

It's A Dog's Life



Grades 4 – 6

Summer 2015

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Introduction

Rationale

During this weeklong unit, students are delving into the history of the canine breed and exploring its changes throughout the years with the focus of how culture has shaped the adaptation of this breed. Students must be able to use critical thinking and communication skills throughout this unit in order to decide for themselves if scientists and breeders have gone too far in manipulating this breed's genetics. The development of these skills is vital in order to live in a society where moral boundaries are being pushed to the limits on a daily basis and where the voice of just a few can make a change in this world. In conjunction with these skills, students are exposed to several disciplines of content knowledge. These include, but are not limited to, the areas of science and social studies. By exposing gifted students to several disciplines, they are better able to apply their knowledge from one content area into another. Lastly, the overall concept of adaptation lends itself into many topics, not just the adaptation of the canine breed. The children will evaluate how humans adapt in many situations. For example, how a geneticist can adapt to their work environment, using different tools, vocabulary, and exhibit appropriate work behaviors. Adaptation is a universal concept and the students will explore its implications in many ways. The overall goal of this unit is to help students reevaluate certain moral dilemmas that take place in our world concerning our canine friends. Since animals have no voice, students can learn to become their advocates.

Differentiation for Gifted Learners

A Dog's Life Unit was designed for gifted learners with many details in mind that would benefit the different learning styles of all students.

Process

For many gifted students they think in many different ways, so designed in the unit was opportunities for students to explore the content in many facets. During the TABA lesson, students are engaged in in-depth critical thinking as they must analyze the concept of adaptation in great depths by making groupings and then having to make regroupings. This forces students to look at particular items in a different light to make them similar to other items. While working through the Buner model, students must work within an open-ended problem in order to make generalizations using their inferencing skills. During a Socratic seminar lesson, students are highly engaged in in-depth critical thinking, as they analyze the concept of genetics and its effect on canines. Lastly, during a deep discussion using Kohlberg's Moral Dilemma, students are involved in in-depth discussion with their teammates as they discuss the different variables than can affect a moral decision. These process skills require

gifted students to think outside the box and use their knowledge and understanding in new and various ways.

Learning Environment

During the weeklong unit, students are given several opportunities to take control of their learning. They are allowed to explore the content on their own and facilitate their own discussion, as the teacher sits back and allows students to interact. This is not a time for the educator to “take a break”, but to allow their students explore their own background knowledge and apply it to the newly learned concepts at hand. When students are allowed to take control of their own learning and connect it to their already stored information, there is a better chance that the new knowledge will stay. Students are also engaged in several collaborative small groups and well as whole group discussions. During Kohlberg’s Moral Dilemma, students are forced into taking an opposite stance to their own, driving them to consider the validity of an argument that they may not agree with. All of these activities never put students into uncomfortable or unsafe environments. The key is that the educator establishes that their classroom is a place that all ideas are valued and that learning is the key to the future.

Product

All students are different when it comes to their levels of creativity, so during this unit there are opportunities for students to shine at what they excel at. During a group activity, students are given the opportunity to make their own “designer dogs.” The criteria were that groups must name their new breed, provide a picture and a description of their new canine breed. During the start of the assignment, students began divvying up tasks based on their strengths. Some students began the design and illustration process, while others began to research and organize information to present to the class. At the end of the unit, students were given their performance task to complete individually. The task required students to compose a letter to the Grey family that had to answer a set of criteria; students had three options on how to present their letters. Some students presented a typed or handwritten letter, while others chose to video or audio record their letters to the Grey family. By allowing students several options to choose from when designing a product, it engages them in that activity and an educator is more likely to see a student’s strengths begin to shine!

Goals and Outcomes

Content Goals

Students will learn:

- Within every population, variation exists within the inherited traits of the individuals.
- Individual organisms with certain traits (those that are “favored” in the environment) are more likely than others to survive.
- Within a species there is a variability of phenotypic traits leading to diversity among the organisms of the species. The greater the diversity, the greater the chances are for that species to survive during environmental changes.
- Students will know that researchers and scientists use specific tools and methods to gather knowledge
- Students will know that data collection reveals trends and adaptations
- Students will know that questions (problems) drive scientific method
- Students will know that scientists are required to follow a code of ethics when they are investigating and researching
- The responsibilities of citizenship in various nations around the world
- Factors that may negatively impact quality of life e.g. accumulating too much debt, not planning for the future, and spending more than is earned.
- How such factors as morals, ethics, and money can influence a person’s financial decision making.

Process Goals:

Students will be able to:

- Analyze the effects of a culture’s needs on the adaptations of features in animals
- Work collaboratively in a group
- Analyze the effects of genetic testing and crossbreeding has had on the various animals
- Evaluate the ethics used when crossbreeding animals and the physical effects on the organisms themselves
- Apply the scientific method to perform an effective observation
- Analyze data to create generalizations
- Identify and apply tools used by scientists
- Collect and organize data necessary to create inferences
- Evaluate the adaptations animals can undergo throughout different time periods and cultures

- Analyze the effects of a culture's needs on the adaptations of features in animals
- Work collaboratively in a group
- Analyze the effects of genetic testing and crossbreeding has had on the various animals
- Evaluate the ethics used when crossbreeding animals and the physical effects on the organisms themselves.
- Analyze the potential benefits and threats that genetic modification can have on animals
- Create arguments focused on discipline-specific content.
- Establish a position about a topic, acknowledge and distinguish the claim from opposing claims, and organize the evidence logically.
- Explain how personal financial decision-making impacts quality of life locally and globally.
- Analyze the effects of a culture's needs and wants on the adaptation of their own ethics and values
- Evaluate how factors such as money can influence a person to adapt their points of view.

Concept Goals:

Students will be able to:

- Assess how the power of influence is used as political and social weapons and its effects on the canine breed.
- Discuss the complexities involved in moral dilemmas and how to evaluate each variable separately and how it effects the decision(s) made.
- Use alternative forms of communication to deliver a well developed argument
- Analyze the various forms of adaptation, in the forms of forced or naturally occurring
- Understand the short-term and long-term consequences that scientists and breeders can have on the canine species and what new scientific information we have to combat these effects.

