

DIVERSITY AND ADAPTATIONS

GRADE 6DAA ANCHOR STATION

Science Anchors

Science anchors are ongoing engaging tasks that students can work on independently. They are curriculum based, clearly defined and differentiated for students. Students can work on science anchors as they complete work at varying rates, when the teacher is working with a small groups of students, at the beginning or end of a class period, or when they are waiting for teacher assistance. Sample science anchor tasks include: reading and responding to text, journaling, learning or interest centers, listening or viewing centers, independent research or projects and hands-on minds-on science kit tasks.

Overview

The science anchor tasks in this resource support the MCPS Grade 6 Diversity and Adaptations unit. Provide a variety of anchor tasks at your anchor station to address the diverse learning styles and needs of your students.

| Anchor Task | Topics |
|-------------------------------------|-----------------------------------|
| 1-Animal Classification Review Game | Classification |
| 2-Create a Dichotomous Key | Classification |
| 3-Adaptation Rap or Song | Adaptation |
| 4-Adaptation Poster Project | Adaptation |
| 5-Best Suited Animal | Adaptation, Survival |
| 6-Extinct Species Timeline | Populations, Adaptation, Survival |
| 7-Research a Native Species | Survival |
| 8-Real Issues Debate | Populations |

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Possible Anchor Tasks

Prentice Hall *Bacteria to Plants All-in One Teaching Resources*:

| Task | Topics |
|--|--|
| Classifying Organisms- <i>Guided Reading and Study</i> pp.56-59 | Classification |
| How Many Species of Animals Are There?- <i>Enrich</i> p.62 | Populations, Kingdom Animalia |
| Living Mysteries- <i>Skills Lab</i> pp.63-65 | Classification, Kingdom Plantae, Dichotomous Key |
| Domains and Kingdoms- <i>Guided Reading and Study</i> pp.67-70 | Classification |
| A New Phylum- <i>Enrich</i> p.71 | Classification, Kingdom Animalia |
| The Origin of Life- <i>Guided Reading and Study</i> pp.73-76 | Evolution |
| Is This Life?- <i>Enrich</i> p.78 | Fossils |
| Developing a Classification System for Seeds- <i>Laboratory Investigation</i> pp.82-84 | Classification, Kingdom Plantae |
| Classifying Cerealites- <i>Performance Assessment</i> | Classification |
| Be a Disease Detective- <i>Performance Assessment</i> pp.100-106 | Classification, Kingdom Eubacteria |
| Bacteria- <i>Guided Reading and Study</i> pp.118-121 | Kingdom Eubacteria |
| Identifying Bacteria- <i>Enrich</i> p.123 | Classification, Kingdom Eubacteria |
| Comparing Disinfectants- <i>Consumer Lab</i> pp.124-126 | Kingdom Eubacteria |
| Bacteria That Dine on Vegetables- <i>Laboratory Investigation</i> pp.136-141 | Kingdom Eubacteria |
| What Are Viruses and Bacteria?- <i>Performance Assessment</i> pp.142-144 (modify to What Is Bacteria?) | Classification, Kingdom Eubacteria |
| A Mushroom Farm- <i>Chapter Project</i> pp.156-162 | Kingdom Fungi |

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Possible Anchor Tasks

Prentice Hall *Bacteria to Plants All-in One Teaching Resources* : continued

| Task | Concepts |
|--|-------------------------------|
| Fungi – <i>Guided Reading and Study</i> pp.180-183 | Classification, Kingdom Fungi |
| Fungi- <i>Review and Reinforce</i> p.184 | Kingdom Fungi |
| A Really Big Fungus- <i>Enrich</i> p.185 | Classification, Kingdom Fungi |
| Modeling Protists- <i>Performance Assessment</i> | Kingdom Protista |

Prentice Hall *From Bacteria to Plants Guided Reading and Study Workbook*:

| Task | Topics |
|---|----------------|
| Classifying Organisms- <i>Guided Reading and Study</i> pp.13-15 | Classification |
| Domains and Kingdoms- <i>Guided Reading and Study</i> pp.17-18 | Classification |
| The Origin of Life- <i>Guided Reading and Study</i> p.19-21 | Evolution |

