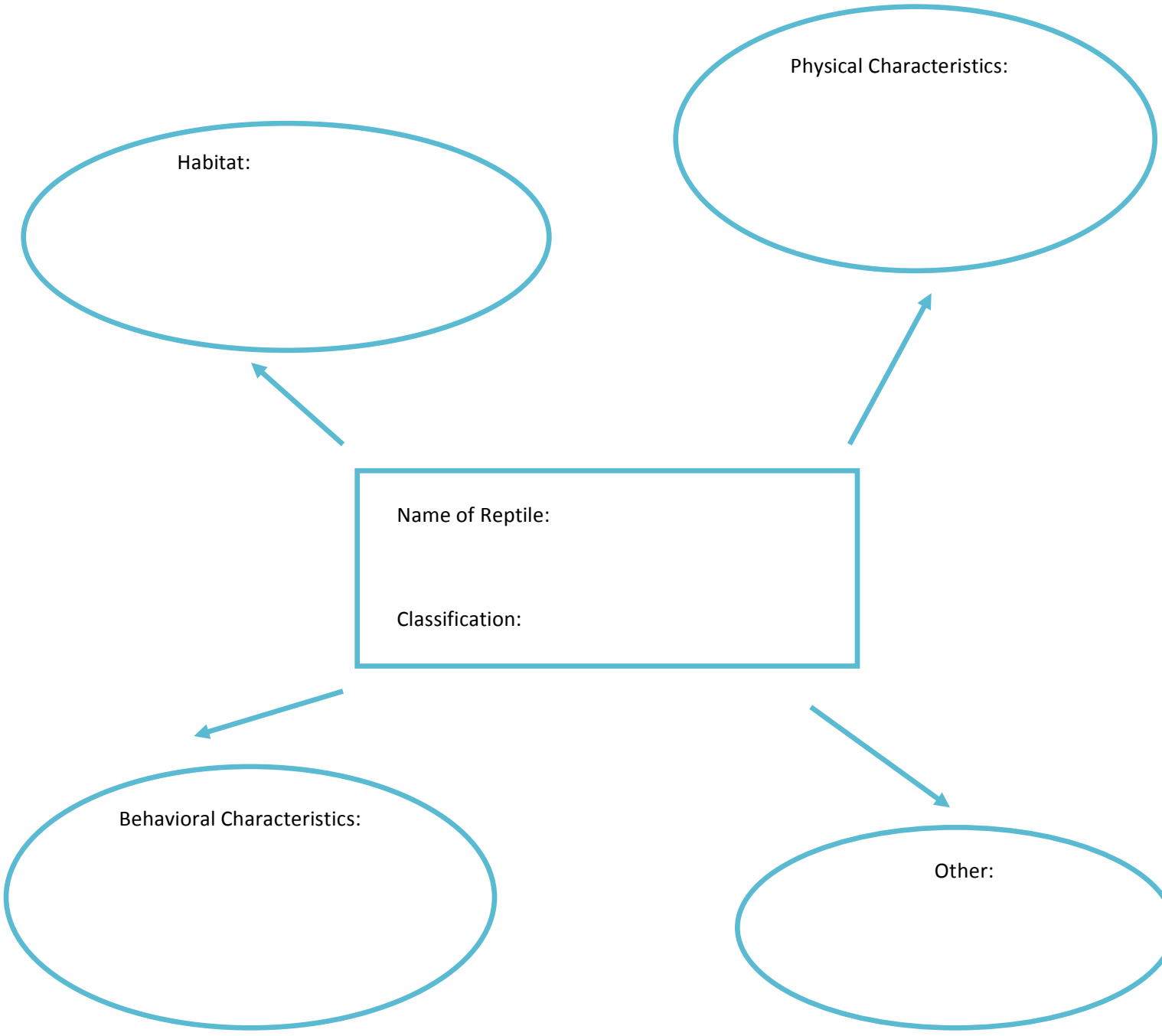
Adaptation	Purpose or Benefit	Image

Name: _____ Date: _____

Scientists Discover a New Reptile!

After years of hard work, dedication, and persistence, scientists have reported that they have, in fact, discovered a brand new reptile. How this reptile has been wondering our planet Earth going undiscovered for years is still unknown. All that is known is that it is an exciting time in the field of science!

Directions: Congratulations! You are one of the key scientists on the team of researchers who has discovered the new reptile. After years of studying this reptile, you are ready to report your findings to the public. Please complete the outline with information pertaining to your reptile including the basic physical characteristics, habitat, and behaviors of the reptile.



Scientists Discover a New Reptile!
What is It?

Once you have completed the outline, create 7-10 adaptations that help this reptile survive in its environment. For each adaptation, you must provide an explanation as to how this will be beneficial for the reptile.

Adaptations	**Purpose or Benefit**

Adaptations	Purpose or Benefit

Reptile Photographs

http://kids.sandiegozoo.org/animals/reptiles