Assessment Plan

Students are given an authentic assessment for their final project. A rubric is used to assess their learning and understanding of the unit's culminating goals. A discussion of what traits the rubric expects of the students final work will let the students know what grade their level of work will receive.

Performance Task

The Grey family has decided it's time to add a new addition to their family. They have placed the following ad in the local newspaper looking for their "perfect pet."

Loving Family Looking for New 4-legged Family Member

Family is seeking to add a puppy to their loving home. Our home includes two hard-working parents and two adorable children, ages 6 and 10. We are looking for a puppy that is easily trainable, great with children, protective (but not over protective), can handle long hikes and the occasional run (short distances only), and can live comfortably in a smaller sized home. We would prefer the puppy to be less than 10 weeks old. If you have our newest member of the Grey family please contact Laura or Jim at JLgrey@yahoo.com.

As the new adoptions specialist at the local Durham Humane Society, it is your job to help seek "fur-ever homes" for your animals. One of your roles is not only to place the right animal for families entering the shelter, it is to also try and answer newspaper ads, like the Grey's, for people seeking animals. You have come across this ad and decided that you have a few options for the Grey family and it is your job to convince them to adopt a puppy instead of purchasing a dog from a breeder or a pet store. You will need to write a follow-up ad to the Grey family and it should include the following:

1. Tell the Grey family that you have the perfect dog for them! You may either choose a purebred dog that will fit their criteria or you may convince them that a mixed breed dog will still meet every need in their checklist. You will need to describe the dog and their temperaments to ensure that they meet all of the Grey's criteria.
2. Convince the Grey family that adoption is the best way to go and not to buy from a breeder or a pet store.
3. What is needed of the Grey family as well in order to adopt. For example, a home inspection, and time to observe the family with the adoptable dog. You are not just fulfilling the needs of the Grey family, but those of the dog as well.

The dogs of the Durham Humane Society need loving and fur-ever homes and it is your responsibility to not only place them in such homes, but to educate the public about the importance of adoption.

Analytical Rubric for Performance Task

Traits	Argument	Presentation	Grammar/Mechanics	Overall Appearance
Weights	50%	30%	10%	10%
4	I wrote a letter that contains a thorough and complete argument that addresses all 3 of the letter requirements and offers more educational advice to the Grey family.	The presentation of the letter is highly effective and delivers a message that is clear to the audience.	The letter contains no grammatical errors or misspellings.	The letter is neat, very easy to read, and organized very well.
3	I wrote a letter that contains a substantial argument that addresses all 3 of the letter requirements.	The presentation of the letter is generally effective and delivers a message that is mostly clear to the audience.	The letter contains 1-2 grammatical errors or misspellings.	The letter is generally neat, readable, and organization is present.
2	I wrote a letter that contains a partially developed argument that addresses only 1-3 of the letter requirements.	The presentation of the letter is somewhat effective and delivers a message that is occasionally clear to the audience.	The letter contains 3-4 grammatical errors or misspellings.	The letter is somewhat neat, some parts are readable, and has some organization.
1	I wrote a letter that contains an ineffective argument that addresses 1 or none of the letter requirements.	The presentation of the letter is ineffective and the message delivered to the audience is unclear.	The letter contains more than 4 grammatical errors or misspellings.	The letter is sloppy, difficult to read, and has no organization.
Total				

Total: _____

Comments:

Student's Work Samples

Dear Grey Family,

I have the most perfect dog for you! Her name is Dani and she is a pure breed American Water Spaniel. She fits all of your needs. American Water Spaniels are protective, easy to train, great with kids, and likes to go on runs and exercise. She is 7 weeks old and has a chocolate coat. These dogs are able to stay in an apartment all the way up to a mansion. She is a very active and this breed can live up to 10 - 13 years old. They weigh from 25 - 40 pounds. You should adopt a dog from The Durham Humane Society because when you get a puppy they are healthy and are not underweight. When one person adopts a dog, they are saving another dog's life. I would like you to come and observe Dani on Monday June 29th at 2117 E. Clarendon Suite #101 Durham, NC 27704. After you observe Dani, we would love to make an arrangement to inspect your home. Dani and I would be delighted if you would allow us to visit on Wednesday July 1st.

Sincerely,

The Durham Humane Society



← Movie recording of a student's written letter (Double click to play)

Lesson Plans

TEACHER NAME		Lesson #
<i>Melissa Madlangbayan</i>		1
MODEL	CONTENT AREA	GRADE LEVEL
Taba Concept Development	Science	6 th – 8 th
CONCEPTUAL LENS		LESSON TOPIC
Adaptation		Genetics
LEARNING OBJECTIVES <i>(from State/Local Curriculum)</i>		
8.L.4.2 Explain the relationship between genetic variation and an organism's ability to adapt to its environment.		
THE ESSENTIAL UNDERSTANDING <i>(What is the overarching idea students will understand as a result of this lesson?)</i>		THE ESSENTIAL QUESTION <i>(What question will be asked to lead students to "uncover" the Essential Understanding)</i>
Cultures influences adaptation		How can a culture influence adaption?
CONTENT KNOWLEDGE <i>(What factual information will students learn in this lesson?)</i>		PROCESS SKILLS <i>(What will students be able to do as a result of this lesson?)</i>
• Within every population, variation exists within the inherited traits of the individuals. • Individual organisms with certain traits (those that are "favored" in the environment) are more likely than others to survive. • Within a species there is a variability of phenotypic traits leading to diversity among the organisms of the species. The greater the diversity, the greater the chances are for that species to survive during environmental changes.		Students will be able to: • Analyze the effects of a culture's needs on the adaptations of features in animals • Work collaboratively in a group • Analyze the effects of genetic testing and crossbreeding has had on the various animals • Evaluate the ethics used when crossbreeding animals and the physical effects on the organisms themselves
GUIDING QUESTIONS <i>What questions will be asked to support instruction?</i> <i>Include both "lesson plan level" questions as well as questions designed to guide students to the essential understanding</i>		
Pre-Lesson Questions:	During Lesson Questions:	Post Lesson Questions:
• What is a "purebred" dog? • What are common uses for a dog? • What is adaptation? • What is culture? • What adaptations to previous breeds were made to create a new dog breed? (Example: a Labrador retriever was bred by crossbreeding a St. John's Water Dog, and a small water dog from Newfoundland)	• Why is adaptation of animals necessary for survival? • How can you label the groups you formed? • Why did you group the adaptations in that way? • How does genetics play a role in the development of a dog breed? • How does culture inspire adaptation of dog breeds?	• How do humans affect the adaptation of dogs? • How does a culture affect what characteristics a dog is bred for? • What is the impact of dog breeding? • Should inbreeding still be allowed to continue? Why or why not? • What other forms of adaptation are visible in today's society? How did these adaptations come to