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Possible Anchor Tasks

Prentice Hall *Animals All-in One Teaching Resources*:

| Task | Topics |
|--|----------------------------|
| Rushing to Eat - <i>Enrich</i> p. 52 | Adaptation |
| Describing Mollusk Shells- <i>Enrich</i> p.118 | Classification |
| The Arthropod Evolutionary Tree- <i>Enrich</i> p.128 | Evolution |
| Warning Flares and Adaptation False Colors- <i>Enrich</i> p.134 | Adaptation |
| Sea Lilies- <i>Enrich</i> p.149 | Classification |
| Characteristics of Sea Stars- <i>Laboratory Investigation</i> pp.153-158 | Adaptation |
| Imprint Inquiry- <i>Performance Assessment</i> p.161 | Classification |
| Similar but Different- <i>Enrich</i> p.187 | Classification |
| Soaking Up Those Rays- <i>Skills Lab</i> p.188 | Adaptation |
| Depth Adjustment by Fishes- <i>Enrich</i> p.196 | Adaptation, Classification |

Prentice Hall *Animals Guided Reading and Study Workbook*:

| Task | Topics |
|---|--|
| What Is an Animal?- <i>Guided Reading and Study</i> pp.9-12 | Classification, Adaptation, Kingdom Animalia |

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Possible Anchor Tasks

Prentice Hall *Environmental Science All-in One Teaching Resources*:

| Task | Topics |
|---|----------------------|
| Classifying the Great Apes pp.5-6 | Classification |
| Bat Adaptations p.7 | Adaptation |
| The Aye-Aye pp.14-15 | Survival |
| Organisms and Continental Drift- <i>Enrich</i> p.126 | Populations, Fossils |
| Future Population Growth- <i>Enrich</i> p.181 | Populations |
| Endangered Species- <i>Enrich</i> p.200 | Survival |
| Endangered Animal Species- <i>Performance Assessment</i> pp.214-216 | Survival |

Prentice Hall *Environmental Science Guided Reading and Study Workbook*:

| Task | Topics |
|--|-----------------------|
| Studying Populations- <i>Guided Reading and Study</i> pp.13-14 | Populations |
| Interactions Among Living Things- <i>Guided Reading and Study</i> pp.15-16 | Populations |
| Biodiversity- <i>Guided Reading and Study</i> pp.41-43 | Populations, Survival |

GRADE 6DAA ANCHOR STATION**Animal Classification Review Game****Anchor Task 1****Overview**

This anchor task is to be used by students that need support after learning about classification in Lesson Sequence 1 Session 3 of the MCPS Grade 6 Diversity and Adaptations instructional guide.

Goals*Students should know*

organisms have similarities and differences.

Students should understand

observable features can be used to classify organisms.

Students should be able to

use information to classify mammals, reptiles, birds, amphibians, and insects.

Required Resources

- Access to Animal Classification game at link below:

http://www.teachersdomain.org/asset/lsp07_int_animalclass/

GRADE 6DAA ANCHOR STATION

Create a Dichotomous Key

Anchor Task 2

Overview

This anchor task is to be used by students as they are learning about dichotomous keys in Lesson Sequence 1 Session 13 of the MCPS Grade 6 Diversity and Adaptations instructional guide.

Goals

Students should know

organisms have similarities and differences.

Students should understand

observable features can be used to classify organisms.

Students should be able to

develop a dichotomous key to identify different organisms.

Required Resources

- Access to Dichotomous Key activity at link below:

<http://www.lnhs.org/hayhurst/ips/dichot/>

GRADE 6DAA ANCHOR STATION

Adaptation Rap or Song

Anchor Task 3

Overview

This anchor task is to be used by students as they are learning about adaptations in Lesson Sequence 3 Sessions 1-5 in the MCPS Grade 6 Diversity and Adaptations instructional guide.

Goals

Students should know

some organisms have a better chance of surviving than others.

Students should understand

adaptations help organisms and groups of organisms survive.

Students should be able to

communicate how an organism's adaptations help it survive.

Engage:

Show and discuss the adaptation rap at the link below. The lyrics are provided on the next page.

<http://www.youtube.com/watch?v=YX8VQIJVpTg>

Required Resources

- Adaptation rap video segment
- One Adaptation Rap or Song resource per student
- Music selections provided by teacher or students
- Computer(s) or audio player with headphones
- Blank paper
- Optional– Music composition paper

Extend

Have students make a music video.