What was the intent of crossbreeding for a particular dog? (Example: a Labrador retriever was bred to be bigger, stronger, a great swimmer, and to be used to retrieve ducks in the water for hunters)		light? - What are some of the likes/differences in dogs that came from adaptation? - What reasons would you offer to support scientists and dog breeders that they should be able to manipulate and adapt a dog's characteristics to suit their own purposes	
DIFFERENTIATION <i>(Describe how the planned learning experience has been modified to meet the needs of gifted learners. Note: Modifications may be in one or more of the areas below. Only provide details for the area(s) that have been differentiated for this lesson.</i>			
Content	Process	Product	Learning Environment
	Students engage in in-depth critical thinking, as they must analyze the concept of adaptation in great depths through grouping and regrouping.		Student-focused. Teacher acts as the facilitator while students work in collaborative groups based off of interests.

PLANNED LEARNING EXPERIENCES <i>(What will the teacher input? What will the students be asked to do? For clarity, please provide detailed instructions)</i>
Engage and Connect Students will break up into groups of 3-4 and pick a dog (stuffed animal). Attached to their dogs are the name of their dog breed, a brief bio of their dog and the practical uses of that breed. The students will then rotate in their groups and visit the other dog breeds and read their bios. The class will come together and students will share which breed they would pick and why. Teacher acts as a facilitator as students develop an overall awareness of why dog breeds have changed over the course of the last hundred years (i.e. for companionship, for work, for sport, etc.) Teacher will pose questions such as: - What is a "purebred" dog? - What are common uses for a dog? - What is adaptation? - What is culture? - What adaptations to previous breeds were made to create a new dog breed? (Example: a Labrador retriever was bred by crossbreeding a St. John's Water Dog, and a small water dog from Newfoundland) - What was the intent of crossbreeding for a particular dog? (Example: a Labrador retriever was bred to be bigger, stronger, a great swimmer, and to be used to retrieve ducks in the water for hunters) Explore Listing Students will go more in depth and explore the hundreds of varieties of dog breeds that are recognized in the United States by the American Kennel Club (AKC). In order for students to focus and understand the same information have students only research the top <u>10</u> breeds on AKC list (research on the other breeds can be done as a separate activity). As the children browse through the dog breeds they will be expected to make a list of 1) characteristics of dogs 2) words/phrases that relate to the adaptation of dogs 3) words/phrases that relate to the adaptation of dogs due to the culture they were raised in. http://www.akc.org/news/the-most-popular-breeds-of-2014/

- Students will share their lists while teacher compiles a list on the board.

Explain

Grouping and Labeling

- Students will create smaller lists based on perceived similarities (within their small group of approximately 3-4 students). The groups of students will work together to decide which dogs will be placed in groups together based off of some similar characteristic(s). Students will be provided the following rules: at least 3 different groups, at least 3 items in a group, a breed of dog cannot go into two different groups.
- The teacher will walk about the classroom checking in with groups. The teacher will guide students as necessary with questions, but will allow students to come to their own conclusions. As students are done placing their dogs into varying categories, the teacher will ask the groups to now place labels or headings on each group they have created. Groups will share the groupings and why they chose to place their breeds in each varying category. The teacher will ask the students to identify similarities and difference amongst the classes' different groupings.
- As students discuss their groupings and labeling, the teacher will interject with discussion questions as they come up:
 - *Why is adaptation of animals necessary for survival?*
 - *How can you label the groups you formed?*
 - *Why did you group the adaptations in that way?*
 - *How does genetics play a role in the development of a dog breed?*
 - *How does culture inspire adaptation of dog breeds?*

Elaborate

Subsuming, Regrouping, Renaming

- Students will be challenged to regroup the dog breeds into different categories. Teacher will tell the students that they must create new category headings. The following rules will be given to ensure critical thinking skills are utilized in this activity: items can be used again, categories must be new, and each category needs at least three items. The teacher will remind students that the categories must be based on some aspect related to the adaptation of the dog.
- The teacher will ask all groups to share their categories and can use a wide variety of informal and formal assessments strategies.
- As discussions come to a close, the teacher will interject with discussion questions to help sum up discussions:
 - *How do humans affect the adaptation of dogs?*
 - *How does a culture affect what characteristics a dog is bred for?*
 - *What is the impact of dog breeding?*
 - *Should inbreeding still be allowed to continue? Why or why not?*
 - *What other forms of adaptation are visible in today's society? How did these adaptations come to light?*
 - *What are some of the likes/differences in dogs that came from adaptation?*

Evaluate:

- The teacher will conclude the lesson by asking the students to explain the relationship between culture and adaptation. Students will then be given the question, "*What reasons would you offer to support or non support scientists and dog breeders that they should be able to manipulate and adapt a dog's characteristics to suit their own purposes?*" Students will answer this question in a paragraph defending their position based off today's lesson and newly acquired knowledge. Students will share and turn in their responses at the end of the lesson (15-20 minutes).

*Introduce Performance task for the week

TEACHER NAME		Lesson #
<i>Melissa Madlangbayan</i>		2
MODEL	CONTENT AREA	GRADE LEVEL
Bruner	Scientific Investigation	6-8
CONCEPTUAL LENS		LESSON TOPIC
Adaptation		Researchers use specific tools and methods
LEARNING OBJECTIVES (from State/Local Curriculum)		
Science: - Describe, explain, and predict the natural phenomenon - Engage in non-technical conversations about the validity of conclusions - Identify scientific issues underlying national and local decisions - Pose explanations based on evidence derived from one's own work 4.L.1: Understand the effects of environmental changes, adaptations, and behaviors that enable animals to survive in changing habitats		
THE ESSENTIAL UNDERSTANDING (What is the overarching idea students will understand as a result of this lesson?)		THE ESSENTIAL QUESTION (What question will be asked to lead students to "uncover" the Essential Understanding?)
Culture Influences Adaptation		How can a culture influence adaptation?
CONTENT KNOWLEDGE (What factual information will students learn in this lesson?)		PROCESS SKILLS (What will students be able to do as a result of this lesson?)
- Students will know that researchers and scientists use specific tools and methods to gather knowledge - Students will know that data collection reveals trends and adaptations - Students will know that questions (problems) drive scientific method - Students will know that scientists are required to follow a code of ethics when they are investigating and researching		- Apply the scientific method to perform an effective observation - Analyze data to create generalizations - Identify and apply tools used by scientists - Collect and organize data necessary to create inferences - Evaluate the adaptations animals can undergo throughout different time periods and cultures
GUIDING QUESTIONS What questions will be asked to support instruction? Include both "lesson plan level" questions as well as questions designed to guide students to the essential understanding		
Pre-Lesson Questions:	During Lesson Questions:	Post Lesson Questions:
- What do scientists do? - What are spaces in which scientists might work? - What fields may scientists specialize their research in? - What rules impact how scientists work? - What might scientists need to do to stay safe? - What tools might scientists use?	- What methods did you observe the scientists in the video using? - What kinds of data did the scientists record? - What characteristics did the scientists possess? - What are some of the tools they used? - How did the tools/clothing change according to the	- What did you learn about being a scientist? - What strategies/method did you use during your observation? - How did you reach conclusions from your observations? - How important is observation when working as a scientist?

• <i>What characteristics might scientists possess in their profession?</i> • <i>How has the culture of geneticists influenced how these geneticists act, work, dress, etc."</i>	• <i>environment(s) the scientists worked in?</i> • <i>How might the tools/clothing change according to a different culture? For example, an archeologist.</i>	• <i>What adaptations did you notice as you moved through each station?</i> • <i>How do you believe a culture influencde the adaptaiton of dogs?</i> • <i>How has the culutre of being a scientist influenced adapation of the scientists themselves?</i>	
DIFFERENTIATION <i>(Describe how the planned learning experience has been modified to meet the needs of gifted learners. Note: Modifications may be in one or more of the areas below. Only provide details for the area(s) that have been differentiated for this lesson.</i>			
Content	Process	Product	Learning Environment
	Students work with an open-ended problem solving experience. They will be using inference to create generlizations.		

PLANNED LEARNING EXPERIENCES

(What will the teacher input? What will the students be asked to do? For clarity, please provide detailed instructions)

Engage and Connect - This phase focuses on piquing students' interest and helping them access prior knowledge. This is the introduction to the lesson that motivates or hooks the students.

As students enter the room, the teacher will be dressed in a lab coat, goggles, and a notebook in hand. Students will be given the Scientist Activity sheet (attached). On the sheet the students list short answers to the following questions:

- **What do scientists do?**
- **What are spaces in which scientists might work?**
- **What fields may scientists specialize their research in?**
- **What rules impact how scientists work?**
- **What might scientists need to do to stay safe?**
- **What tools might scientists use?**
- **What characteristics might scientists possess in their profession?**
- **What various types of scientists are there?**

After 5-8 minutes of listing, the students are asked to share their thoughts/ideas about each question. The teacher will record responses on the board for class to visualize.

Explore - In this phase, the students have experiences with the concepts and ideas of the lesson. Students are encouraged to work together without direct instruction from the teacher. The teacher acts as a facilitator. Students observe, question, and investigate the concepts to develop fundamental awareness of the nature of the materials and ideas.

The teacher introduces the video, *Saving the Sapsaree*. Students are instructed to view the video of a geneticist in South Korea who fought to save a dying breed of dog in South Korea. They are to focus on how the geneticists act, what they are doing, various tools they use, and some of the different environments they work in.

<http://www.reuters.com/video/2011/10/18/beloved-dog-breed-saved-by-south-korean?videoid=223645759>

After the video, students are referred back to the original set of pre-lesson questions. Teacher asks, "What other things can we add to our original list." or "How has the culture of geneticists influenced how this geneticists acts, works, etc."

Students are divided into groups, no more than 4-5 students. The teacher tells the students that they are now scientists and about to observe different animals over time. They will observe changes over time as they move through several stations and create generalizations about each animal in that particular time.

The teacher sets up five different stations. In each station there is a different animal, but it has been changed and adapted over time. The simulation starts with a wolf, then a dog appears, then a different dog with similar and different features from the last to represent the adaptations of a dog over time periods. ** (A visual model of the stations and each animal represented in each one is attached)

Students are provided: paper and pencil to diagram and write down what they see, journals to record what they see and what they think these observations mean about the animal in this community. Students rotate from group to group. Students record their observations about the animal and their generalizations about what the animal might be doing in the community, what is the animal's specific purpose and why they have come to these conclusions. After each station, the group will meet to discuss their findings and make generalizations.

Explain - Students communicate what they have learned so far and figure out what it means. This phase also provides an opportunity for teachers to directly introduce a concept, process, or skill to guide students toward a deeper understanding.

After students have completed all stations, the teacher provides time for all groups to have one final meeting to draw conclusions based on their observations at **all** stations. The teacher asks the students to report their findings.