GRADE 6DAA ANCHOR STATION

Camel Adaptation Song Lyrics

Teacher Reference

Chorus: Adapt Adap-ta-tion changes in the body to fit a location X2

Big pads on my feet

Better traction than a jeep

And another on my chest

So I can rest

On the sizzle and sands that fry like pan

I'm crossing the Sahara in my caravan



I'm the legendary dromedary

Four hundred pounds on my back in the desert I carry

Nothing to drink until the next oasis

Water is fresh so we never waste it

Chorus

Not a drop of rain it's arid extra dry

But I never get a grain of sand in my eye

If the wind blows gyro sand tornadoes

I've got better lids kids than J. Lo

Long and thick with a double lash

Close 'em fast built to last

continued

And the hump on my back

Got an extra tank

Like a savings bank packed with fat

The hump on my back is packed with fat X3

I won't say it again cause you know all that

Thick lips eat sticks and bones

Thorns and shrubs that others leave alone

Sometimes sip for the salty rind because the H2O

Is hard to find

My shaggy fur insulates

My body temps regulate

So I don't sweat and dehydrate

Live another day to procreate

Chorus

Repeat Chorus

GRADE 6DAA ANCHOR STATION**Adaptation Rap or Song****Anchor Task 3****Directions**

Work with your group to choose your music, write your lyrics, and prepare your performance.

Your group will perform for the class on_____.

Work as a group to answer the questions below.

1. Will your group write a rap or another type of song?
2. Will your group generate its own music or re-write the lyrics to an existing song?
3. How will your group work together to produce a rap or song?

Extend:

Make a music video for your rap or song. An example of an adaptation rap can be viewed at the link below:

<http://www.youtube.com/watch?v=YX8VQIJVpTg>

GRADE 6DAA ANCHOR STATION**Adaptation Poster Project****Anchor Task 4****Overview**

This anchor task is to be used by students as they are exploring animal adaptations in Lesson Sequence 3 Sessions 1-5 in the MCPS Grade 6 Diversity and Adaptations instructional guide.

Goals*Students should know*

some organisms have a better chance of surviving than others.

Students should understand

adaptations help organisms survive.

Students should be able to

illustrate how four organisms' adaptations help them survive.

Resources:

- One Adaptation Poster Project resource per student
- One Adaptation Poster Project Rubric per student
- Poster paper
- Markers and colored pencils

Extend

Have students illustrate different adaptations for all four organisms or encourage students to include organisms other than animals.

GRADE 6DAA ANCHOR STATION

Adaptation Poster Project

Anchor Task 4

Directions

Select a life function to research.

Identify different adaptations four organisms use to help them carry out the life function.

- 1.
- 2.
- 3.
- 4.

Life Functions

- Capture food
- Escape from predators
- Obtain oxygen
- Endure extreme temperatures
- Attract a mate
- Other: _____

Make a poster that illustrates the adaptations four different organisms use to carry out the life function. The adaptations you illustrate must be different for at least two out of the four organisms. Underline the adaptations you will illustrate and get teacher approval before you begin your poster.

Teacher Approval: _____




Escape From Predators Example:

1. **Red-eyed Tree Frog**– camouflage on green leaves during the day, flash coloration to distract predators, climbing to escape from predators
2. **Broad-headed Skinks**- flash coloration to attract predators to tail, lose tail to escape from predators, grow a new tail
3. **Box turtle**– hard shell that closes (shell too hard for many predators to eat)
4. **Wood mouse**– good hearing and vision senses to assess if situations are risky, seek shelter to hide from predators

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Adaptation Poster Project Rubric