Each group will report their conclusions and reasons for their conclusions. Students are encouraged to discuss conclusions of other groups and to contribute by questioning and adding their own conclusions.

Post-lesson questions are posed by the teacher and discussed as a group orally. Answers are discussed and elaborated upon.

- **What did you learn about being a scientist?**
- **What strategies/method did you use during your observation?**
- **How did you reach conclusions from your observations?**
- **How important is observation when working as a scientist?**
- **What adaptations did you notice as you moved through each station?**
- **How do you believe culture influenced the adaptation of every dog?**

Elaborate —Allow students to use their new knowledge and continue to explore its implications. At this stage students expand on the concepts they have learned, make connections to other related concepts, and apply their understandings to the world around them in new ways

Break students into different groups of about 4-5 students and give each group chart paper and markers. Students are to create their own “designer dog” for today’s classroom. The dog they create can have similar features of other breeds, but must have new adaptations that make their dog unique to today’s world. Each group must present 1) the name of the new dog breed 2) a picture 3) a brief description of the dog and the purpose of the dog (i.e. working, sport, toy, etc.)

Once groups are finished they are to present their dog breed to the class. After all groups have presented, all students are given post-it notes and take a gallery walk of their “designer dog” breeds. They are to post at least 1-2 comments for each designer dog breed (comments can be questions, concerns, approval, etc.)

Evaluate: *This phase assesses both learning and teaching and can use a wide variety of informal and formal assessment strategies.*

As an exit ticket out the door, students are provided an index card to answer the following question:

- *How has the culture of being a scientist influenced adaptation of the scientists themselves?*

*Review performance task again

TEACHER NAME		Lesson #
<i>Melissa Madlangbayan</i>		3
MODEL	CONTENT AREA	GRADE LEVEL
Socratic Seminar		6-8
CONCEPTUAL LENS		LESSON TOPIC
Adaptation		Genetics
LEARNING OBJECTIVES (from State/Local Curriculum)		
8.L.4.2 Explain the relationship between genetic variation and an organism's ability to adapt to its environment.		
THE ESSENTIAL UNDERSTANDING (What is the overarching idea students will understand as a result of this lesson?)		THE ESSENTIAL QUESTION (What question will be asked to lead students to "uncover" the Essential Understanding)
Culture Influences Adaptation		How can a culture influence adaptation?
CONTENT KNOWLEDGE (What factual information will students learn in this lesson?)		PROCESS SKILLS (What will students be able to do as a result of this lesson?)
- Within every population, variation exists within the inherited traits of the individuals. - Individual organisms with certain traits (those that are "favored" in the environment) are more likely than others to survive. - Within a species there is a variability of phenotypic traits leading to diversity among the organisms of the species. The greater the diversity, the greater the chances are for that species to survive during environmental changes		Students will be able to: - Analyze the effects of a culture's needs on the adaptations of features in animals - Work collaboratively in a group - Analyze the effects of genetic testing and crossbreeding has had on the various animals - Evaluate the ethics used when crossbreeding animals and the physical effects on the organisms themselves. - Analyze the potential benefits and threats that genetic modification can have on animals
GUIDING QUESTIONS What questions will be asked to support instruction? Include both "lesson plan level" questions as well as questions designed to guide students to the essential understanding		
Pre-Lesson Questions:	During Lesson Questions:	Post Lesson Questions:
- What is a dog breeder and what do they do? - What is the purpose of animal shelters? - What are ethics and where does a person develop his/hers? - Do you believe ethics should be involved when breeding/creating dogs? Why or why not? - What does this picture say to you? What did you think the creator was trying to	- What are your concerns about scientists genetically modifying dogs in order to repair the damage done to them through crossbreeding and inbreeding?" What is the function of genetically modifying genes of dogs? - What types of precautions could be put in place to ensure ethical dog breeding could continue with genetic modification? - What information could you	- How did it feel being an observer as oppsed to being a participant during the seminars? - Was there a time when you didn't agree with a peer's viewpoint, but after they used examples from the text, you were then convinved? When did this happen for you? - Did you have a viewpoint that still couldn't be persuaded by a classmate?

say? • How does culture impact the ethics of dog breeding? • How has adaptation been influenced by culture? • What adaptations do dogs need in order to make it in a home/shelter/wild? • Why are these adaptations necessary?	use to support dog breeders? Or to support local animal shelters? • What is your opinion on allowing genetic modification to help heal disorders of dogs? • How has a culture helped influence breeding a dog for certain traits or characteristics?	What viewpoint and why weren't you persuaded? • What new information have you learned from this seminar and how can you use it for the future? • Which do you believe is more harmful to dogs any why: genetically modifying their genes or cross-breeding of dogs for specific genes?	
DIFFERENTIATION <i>(Describe how the planned learning experience has been modified to meet the needs of gifted learners. Note: Modifications may be in one or more of the areas below. Only provide details for the area(s) that have been differentiated for this lesson.</i>			
Content The text in this lesson is complex and written for an older audience.	Process Students engage in in-depth critical thinking, as they must analyze the concept of genetics in great depths through open-ended discussion questions.	Product	Learning Environment Student-led discussions with teacher acting only as a facilitator of discussions.

PLANNED LEARNING EXPERIENCES

(What will the teacher input? What will the students be asked to do? For clarity, please provide detailed instructions)

Engage and Connect - This phase focuses on piquing students' interest and helping them access prior knowledge. This is the introduction to the lesson that motivates or hooks the students.

As students arrive to class, placed upon the board will be the following picture for them to look at and ponder for a few minutes:



Students do not have to write down any answers, they just need to look at the picture and its caption and think about what the creator is trying to convey to people.

Teacher will begin with Pre-Lesson Questions to start discussion:

- What is a dog breeder and what do they do?
- What is the purpose of animal shelters?
- What are ethics and where does a person develop his/hers?
- Do you believe ethics should be involved when breeding/creating dogs? Why or why not?
- What does this picture say to you? What did you think the creator was trying to say?