Anchor Task 4

| | | | | |
|---|--|--|--|---|
|  <p>Research and Planning</p> | <p>4</p> <ul style="list-style-type: none"> Identifies 4 different adaptations four organisms use to carry out the same life function | <p>3</p> <ul style="list-style-type: none"> Identifies 3 different adaptations four organisms use to carry out the same life function | <p>2</p> <ul style="list-style-type: none"> Identifies 2 different adaptations four organisms use to carry out the same life function | <p>1</p> <ul style="list-style-type: none"> Identifies 1 adaptation four organisms use to carry out the same life function |
| <p>Poster</p> | <ul style="list-style-type: none"> Illustrates and accurately describes 4 different adaptations used by four organisms to carry out the life function | <ul style="list-style-type: none"> Illustrates and accurately describes 3 different adaptations used by four organisms to carry out the life function | <ul style="list-style-type: none"> Illustrates and accurately describes 2 different adaptations used by four organisms to carry out the life function | <ul style="list-style-type: none"> Illustrates and accurately describes 1 adaptation used by four different organisms to carry out the life function |

GRADE 6DAA ANCHOR STATION

Best Suited Animal

Anchor Task 5

Overview

This anchor task is to be used by students as they are learning about adaptation and survival in Lesson Sequence 3 Sessions 1-8 of the MCPS Grade 6 Diversity and Adaptations instructional guide.

Goals

Students should know

some organisms have a better chance of surviving than others.

Students should understand

best-suited organisms and groups of organisms survive.

some organisms survive and reproduce and others die or migrate to other locations when the environment changes.

Students should be able to

create the best suited animal for an environment.

Required Resources

- Access to Best Suited Animal task at link below:

http://coolschool.ca/TC2/TC2_projects/projects/TC2_09.htm

GRADE 6DAA ANCHOR STATION**Extinct Species Timeline****Anchor Task 6****Overview**

This anchor task is to be used by students as they are learning about populations in Lesson Sequence 2 Session 1 and adaptation and survival in Lesson Sequence 3 Sessions 1-8 of the MCPS Grade 6 Diversity and Adaptations instructional guide.

Goals*Students should know*

changes in the environment can be harmful or helpful.

some organisms have a better chance of surviving than others.

Students should understand

some organisms survive and reproduce and others die or migrate to other locations when the environment changes.

Students should be able to

develop a timeline that reflects the life span of an extinct species.

Required Resources

- One Extinct Species Timeline resource per student
- Colored pencils or markers
- Blank paper
- Lined paper
- Optional– Computers for students to develop electronic timelines

GRADE 6DAA ANCHOR STATION

Extinct Species Timeline

Anchor Task 6

Directions

Select an extinct species to research. _____

Get teacher approval.

Teacher Signature: _____

Document the entire life span of the species on the next page.

Use poster paper or software to create a timeline that reflects the life span of the species you researched. Be sure to include descriptions of the major influences that impacted the stability of the species.



The Carolina parakeet native to Maryland became extinct in the 1920's.

Image source http://www.lib.fit.edu/pubs/librarydisplays/Carolina_parakeet.jpg

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The Life of _____ From Beginning to End

GRADE 6DAA ANCHOR STATION**Maryland Native Species Research****Anchor Task 7****Overview**

This anchor task is to be used by students as they are learning about survival in Lesson Sequence 3 Sessions 6-8 in the MCPS Grade 6 Diversity and Adaptations instructional guide.

Goals*Students should know*

some organisms have a better chance of surviving than others.

Students should understand

best-suited organisms and groups of organisms survive.

some organisms survive and reproduce and others die or migrate to other locations when the environment changes.

Students should be able to

explain how a native Maryland species survives throughout the year.

Resources:

- One Maryland Native Species resource per student
- Various print and electronic resources
- Access to The Maryland Department of Natural Resources website at the link below:

<http://www.dnr.state.md.us/wildlife/wildacres.asp>

GRADE 6DAA ANCHOR STATION

Maryland Native Species Research

Anchor Task 7

Directions

Select a Maryland native species to research. You can use the Maryland Department of Natural Resources website at the link below to help you.

<http://www.dnr.state.md.us/wildlife/wildacres.asp>

Species: _____



Eastern Screech Owl

Photo by Tom Darden

<http://www.dnr.state.md.us/wildlife/waowls.asp>

Research the species that you selected. Write a paragraph to explain how your species survives throughout the year.

GRADE 6DAA ANCHOR STATION

Real Issue Debates

Anchor Task 8

Overview

This anchor task is to be used by students as they are preparing for the real issue debate in the Lesson Sequence 6 Session 1 in the MCPS Grade 6 Diversity and Adaptations instructional guide.