Explore - In this phase, the students have experiences with the concepts and ideas of the lesson. Students are encouraged to work together without direct instruction from the teacher. The teacher acts as a facilitator. Students observe, question, and investigate the concepts to develop fundamental awareness of the nature of the materials and ideas.

Teacher will hand out the following text (if technology allows students can pull-up the article on their tablets/ipads/laptops).

<https://www.thedodo.com/community/dogsandethics/the-case-for-genetically-modif-590835164.html>

While reading over the text, students are encouraged to:

- Read the material closely
- Make notes (margin notes, post-its, etc.)
- Underline important notes
- Form **open-ended** questions related to the text. (give examples for students)

Teacher will give students a quick picture on annotating note taking.

Annotations

?	I don't quite understand.
!	Surprising fact
—	Important detail
○	Unfamiliar Vocabulary
☆	Main Idea



<http://1.bp.blogspot.com/-cvGixWO2YsY/U8cw18D2vZl/AAAAAAAAAZi8/V-coSVutzyA/s1600/Slide4.JPG>

(Students are given a pen/pencil, a highlighter, and post-its notes) Give students 15-20 minutes to read and re-read over the text, take notes, and form their own open-ended questions.

When it appears that all students have had a chance to make notes, have students set up for the Socratic seminar. The teacher will place on the board the slide that states the “Participation Rules” and “Proper Responses”. The teacher will talk about the proper ways to communicate and facilitate this discussion with the class. Once the students understand, the seminar may begin.

Chairs are placed in two circular formations, 10 seats on the inside and 10 on the outside. Teacher will explain to the students that *everybody* will get a chance to participate in this discussion. Each discussion will only involve the 10 people on the inside of the circle, while the other 10 students on the outside will be observers and can take notes of the discussions around them, but they CANNOT get involved in the discussion.

Explain - *Students communicate what they have learned so far and figure out what it means. This phase also provides an opportunity for teachers to directly introduce a concept, process, or skill to guide students toward a deeper understanding.*

With the first group of 10 students inside the circle, the teacher will start the discussion with the following question: “*What are your concerns about scientists genetically modifying dogs in order to repair the damage done to them through crossbreeding and inbreeding?*”

Students begin to respond to the opening question. They examine their reading to support answers to the question, citing specific passages from the text. Students should clarify their viewpoints and defend statements made, using examples from the text. Students should also be encourage to paraphrase other students for clarification and ask additional questions to continue deeper and deeper exploration of the text and one another’s thinking. The opening question should only be a starting point; it should be a catalyst that moves students to additional questions.

During the seminar, the teacher will act as a facilitator, when needed, to remind students of the dialogued guidelines, direct them back to the text, or offer a personal viewpoint about the text. The teacher is NOT the leader; she is the co-learner, participant, and occasional moderator/facilitator. The goal is to *support* in maintaining their own dialogue.

If dialogue comes to a standstill at any point, teacher may interject any of the following during lesson questions to help restart conversation:

- What is the function of genetically modifying genes of dogs?
- What types of precautions could be put in place to ensure ethical dog breeding could continue with

genetic modification?

- What information could you use to support dog breeders? Or to support local animal shelters?
- What is your opinion on allowing genetic modification to help heal disorders of dogs?
- How has a culture helped influence breeding a dog for certain traits or characteristics?

Group 1 will be given 10-15 minutes to participate in their Socratic seminar. Teacher will then have students switch roles, with the outside group coming to the inside of the circle and vice versa. Teacher will remind students of participation rules and proper responses.

Group 2 will be given 10-15 minutes to complete their Socratic seminar. Teacher will follow the same rules and procedures as the first group.

Elaborate —Allow students to use their new knowledge and continue to explore its implications. At this stage students expand on the concepts they have learned, make connections to other related concepts, and apply their understandings to the world around them in new ways

Debriefing: Allow all students to finalize any notes and write down any new information they learned or took into consideration from the seminar.

This time is for free discussion of anything that happened during the seminar. This can be anything from new information they took away, changing of their original opinions and why, or questions they still have after reading the article and discussing these with their peers. Remind students that there were right or wrong answers to any of the questions posed in this seminar, the point is to support an open conversation between peers about a controversial topic of today's society. Also, ask students about particular points/feelings about when they were *observers* in comparison to being *participants* during the seminar.

Teacher can use any of the post-lesson questions to help students debrief:

- *How did it feel being an observer as opposed to being a participant during the seminars?*
- *Was there a time when you didn't agree with a peer's viewpoint, but after they used examples from the text, you were then convinced? When did this happen for you?*
- *Did you have a viewpoint that still couldn't be persuaded by a classmate? What viewpoint and why weren't you persuaded?*
- *What new information have you learned from this seminar and how can you use it for the future?*

Evaluate: This phase assesses both learning and teaching and can use a wide variety of informal and formal assessment strategies.

As an exit ticket out the door the students are given an index card to answer the following question:

- Which do you believe is more harmful to dogs any why: genetically modifying their genes or cross-breeding and inbreeding of dogs for specific genes?

Students should be given 5-10 minutes to complete their exit ticket.

****Introduce dilemma for following day**

TEACHER NAME		Lesson #
<i>Melissa Madlangbayan</i>		4
MODEL	CONTENT AREA	GRADE LEVEL
Kohlberg's Moral Dilemma	Science	6 th - 8 th
CONCEPTUAL LENS		LESSON TOPIC
Adaptation		Ethics
LEARNING OBJECTIVES (from State/Local Curriculum)		
7.C & G.1.3: Compare the requirements for (e.g. age, gender, legal and economic status) and responsibilities of citizenship under various governments in modern societies. 7.E.1.4: Explain how personal financial decision-making impacts quality of life (e.g. credit, savings, investing, borrowing, and giving).		
THE ESSENTIAL UNDERSTANDING		THE ESSENTIAL QUESTION
(What is the overarching idea students will understand as a result of this lesson?)		(What question will be asked to lead students to "uncover" the Essential Understanding?)
Culture Influences Adaptation		How can a culture influence adaptation?
CONTENT KNOWLEDGE		PROCESS SKILLS
(What factual information will students learn in this lesson?)		(What will students be able to do as a result of this lesson?)
- The responsibilities of citizenship in various nations around the world - Factors that may negatively impact quality of life e.g. accumulating too much debt, not planning for the future, and spending more than is earned. - How such factors as morals, ethics, and money can influence a person's financial decision making.		Students will be able to: - Create arguments focused on discipline-specific content. - Establish a position about a topic, acknowledge and distinguish the claim from opposing claims, and organize the evidence logically. - Explain how personal financial decision-making impacts quality of life locally and globally. - Analyze the effects of a culture's needs and wants on the adaptation of their own ethics and values - Evaluate how factors such as money can influence a person to adapt their points of view.
GUIDING QUESTIONS		
What questions will be asked to support instruction? Include both "lesson plan level" questions as well as questions designed to guide students to the essential understanding		
Pre-Lesson Questions:	During Lesson Questions:	Post Lesson Questions:
- Where does a person develop their ethics/moral value? - How can money, laws, or greed influence a person's ethics?	- What factors should the Watsons consider when deciding to adopt a puppy from the shelter? Why are these factors important? - How important should financial decision making be involved in the Watson's decision? - What are the pros and cons for purchasing the minivan puppy?	- Why did I ask you to take an opposite stance to your original dilemma response? - Now what do you think the Watsons should do? - What is the most important reason for this action? - How can a culture influence adaptation of one's values, morals, and even adaptation of

	• <i>What are the pros and cons for adopting the dog from a shelter?</i> • <i>Now what do you think the Watsons should do?</i> • <i>What is the most important reason for this action?</i> • <i>What should the lady in the minivan do if she cannot sell her puppies?</i> • <i>What must a local animal shelter do if they reach capacity and cannot take in any more dogs?</i>	<i>dog breeds?</i>	
DIFFERENTIATION <i>(Describe how the planned learning experience has been modified to meet the needs of gifted learners. Note: Modifications may be in one or more of the areas below. Only provide details for the area(s) that have been differentiated for this lesson.</i>			
Content	Process	Product	Learning Environment
	Students engage in in-depth critical thinking and engage in various group discussions while examining a moral dilemma.		Students are forced into taking an opposite stance to their original response to a dilemma, forcing them to consider the validity of both sides of an argument.

PLANNED LEARNING EXPERIENCES

(What will the teacher input? What will the students be asked to do? For clarity, please provide detailed instructions)

Engage and Connect - This phase focuses on piquing students' interest and helping them access prior knowledge. This is the introduction to the lesson that motivates or hooks the students.

***Students are given the following prompt the day before to take home and read. They are to return in the morning with their responses to what they would do if placed in this dilemma.**

The Dilemma: The Watson family has decided it's time to add to their family. The two children, James and Sophia have begged and begged and are ready to take on the responsibility of a puppy. Money is limited and the parents have decided on a budget of no more than \$100 to purchase a dog. They have been to their local animal shelter and there are no new puppies available, but dogs there are as young as 1-2 years old. The adoption fee of \$100 will take care of all fees, shots, and any necessary spaying or neutering. Although the children won't get a brand new puppy, the family can get a reliable, healthy one, but the adoption fee takes their entire budget.

However, while shopping at their town's mall, the Watson parents are approached by a woman selling puppies out of her minivan. The woman seems in a hurry to sell the puppies, does not offer any type of paperwork or records, and the puppies seem underweight. The mysterious woman is selling her puppies for the low price of \$30 to take them off her hands. The Watsons have their suspicions that these puppies are from a local puppy mill. They consider purchasing the possible puppies from the puppy mill, in order to save money and give their kids a dog they want, a cute and cuddly puppy! If the puppies aren't sold, what will happen to them anyway?

Students can write down their responses into their notebooks or just be ready to share them when they return the next day.

The Next Day:

Displayed on the board will be the following two images:



"I Need a good home!"



"Adopt me!"

Before students take out their responses to the dilemma, the teacher will ask the students, "Where does a person develop their ethics/moral value? How can money, laws, or greed influence a person's ethics?" After a small discussion to set up the day's lesson, the students can now take out their responses to the dilemma.

Explore - In this phase, the students have experiences with the concepts and ideas of the lesson. Students are encouraged to work together without direct instruction from the teacher. The teacher acts as a facilitator. Students observe, question, and investigate the concepts to develop fundamental awareness of the nature of the materials and ideas.

As a class, identify the two sides or issues involved in this dilemma. Ask the class to answer or identify the following:

- Summarize the events
- Identify the principal characters
- Describe/Identify the alternatives open to the protagonist

Now, ask the students to pick a stance on the issue and list 2-3 reasons why they chose that side, in their notebooks. Allow students 5-10 minutes to complete this activity. Ask the students to raise their hands to show which alternative they chose, to see if the class is split or there is a majority favoring one alternative.

Then, divide the students into groups of 3-4, trying to have every group with an equal representation of each choice in the dilemma. For example, 2 students for adopting and 2 students for buying the minivan puppy in the same group. However, if there is a majority of students favoring one choice, then you can group by similarities in reasoning. Have each group decide which alternative they chose and their best 2-3 reasons that support their choice. Allow students 10-15 minutes to complete this group activity.

As students are engaging in their group discussion, teacher will go around listening to their students reasoning and possibly encouraging students to find research and information to help back up their decision(s).

Explain - *Students communicate what they have learned so far and figure out what it means. This phase also provides an opportunity for teachers to directly introduce a concept, process, or skill to guide students toward a deeper understanding.*

The class will come back together and now will partake in a full class discussion. The teacher will arrange the class into a circle so that all students can see each other when discussing the dilemma and encourage peer-interactions. Ask the students the following question(s) to start discussions:

- *What factors should the Watsons consider when deciding to adopt a puppy from the shelter? Why are these factors important?*
- *How important should financial decision making be involved in the Watson's decision?*
- *What are the pros and cons for purchasing the minivan puppy?*
- *What are the pros and cons for adopting the dog from a shelter?*
- *Now what do you think the Watsons should do? What is the most important reason for this action?*
- *What should the lady in the minivan do if she cannot sell her puppies?*
- *What must a local animal shelter do if they reach capacity and cannot take in any more dogs?*

Ask the class discussion begins to take off and the children are discussing the questions, the teacher wants to interject questions that 1) clarify their responses 2) enhances student interaction 3) focus on the dilemma with regard to all of the moving parts (i.e. the local animal shelter and its purpose, laws concerning dog breeding and selling, financial decision making, etc.) 4) perspective-taking and 5) proof of reasoning and current moral development.

Elaborate —*Allow students to use their new knowledge and continue to explore its implications. At this stage students expand on the concepts they have learned, make connections to other related concepts, and apply their understandings to the world around them in new ways*

Students will now take a stance *opposite* to their original stance. The teacher will split the class in half, one group for adopting and one group for buying the minivan puppy. Each group is to come up with 2-3 defining reasons as to why the Watson should either adopt or buy. At the end of this exercise the teacher will ask, “*Why do you think I asked you to take an opposite stance?*” Students should be able to consider the validity of both sides and use their critical thinking skills to evaluate the pros and cons that must go into making decisions such as the Watsons dilemma. Allow students to look over their original dilemma response, think about their discussion with classmates, and their feelings about taking an opposite stance. Then, pose the questions for the class:

- *Now what do you think the Watsons should do?*
- *What is the **most** important reason for this action?*
- *How can a culture influence adaptation of one's values, morals, and even adaptation of dog breeds?*

Evaluate: *This phase assesses both learning and teaching and can use a wide variety of informal and formal assessment strategies.*

(Performance Task)

Students will now return to their seats and the teacher will ask if after our discussion, did you change your point of

view? What influenced you to change your view? What didn't persuade you to change your mind? Teacher will now post the class' performance task on the board:

The Grey family has decided it's time to add a new addition to their family. They have placed the following ad in the local newspaper looking for their "perfect pet."

Loving Family Looking for New 4-legged Family Member

Family is seeking to add a puppy to their loving home. Our home includes two hard-working parents and two adorable children, ages 6 and 10. We are looking for a puppy that is easily trainable, great with children, protective (but not over protective), can handle long hikes and the occasional run (short distances only), and can live comfortably in a smaller sized home. We would prefer the puppy to be less than 10 weeks old. If you have our newest member of the Grey family please contact Laura or Jim at JLgrey@yahoo.com.

As the new adoptions specialist at the local Durham Humane Society, it is your job to help seek "fur-ever homes" for your animals. One of your roles is not only to place the right animal for families entering the shelter, it is to also try and answer newspaper ads, like the Grey's, for people seeking animals. You have come across this ad and decided that you have a few options for the Grey family and it is your job to convince them to adopt a puppy instead of purchasing a dog from a breeder or a pet store. You will need to write a follow-up ad to the Grey family and it should include the following:

- 4. Tell the Grey family that you have the perfect dog for them! You may either choose a purebred dog that will fit their criteria or you may convince them that a mixed breed dog will still meet every need in their checklist. You will need to describe the dog and their temperaments to ensure that they meet all of the Grey's criteria.*
- 5. Convince the Grey family that adoption is the best way to go and not to buy from a breeder or a pet store.*
- 6. What is needed of the Grey family as well in order to adopt. For example, a home inspection, and time to observe the family with the adoptable dog. You are not just fulfilling the needs of the Grey family, but those of the dog as well.*

The dogs of the Durham Humane Society need loving and fur-ever homes and it is your responsibility to not only place them in such homes, but to educate the public about the importance of adoption.

Unit Resources

Lesson 1 Materials

- Ice Breaker Activity:
<https://drive.google.com/a/dpsnc.net/file/d/0BxliCLhFwvEXN3FwcFhvdVdmOXc/view?usp=sharing>
- PowerPoint:
<https://drive.google.com/a/dpsnc.net/folderview?id=0BxliCLhFwvEXfnNyX1YzNGdnUmEyblRta3dCZUtPeUdnajJVV0IDYWY5YzdCRIBGS0E1REE&usp=sharing>
- Engage Activity (Brief Canine Bios):
<https://drive.google.com/a/dpsnc.net/file/d/0BxliCLhFwvEXYUIDNDNwUEpGUDQ/view?usp=sharing>

Lesson 2 Materials

- PowerPoint:
<https://drive.google.com/a/dpsnc.net/file/d/0BxliCLhFwvEXVFJrMGlXU3JUdk0/view?usp=sharing>
- Scientist Activity:
<https://drive.google.com/a/dpsnc.net/file/d/0BxliCLhFwvEXV1lhQi1uc3VJNUk/view?usp=sharing>
- Scientist Video: <http://www.reuters.com/video/2011/10/18/beloved-dog-breed-saved-by-south-korean?videoId=223645759>
- Bruner Stations:
<https://drive.google.com/a/dpsnc.net/file/d/0BxliCLhFwvEXZztQzJDcE11bDQ/view?usp=sharing>

Lesson 3 Materials

- PowerPoint:
<https://drive.google.com/a/dpsnc.net/file/d/0BxliCLhFwvEXdVF4TnJYNHpldJA/view?usp=sharing>
- Text for students to read: <https://www.thedodo.com/community/dogsandethics/the-case-for-genetically-modif-590835164.html>

Lesson 4 Materials

- PowerPoint:
<https://drive.google.com/a/dpsnc.net/file/d/0BxliCLhFwvEXSFhLTlhObmo2ZEK/view?usp=sharing>
- Performance Task:
<https://drive.google.com/a/dpsnc.net/file/d/0BxliCLhFwvEXVU93YndCLTdDX0U/view?usp=sharing>