Goals

Students should know

various factors influence the size and stability of populations.

Students should understand

how those factors influence the size and stabilities of populations.

Students should be able to

research a global problem.

analyze and summarize data to identify trends and form a logical argument about a cause and effect relationship or a sequence of events.

support an argument with evidence.

Engage:

Show and discuss the CNN video segment at the link below:

<http://www.cnn.com/video/#/video/us/2008/03/28/natpkg.wolves.delist.cnn?iref=videosearch>

The video includes interviews of ranchers and environmentalists expressing their opinions about the gray wolf's endangered status. Click "off the endangered list" on the right side of the page to access the video.

An additional video on the gray wolf can be accessed on the CBS website at the link below:

http://www.cbsnews.com/video/watch/?id=3067925n%3fsource=search_video

Resources:

- Variety of electronic and print resources
- One Debating Real Issues Record Sheet resource page per student
- One class chart (see sample chart on teacher resource page) with sticky notes

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Name: _____

Debating Real Issues Record Sheet

Anchor Task 8

The Issue

In 1973, the federal government listed the gray wolf as endangered because its population dropped to a few hundred in Minnesota and nearly zero in the other continental 48 states. This protected the gray wolves from hunting and trapping. In addition, captive breeding released more gray wolves into the wild. In 1998, the number of gray wolves rose to approximately 2,380 wolves in Minnesota and Wisconsin. Today, the gray wolf population in Minnesota, Wisconsin and Michigan is approximately 3,980. Due to the steady increase in the gray wolf's population some believe that it is now safe to remove the species from the endangered list. Others support keeping the gray wolf protected. This decades long debate continues.

You will research the issue from the perspective of a:

_____ rancher who has lost animals to the gray wolf

_____ ecologist who supports the protection of the gray wolf

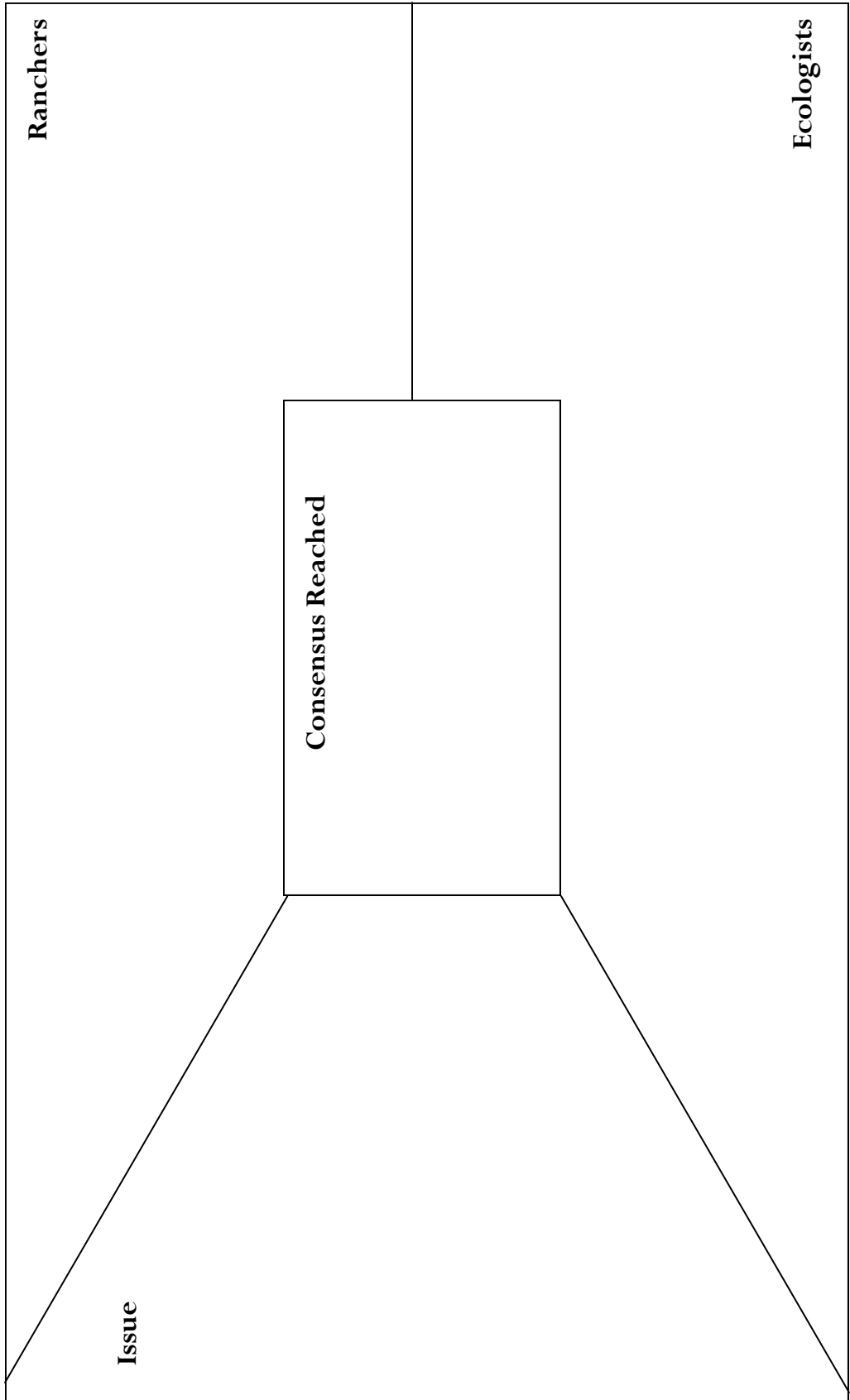
Research the Issue

- Gather information from at least three resources.
- Record ideas that support your assigned perspective.
- Post your ideas on the class chart.
- Be prepared to use your ideas to argue the issue from your perspective.
- Participate in our class debate on _____.

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Debating Real Issues Class Chart
Anchor Task 8
Teacher Resource Page



Debating Real Issues Anchor Task 8**Suggested Resources**

CBS Interactive Inc. bBNet: *Top 10 Reasons to Support Rancher Compensation - gray wolf program*

http://findarticles.com/p/articles/mi_m0ASV/is_/ai_55315090

CNN: *Gray Wolf: Still Endangered?*

<http://www.cnn.com/2008/TECH/science/03/28/gray.wolves/index.html#cnnSTCText>

CNN: *Gray Wolf Returns to Endangered Species List*

<http://www.cnn.com/2008/US/09/30/wolf.endangered.ap/index.html>

Defenders of Wildlife: *Gray Wolf*

http://www.defenders.org/wildlife_and_habitat/wildlife/wolf_gray.php

The Humane Society: *Gray Wolf*

http://www.hsus.org/wildlife/a_closer_look_at_wildlife/gray_wolf/

Minnesota Public Radio: *Farmers and Ranchers Upset with Wolf Ruling*

http://minnesota.publicradio.org/display/web/2008/10/06/wolves_reax/

National Geographic: *Thriving Gray Wolf May Come Off U.S. Endangered List*

http://news.nationalgeographic.com/news/2003/01/0122_030122_tvwolves.html

National Wildlife Federation: *Gray Wolf and the Endangered Species Act*

<http://www.nwf.org/Endangered/graywolf.cfm>

USA Today: *Gray Wolf to be Taken Off Endangered Species List*

http://www.usatoday.com/news/nation/2008-02-21-graywolves_N.htm

Washington Post: *New Debate on Wolf's 'Endangered' Label*

<http://www.washingtonpost.com/wp-dyn/content/article/2008/10/24/AR2008102402024.html>

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Please write each of your facts below.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

GRADE 6DAA ANCHOR STATION

TEACHER FEEDBACK

School _____

Date _____

Feedback about this document will be helpful to the Division of Accelerated and Enriched Instruction as new anchors are developed. Please complete this feedback form and return it to Kristi Cameron in the Division of Accelerated and Enriched Instruction, CESC Room 177.

Please indicate your feedback on the effectiveness by checking the appropriate box.

| Effectiveness Indicator | Strongly Agree | Agree | Dis-agree | Strongly Disagree |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. The organization of this document is user friendly. Comments: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. The suggested anchor tasks promote access and opportunities for all students. Comments: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. The anchor tasks support the MCPS science curriculum. Comments: <i>Provide an example of an task that worked well and one that could be improved.</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Additional Comments: