

The Steps to Race in America

A Grade 9 Unit for Understanding the Development of the Construct of Race

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DESCRIPTION

This unit is one part of a nine-month interdisciplinary unit of study for ninth-grade students with varying abilities. The entire unit includes world studies, English, and biology courses, which are all part of our freshman block. The focus of this unit is to provide students with a scaffolded instructional environment where they learn to analyze, synthesize, and then construct a thesis based on evidence from texts. In addition, students use a number of resources in order to develop competence with critically analyzing and discussing varying viewpoints on a topic. The topical focus of the whole unit is the way in which society develops social constructs, which then get applied in everyday life as truth. However, in most cases, this universal truth is based on conjecture rather than evidence.

At the culmination of this unit, students will take the knowledge they have gained throughout this process to make a supported assertion regarding a social construct and how race is shown within those ideals. The students develop their arguments either to support or to counter the arguments presented within Aronson's *Race*. Students' arguments need to be supported by evidence, which is gathered from multiple

texts. This unit can be adapted and used with students in grades 10 through 12.

The lessons in this smaller unit are implemented in the biology and world studies courses. The unit occurs toward the end of our school year as the students are preparing to complete their own research papers, which are based on the development of students' own race thesis. This thesis is grounded in a self-selected text, which they use to support the arguments presented in the core text, *Race*. The students use the concepts covered in this unit to help them learn how to analyze a thesis and the supporting evidence; these skills are then used so that they can develop their own thesis and evidence to support their own assertions regarding the construct of race within their chosen topic.

The lessons in this small unit are taught simultaneously in biology and world studies; the unit ends with a cotaught lesson. We begin the unit with an introduction that evaluates the students' prior knowledge and thoughts on stereotypes and racial constructs. The activity leads to a review of scientific method and evidence that the students have used regularly throughout

the year and how this applies to evaluating racial constructs. The unit is organized as shown in the matrix in order to develop the students' understanding of how Aronson develops his thesis on the construction of race. The overall unit goals are as follows:

- Students should see the connection between biology and world studies

- Apply the study of taxonomy in a scientific tradition
- Application of analyzing of information across disciplines to support their assertions and conclusions
- Understand that science is constantly changing
- How experts can take information or research from on discipline and use it to explore and define new ideas in completely different disciplines

UNIT OVERVIEW

Day	Grouping	Central Ideas	Objectives	Teaching and Learning Activities	Common Core State Standards and Learning Goals Achieved	Texts Used
1	Biology: Whole-class instruction World Studies: Small-group instruction	Biology: Biological evolution: Unity and diversity World Studies: Introduction to Enlightenment: Philosophers within the Enlightenment	Biology: • Students will be able to discuss how scientists classify organisms today versus the past • Students will be able to explain why today's methods give a more accurate depiction of the relationship among organisms using terms discussed in class World Studies: • Students will explore background information on the Enlightenment to participate in small- and large-group discussion to ensure comprehension	Biology: • Shoe Classification introduction to start discussion • Lecture with Taxonomy PowerPoint • Practice with Biology Corner Cladogram worksheet World Studies: • Overview of the Enlightenment • Students work on relevant vocabulary in small groups • Students share out to large group • Students begin work on Enlightenment philosopher with graphic organizer	Biology: RI.9-10.3 RI.9-10.7 RI.9-10.8 Next Generation Science Standards: LS4.1 LS4.A World Studies: RI.9-10.3 RI.9-10.7 RI.9-10.8 SL.9-10.1d Social Science Standards: SS1 SS5	Biology: • PowerPoint: Taxonomy • Biology Corner Cladogram worksheet World Studies: • Dare to Know! document
2	Biology: Heterogeneous small group World Studies: Whole-group instruction, individual research	Biology: Classifying organisms World Studies: Interpreting Social Darwinism: How it's damaging to the construction of race	Biology: • Students will demonstrate their knowledge of classifying organisms by identifying homologous structures and creating a cladogram for a specific group of organisms	Biology: • Cladogram group activity with dry-erase boards • Share out activity answers and discussion Exit Slip World Studies: • Students review information from previous day • Students read assigned sections of <i>Race</i> Chapter 13 and jigsaw information with group members	Biology: RI.9-10.2 RI.9-10.3 SL.9-10.1d SL.9-10.2 Next Generation Science Standards: LS4.1 LS4.A World Studies: RI.9-10.2 RI.9-10.3 RI.9-10.7 RI.9-10.8 Social Science Standards: SS1 SS2	Biology: • Cladogram worksheet World Studies: • <i>Race</i> • Four Square vocabulary sheet

(continued)

UNIT OVERVIEW (CONT.)

Day	Grouping	Central Ideas	Objectives	Teaching and Learning Activities	Common Core State Standards and Learning Goals Achieved	Texts Used
3	Biology: Individual, large-group share World Studies: Small-group, large group share	Biology: Identifying organisms World Studies: Eugenics, survival of the fittest: How do these concepts build into the concept of the construction of race	Biology: - Students will be able to use a dichotomous key to identify organisms World Studies: - Students will be able to explain the connection between "natural selection" and "survival of the fittest" - Students will be able to summarize the relationship between Social Darwinism and eugenics	Biology: - Lecture with Taxonomy PowerPoint about dichotomous keys - Alien Invasion Dichotomous Key Worksheet - Review answers and allow for questions World Studies: - Students return to groups and continue jigsaw of information from Race Chapter 13	Biology: RI.9-10.3 Next Generation Science Standards: LS4.1 LS4.A World Studies: RI.9-10.2 RI.9-10.3 RI.9-10.7 RI.9-10.8 Social Science Standards: SS1 SS3	Biology: - PowerPoint: Taxonomy - Alien Invasion worksheet World Studies: - Race
4	Biology and World Studies: Beginning: whole class, middle: small groups, end: whole class	Biology and World Studies: Classification: Using Human Race	Biology and World Studies: - Students will be able to identify differences among a human population - Students will be able to make decisions about characteristics within the human population and classify the human population on the basis of those differences - Students will analyze the importance of genes in the classification process - Students will be able to understand why the idea of race is a biological myth	Biology and World Studies: - Intro with students creating a phylogenetic tree of their class based on common characteristic - Discussion with Race PowerPoint highlighting the creation of race based on a select few traits - PBS website Sorting People Activity - PBS Race; The Power of Illusion Video Clips - Continued discussion about the misconception of race	Biology and World Studies: RI.9-10.2 RI.9-10.7 RI.9-10.8 SL.9-10.1c SL.9-10.1d SL.9-10.2 Next Generation Science Standards: LS4.1 LS4.A Social Science Standards: SS1	Biology and World Studies: - PowerPoint: Construct of Race - PBS website: Sorting People
5	Biology: Individual World Studies: Small group, whole group, and individual	Biology: Taxonomy assessment: multiple choice, short answer, T/F, analysis World Studies: Bringing it all together: Summative assessment	Biology: - Students will be able to use a cladogram or phylogenetic tree to draw conclusions about evolutionary relationships among species - Students will be able to explain how scientists have classified organisms in the past and how they classify organisms today - Students will be able to use a dichotomous key to identify a specific organism World Studies: - Students will be able to synthesize genetic testing arguments in order to develop a thesis regarding the ethical/moral decisions involved in genetic testing as evidenced in a written response	Biology: - Students will complete an assessment over Taxonomy World Studies: - Students review information on Ethnocide and Genocide by engaging in full group discussion - Students apply information from coteaching day to article (T21 Maternity Testing)	Biology: RI.9-10.8 Next Generation Science Standards: LS4.1 LS4.A World Studies: W.9-10.1 W.9-10.2 Social Science Standards: SS1 SS3	Biology: - Teacher-Made Test World Studies: - PowerPoint: Construct of Race "The End of Down Syndrome" article

TEXTS

Main Texts

Aronson, M. (2007). *Race: A history beyond black and white*. New York, NY: Atheneum Books for Young Readers.

Race is a historical analysis of race, racism, and prejudice in Western civilization. Students are able to examine the past and analyze the actions of various groups in order to better understand the path of prejudice to racism. The book surrounds four assumptions or pillars found in a doctoral thesis by Margot Minardi: (1) Physical differences matter, (2) These differences in our bodies cannot change, (3) That is because they are inherited, and (4) Each group has a distinct level of brain power and moral refinement, they are naturally and unchangeable ranked. The book is committed to showing the connection to these four pillars and helping students understand how these ideas grew throughout history and eventually become to be known as truth.

Whole-Group Instruction

Aronson, M. (2007). *Race: A history beyond black and white*. New York, NY: Atheneum Books for Young Readers.

a. “Types of Mankind” (J.C. Nott and George R. Glidden) pg. 117

This is a reproduced chart based on Louis Agassiz’s work, who was a naturalist in America in the mid-19th century. The chart suggests that different races were distinct species. The chart depicts races and the animals in their parts of the world.

b. Louis Agassiz (illustrations are based on his earlier work) pg. 119

This picture depicts the white race as the most beautiful and advanced race, showing that scientists believed white people to look like the Greek statue of Apollo, while the black race was associated with chimpanzees.

Miller, K., & Levine, J. *Biology* (Ch. 18 “Classification”). Boston, MA: Pearson.

This is a basic biology textbook that provides educational information about terminology and concepts in biology. Chapter 18 is written specifically to help students explore traditional classification, modern evolutionary classification, and the tree of life.

Public Broadcasting System. (2003). *Sorting people: Can you tell somebody’s race by looking at them?* Retrieved

from www.pbs.org/race/002_SortingPeople/002_00-home.htm

This piece of text is from a PBS website that students use to try organize pictures of people into specific race categories. The text illustrates how difficult it is to identify and sort people into categories on the basis of appearance or physical traits. The website is interactive and is highly intuitive to use for both teacher and student.

Race: The power of illusion. (2003). California Newsreel [DVD].

This video includes interviews from scientists and professors explaining how assumptions and scientific evidence influenced history and cultural beliefs leading to the idea of race. For the lesson, specific video clips are shown to enhance the idea of stereotyping bias on the basis of skin color and how that is disproved by genetics. In the clip, a high school class is asked to identify who will be most closely related to them on the basis of their physical traits. Typically, students identify with other people (cf. peers, examples in video) on the basis of their race. Students seem to be shocked when they learn, from the results of a genetic test, that they are more closely related to people in the video of a different skin color than their own, thus proving that race as we know it is a construct created by people and their biases.

Worksheets

Steps to Aronson’s Thesis

This worksheet is given to the students at the beginning of the year and is considered a “living document,” meaning students are continually adapting their thoughts and ideas as the yearlong unit develops. Students create a visual analysis of the four pillars along with a timeline of events, noting specifically when the author depicts the change from prejudice to racism. Students also are able to record the thesis of the book while creating a basic understanding of how to use the text academically (referring to the table of contents, looking for context clues in chapter titles, etc.). This worksheet is found in Figure 1.

[Cladogram Analysis](#)

The worksheet was created specifically as a formative assessment of students’ basic understanding of a cladogram and how it is created. Biologycorner.com is published by a science teacher who shares

her lesson plans and philosophy about teaching science.

Alien Invasion

The worksheet is used as a formative assignment to help students gain a better understanding of dichotomous keys while assessing their own ability to properly use the key.

Small-Group Instruction

Public Broadcasting System. (2003). *Ask the experts: What our experts say*. Retrieved from www.pbs.org/race/000_About/002_04-experts-03-02.htm

This website features different experts on race and ethnicity and how those two pieces are socially constructed. It provides some context and expert opinions for the students to begin to develop their understanding of the differences between race and ethnicity and how it is used in society. This website was made available to students as a resource to view on their own.

Saar, M. (2011, November 13). The end of Down syndrome. *New York Post*. Retrieved from [http://](http://nypost.com/2011/11/13/the-end-of-down-syndrome/#ixzzloGCju4YT)

nypost.com/2011/11/13/the-end-of-down-syndrome/#ixzzloGCju4YT

This article explores genetic testing and its consequences for the future of the human population. It is used as a catalyst for discussion on Darwinism and the differences between genetic selection and genetic manipulation and how opinions on desirable traits could be interpreted differently within society.

Support Texts From Related Previous Units

Card, O.S. (1994). *Ender's game*. New York, NY: Tor Science Fiction.

This book explores the idea of social constructs by exploring a society's journey towards genocide and how they completely "other" an alien species with no interaction or knowledge and on the basis of rhetoric and propaganda. This connects to how media is used in current societies to promote stereotypes and social constructs such as children and their powerlessness and rationalizing beliefs/stereotypes.

TEACHING AND LEARNING ACTIVITIES

Introduction to the Unit

This introduction will be team taught by both biology and social science teachers. The purpose of this introduction is to gather information about students' prior knowledge of stereotypes and their beliefs about racial constructs.

Essential Questions

- What is a stereotype?
- How do stereotypes influence our assumptions about people?
- How so stereotypes affect us personally?
- How do we use the scientific method to evaluate the difference between fact and opinion regarding stereotypes?

Group Description

These lessons are designed for individual, paired, small-group, and whole-group instruction.

Materials

- Dry-erase board

- *Race*
- Introduction to *Race* worksheet question

Objectives

- Students will be able to understand the difference between using scientific evidence and assumptions or opinions to support their warrants.
- Students will examine the belief systems that form the foundation of stereotypes.

Common Core State Standards and Learning Goals Achieved

[Reading: Informational Text, Grades 9-10, Standard 2](#)

[Reading: Informational Text, Grades 9-10, Standard 3](#)

[Reading: Informational Text, Grades 9-10, Standard 7](#)

[Reading: Informational Text, Grades 9-10, Standard 8](#)

[Writing, Grades 9-10, Standard 1b](#)

[Writing, Grades 9-10, Standard 1c](#)

[Writing, Grades 9-10, Standard 1e](#)

[Writing, Grades 9-10, Standard 2b](#)

[Writing, Grades 9-10, Standard 2c](#)

[Writing, Grades 9-10, Standard 2e](#)

[Writing, Grades 9-10, Standard 2f](#)

[Speaking and Listening, Grades 9-10, Standard 1c](#)

[Speaking and Listening, Grades 9-10, Standard 1d](#)

[Speaking and Listening, Grades 9-10, Standard 2](#)

Social Science Standards were developed by U-High teachers in conjunction with CCSS because no national standards exist.

Social Science Standards 1: Foundations of History

Social Science Standards 2: Reading Informational Texts

Social Science Standards 3: Writing for a Variety of Purposes

Social Science Standards 5: Research to Build Knowledge

[Next Generation Science Standards: LS4.1](#)

[Next Generation Science Standards: LS4.A](#)

Procedures

At the beginning of the period, the teacher selects two students to stand at the front of the classroom and face each other. The teacher explains that the class is going to offer examples of stereotypes. Make sure students realize that the stereotype examples they are going to use are not personally about the students standing at the front of the class and that the students do not necessarily believe the stereotype that they are sharing. The teacher can start with an example of how a stereotype has affected him or her personally. (The example I use is when an older man approached my family at a restaurant and called us “white trash.” I explain to students that I immediately felt hurt and sad because I do not personally identify myself under the stereotype of “white trash,” which I articulate is a derogatory term for Caucasian individuals typically associated with a lower socioeconomic status.)

After getting the class prepared, the teacher asks for volunteers to offer different stereotypes. When a student offers an example, it is written on the dry-erase board and the student has to come and stand between the original students. After 10–15 students have offered stereotypes and come to the front of the room to stand in between the two original students (they are all in a straight line with the two original students on either end), the teacher asks the original two students some basic questions about the other, such as “What color eyes does the student have?” and “What color shoes are the student wearing?”

The original two students will struggle to answer basic questions about a person that they were standing face-to-face with minutes before. The teacher asks the class why the two original students can’t answer these basic questions. The typical student will respond by saying the question cannot be answered because there are people standing between the original two students. The goal is to get the students to understand that it is not people standing between the original two students but stereotypes. These stereotypes cloud how we see others in society.

Science will use this activity to review evidence and the scientific method. Students have been evaluated constantly on scientific method and the collection of evidence throughout the year in various units and lab activities. If students have not discussed the scientific method at this point in your class, time will need to be taken to teach students the steps of the scientific method and how evidence is collected and evaluated.

Once students have identified stereotypes, the teacher asks students to identify what evidence led them to create or have those stereotypes. At this point, students can share personal experiences or assumptions they have made to create that specific stereotype. Students are reminded that evidence in science needs to be based on factual information, and they then discuss in groups if their stereotype has any factual backing. This leads to a broader discussion reviewing how evidence is collected using the steps of the scientific method. (Note: Because this unit occurs toward the end of the school year, using evidence and the scientific method is a review for these students. If this is new to your students, additional time or lessons can be spent on these two topics.)

In order to develop further understanding of the students’ dispositions regarding the construction of race, each student will be required to complete an anonymous exit slip.

Exit Slip

- What is a stereotype that you assume to be true?
- What experiences have you had that have led you to this stereotype?
- Why do you think it is important to use factual evidence rather than opinion when determining racial constructs?

General Differentiation Ideas

- Any large group work can be done first within smaller groups as a think-pair-share.

- Students who may have difficulty with particular vocabulary or length of reading material may be given a copy with key areas highlighted in order to make the reading more manageable.
- Students who may need more support can be given worksheets with more examples.

Day 1: Biology

Essential Questions

- What is taxonomy?
- What is binomial nomenclature?
- How do we classify organisms today versus in the past?
- What methods do scientists use to classify organisms?

Group Description

Whole-class instruction

Materials

- [PowerPoint: Taxonomy](#)
- [Biology Corner Cladogram worksheet](#)

Objectives

- Students will be able to discuss how scientists classify organisms today versus the past.
- Students will be able to explain why today's methods give a more accurate depiction of the relationship among organisms using terms discussed in class.

Common Core State Standards and Learning Goals Achieved

[Reading: Informational Text, Grades 9-10, Standard 3](#)

[Reading: Informational Text, Grades 9-10, Standard 7](#)

[Reading: Informational Text, Grades 9-10, Standard 8](#)

[Next Generation Science Standards: LS4.1](#)

[Next Generation Science Standards: LS4.A](#)

Procedures

Introduce taxonomy by having every student put one shoe into a pile at the front of the classroom and then asking students to divide the shoes into groups one shoe at a time. Students begin classifying the shoes on the basis of their characteristics and mimic how scientists classified organisms in the past. This can be done using any object—you could use candy instead

of shoes. The shoe classification allows for discussion about how scientists currently classify the living world around us today and why this is important.

The teacher uses the PowerPoint to discuss information about Carolus Linnaeus, binomial nomenclature, the current classification system we use today (Domain, Kingdom, Phylum, Class, Order, Family, Genus, Species), and a discussion about how scientists classified organisms in the past versus now. Today they no longer use physical characteristics but biochemistry (DNA), phylogeny (evolutionary history), development, and behavior. This leads to discussions on phylogeny, phylogenetic trees, cladograms, and homologous vs. analogous structures. At the end of the hour, students complete the Biology Corner Cladogram formative worksheet, where they identify homologous structures within a cladogram.

Differentiation Ideas

Students who might have difficulty reading and writing responses to the worksheet the teacher can read the documents and ask students to respond orally. This can be done one on one or with a small group.

Day 1: World Studies

Essential Questions

- To what extent did the Enlightenment represent a rejection of traditional authority?
- How did the Enlightenment lead to political change? Specifically, why was this considered a turning point in global history?

Group Description

Small-group instruction

Materials

- Computers, Internet access
- [Graphic Organizer: "Dare to Know!" An Introduction to the Enlightenment](#)

Objectives

- Students will explore background information on the Enlightenment to participate in small- and large-group discussion to ensure comprehension.

Common Core State Standards and Learning Goals Achieved

[Reading: Informational Text, Grades 9-10, Standard 3](#)

[Reading: Informational Text, Grades 9-10, Standard 7](#)
[Reading: Informational Text, Grades 9-10, Standard 8](#)
[Speaking and Listening, Grades 9-10, Standard 1d](#)

Social Science Standards 1: Foundations of History

Social Science Standards 5: Research to Build Knowledge

Procedures

For the introduction, the students are given a verbal overview of the Enlightenment from the teacher after packets are handed out. After the introduction, students are broken into small groups of 2 or 3 and work on vocabulary acquisition to key terms of the Enlightenment. Students share information with whole group. The teacher then transitions students back to small groups, where they can begin research on the philosophers of the Enlightenment. Students have a graphic organizer to record information.

Homework

Students will complete a packet related to the class activity.

Differentiation Ideas

Students can be placed in heterogeneous groups specifically chosen by the teacher for varying abilities of the learners. Students can complete a think-pair-share with another small group before the large group share.

Day 2: Biology

Essential Questions

- How do scientists create cladograms using phylogeny?
- What characteristics do we use to unite clades?
- Can scientists always identify homologous structures by looking at the physical characteristics? What else might they use?

Group Description

Heterogeneous small group

Materials

- Cladogram activity
- Small dry-erase boards and erasers
- Computers (I have students look up the organisms online and identify their names in binomial nomenclature and create a list of characteristics each

organism exhibits. This could be modified by omitting the names in binomial nomenclature and giving students a list of organisms with pictures so students can identify similarities and differences among organisms if computers are not available.)

Objectives

- Students will demonstrate their knowledge of classifying organisms by identifying homologous structures and creating a cladogram for a specific group of organisms.

Common Core State Standards and Learning Goals Achieved

[Reading Informational Text, Grades 9-10, Standard 2](#)

[Reading: Informational Text, Grades 9-10, Standard 3](#)

[Speaking and Listening, Grades 9-10, Standard 1d](#)

[Speaking and Listening, Grades 9-10, Standard 2](#)

[Next Generation Science Standards: LS4.1](#)

[Next Generation Science Standards: LS4.A](#)

Procedures

Review components from the day before. Students are broken into heterogeneous groups of 2 or 3 and given a group of organisms. As a group, they try to create a cladogram on a small dry-erase board, identifying the homologous characteristic that unites each clade. We discuss their cladograms at the end of the class and identify any issues with their clades or issues they had trying to create their clades.

Exit Slip

How difficult was it to create evolutionary relationships among these organisms just by looking at their physical characteristics?

Day 2: World Studies

Essential Questions

- How were the ideas from *Origin of Species* by Charles Darwin interpreted by writers such as Herbert Spencer?
- How were these interpretations damaging to the construction of race?

Group Description

Whole-group instruction, individual research

Materials

- *Race: A History Beyond Black and White*
- Computers, Internet access
- Four Square vocabulary sheet (see Figure 2)

Objectives

- Students will be able to interpret Chapter 13 in *Race* in order to explain how the scientific principles of Charles Darwin are interpreted as social constructs.
- Students will be able to analyze the effect that “Social Darwinism” had on Western civilization through large- and small-group discussion.

Common Core State Standards and Learning Goals Achieved

[Reading: Informational Text, Grades 9-10, Standard 2](#)

[Reading: Informational Text, Grades 9-10, Standard 3](#)

[Reading: Informational Text, Grades 9-10, Standard 7](#)

[Reading: Informational Text, Grades 9-10, Standard 8](#)

Social Science Standards 1: Foundations of History

Social Science Standards 2: Reading Informational Texts

Procedures

Students begin class period with brief, teacher-led overview of research from previous day. After review of information, students are directed to the Chapter 13 *Race* reading guide and vocabulary sheet in Blackboard. Students complete the reading of Chapter 13 as a jigsaw activity. Each group is assigned a portion of the chapter to read and become an expert on the content and the related vocabulary. Each group is given a four-square vocabulary sheet to complete for its section of the chapter. When each small group has completed its sections, one member from each group forms a new small group to share the group’s “expertise” with the other groups.

Differentiation Ideas

Students can be placed in groups with mentor students or assigned particular sections on the basis of their individual strengths and needs.

After a designated amount of time, students share-out in a large group to ensure comprehension. Students then begin individual work on the Chapter 13 reading guide.

- Introduction: Show trailer for “[Darwin’s Darkest Hour](#)”
- What do we know about Darwin?
- What do we learn about him from this clip?
- What was his theory?

Activity: Four-square vocabulary

Students chunk and read the definitions of each term. Students complete four-square activity and share their understanding of these terms.

Discussion

What is the relationship between “natural selection” and “survival of the fittest”? What is the rhetorical difference (effect)? What is the relationship between Social Darwinism and eugenics?

Predict

Have students complete a short response to answer the question: On the basis of what we’ve been learning, what role will these concepts play in how race is being applied at this point in history?

Reading Guide

Begin reading Chapter 13 in *Race*, begin working on reading guide.

Homework

Complete reading guide

Day 3: Biology

Essential Questions

- What is a dichotomous key?
- How do scientists use dichotomous keys? What features do they use?

Group Description

Individual, large-group share

Materials

- [PowerPoint: Taxonomy](#)
- [Alien Invasion worksheet](#)

Objectives

- Students will be able to use a dichotomous key to identify organisms.

Common Core State Standards and Learning Goals Achieved

[Reading: Informational Text, Grades 9-10, Standard 3](#)

[Next Generation Science Standards: LS4.1](#)

[Next Generation Science Standards: LS4.A](#)

Procedures

Introduce dichotomous keys using the example in the PowerPoint. Pass out the dichotomous key practice worksheet and have students identify the organisms using the key. Go over the answers at the end of class and allow students to ask questions.

Differentiation Ideas

Students who struggle with sharing in front of the whole class could share with a small group instead. Students should not be penalized for not sharing with the whole group, as the teacher can collect the written work to assess student understanding.

Day 3: World Studies

Essential Questions

- How were the ideas from *Origin of Species* by Charles Darwin interpreted by writers such as Herbert Spencer?
- How were these interpretations damaging to the construction of race?

Group Description

Small-group, large group share

Materials

- *Race*
- Computers
- Blackboard: *Race*, Chapter 13 Reading Guide

Objectives

- Students will be able to explain the connection between “natural selection” and “survival of the fittest.”
- Students will be able to summarize the relationship between Social Darwinism and eugenics.
- Students will be able to predict how these concepts are applied to the construction of race.

Common Core State Standards and Learning Goals Achieved

[Reading: Informational Text, Grades 9-10, Standard 2](#)

[Reading: Informational Text, Grades 9-10, Standard 3](#)

[Reading: Informational Text, Grades 9-10, Standard 7](#)

[Reading: Informational Text, Grades 9-10, Standard 8](#)

Social Science Standards 1: Foundations of History

Social Science Standards 3: Writing for a Variety of Purposes

Procedures

For the introduction, the teacher leads whole-group discussion and overview of Darwinism from previous day. Students then return to groups and continue work on Enlightenment research. Students continue work from previous day on *Race* reading guide Chapter 13. Teacher independently checks groups to ensure understanding.

Differentiation Ideas

The teacher could alternatively meet with small groups of students or with individual students to confer on the basis of need. Students will have 15 minutes at end of class to share responses and discuss. This share-out is structured as a think-pair-share.

Homework

Students complete any work on research document.

Differentiation Ideas

The *Race* reading guide can be altered (e.g., fewer questions, different format, simpler vocabulary) as needed for individual student success.

Day 4: Biology and World Studies Cotaught Lesson

Essential Questions

- What is race?
- How are the definitions of race and ethnicity different?
- How has the use of the definition of race evolved? And how do the ways that people have defined race over time influenced social constructs?
- How is the scientific method used to distinguish races?

Group Description

Beginning: whole class, middle: small groups, end: whole class

Materials

- [PowerPoint: Construct of Race](#)
- PBS website: [Sorting People](#)
- Video: *Race: The Power of Illusion* (1:15–5:45; 33:27–36:20)

Objectives

- Student will be able to identify differences among a human population.
- Students will be able to make decisions about characteristics within the human population and classify the human population on the basis of those differences.
- Students will analyze the importance of genes in the classification process.
- Students will be able to understand why the idea of race is a biological myth.

Common Core State Standards and Learning Goals Achieved

[Reading: Informational Text, Grades 9-10, Standard 2](#)

[Reading: Informational Text, Grades 9-10, Standard 7](#)

[Reading: Informational Text, Grades 9-10, Standard 8](#)

[Speaking and Listening, Grades 9-10, Standard 1c](#)

[Speaking and Listening, Grades 9-10, Standard 1d](#)

[Speaking and Listening, Grades 9-10, Standard 2](#)

Social Science Standards 1: Foundations of History

[Next Generation Science Standards: LS4.1](#)

[Next Generation Science Standards: LS4.A](#)

Procedures

Intro: Classification of Class. Students will classify their own class by specific characteristics, taking a broad group and making more specific groups.

Body: Discuss students' classification system. Highlight the traits students put the most emphasis on for their classification system. Continue the discussion with how the government classifies people and how scientists in the 1700s have created the idea of race. At this point, students will go onto [PBS website](#) (in small groups) to complete the people sort. This activity demonstrates how difficult it is physically differentiate individuals. The teacher can emphasize the importance of genetics in the process of classification. (I will then have the students break into groups based on other genetic characteristics not included in their original groups.) Show the first video clip from *Race:*

The Power of Illusion to further demonstrate that physical traits are not determinate of race/ethnicity. Students should see that their original classification groups do not create groups of people who have the most common genetics.

Conclusion: Ask students, Why do we put so much emphasis on certain traits and not others? Watch second video clip from *Race: The Power of Illusion* to show the importance of genetics in classification. Discuss misconceptions about who would be the most genetically similar. This clip should provide evidence for the misconception of the human idea that race has no biological backing. Last few PowerPoint slides (genocide, ethnocide, prenatal testing) from Construct of Race used for World Studies.

Differentiation Ideas

During the conclusion, the final question can be completed as a think-pair-share to allow more students the opportunity to share out. This will also help scaffold the activity for students who might feel uncomfortable sharing out with the whole group get an opportunity to develop and discuss his or her response.

Day 5: Biology

Essential Questions

- What is taxonomy?
- What conclusions can be made about understanding the living world around us?

Group Description

Individual

Materials

- Teacher-Made Test

Objectives

- Students will be able to use a cladogram or phylogenetic tree to draw conclusions about evolutionary relationships among species.
- Students will be able to explain how scientists have classified organisms in the past and how they classify organisms today.
- Students will be able to use a dichotomous key to identify a specific organism.

Common Core State Standards and Learning Goals Achieved

[Reading: Informational Text, Grades 9-10, Standard 8](#)

[Next Generation Science Standards: LS4.1](#)

[Next Generation Science Standards: LS4.A](#)

Procedures

The teacher passes out the test. While students complete the test, the teacher should monitor the class and help students with any questions.

Day 5: World Studies

Essential Questions

- How is genetic testing used in our modern society?
- What conclusions can be made about genetic testing and genocide? Are these terms related?

Group Description

Small group, whole group, and individual

Materials

- [PowerPoint: Construct of Race](#)
- [“The End of Down Syndrome” article](#)

Objectives

- Students will be able to synthesize genetic testing arguments in order to develop a thesis regarding the ethical/moral decisions involved in genetic testing as evidenced in a written response.

Common Core State Standards and Learning Goals Achieved

[Writing, Grades 9-10, Standard 1](#)

[Writing, Grades 9-10, Standard 2](#)

Social Science Standards 1: Foundations of History

Social Science Standards 3: Writing for a Variety of Purposes

Procedures

Teacher will start class by reviewing the genocide, ethnocide, and how Social Darwinism connects to those from previous day. Students will predict and ask questions about genetic testing and its implication for individuals with prenatal diagnosis (e.g., Is termination of a pregnancy considered genocide if it is known that this child has a specific genetic defect?). Students will be asked to respond to a written prompt.

ASSESSMENT

Day 1: Biology

Cladogram worksheet—Formative assessment

Students are given a cookie-cutter cladogram, where they must identify the homologous characteristic that unites each clade. This is a simple activity to gauge students’ understanding of how organisms are structured into phylogenetic trees or cladograms.

Day 1: World Studies

[Graphic Organizer—Formative assessment](#)

This activity allows for students to begin researching concepts and philosophers of the Enlightenment. Students begin by reading a small section of text giving a brief overview of the Enlightenment and then move into small groups to assess their vocabulary knowledge. When this is complete, students stay in groups and continue small-group research (recording information on their graphic organizer).

Day 2: Biology

Cladogram activity—Formative assessment (Figure 3)

This activity illustrates the difficulty in identifying similarities and differences among organisms, specifically identifying a homologous structure that will unite a group of organisms while eliminating others. This activity will help the teacher gain a better understanding of student comprehension about homologous characteristics and how to appropriately create, use, and interpret a cladogram to show phylogeny. It also allows for a class discussion about how it is difficult to look at physical characteristics alone and why scientists currently use DNA.

Day 2: World Studies

Race reading guide

Students start the day by listening to teacher-led reading of *Race* Chapter 13 (teacher uses literacy strategies while reading aloud). Teacher leads large-group

discussion during this time. When reading is complete, students work independently on their reading guide.

Day 3: Biology

Dichotomous Key worksheet—Formative assessment
Students use this activity to test their own ability to use a dichotomous key by correctly identifying alien species.

Day 3: World Studies

Race reading guide—Summative assessment continued from Day 2

Students continue individual work on *Race* reading guide Chapter 13.

Day 4: Biology and World Studies

Whole-class creation of phylogenetic tree—Formative assessment

The students develop pieces of the phylogenetic tree in small groups that continue to get smaller on the basis of their genetic characteristics. After the students are in as small of a group as they can go (2 or 3 people), the class comes back together as a whole group to construct a whole-class phylogenetic tree based on the findings from each of the small groups. We use

this information to begin discussion and determine if we need to review any concepts for reteaching or clarification before moving on. We also discuss the bias present within the choices students made regarding their genetic similarities.

Day 5: Biology

Taxonomy test (multiple choice, true/false, fill in the blank, short answer, analysis of cladogram)—Summative assessment

The test will contain a range of questions, including knowledge-based questions about new terminology to application-type questions where students analyze information in a cladogram to draw conclusions and use a dichotomous key to identify a specific species.

Day 5: World Studies

Student short journal response—Summative assessment (Writing Assessment Rubric in Figure 4)

Students return to world studies classroom and review last two slides of the team-teaching PowerPoint in conjunction with the article on prenatal testing. Students are broken into groups of 3 or 4 and read the article in groups and begin discussion on the ethics of prenatal testing. Students share out in large group and with time remaining (or at home) respond to the writing prompt in a formal journal entry.

POSSIBLE NEXT STEPS FOR TEACHERS

Our unit on Social Darwinism feeds directly into race topics students select for their individual research projects. This current unit feeds into the next smaller unit where the students will take information from the world studies/biology unit and the text *Race* in order to develop a thesis that supports or argues against Aronson's thesis as it has been analyzed throughout the past eight months. Our collaborative unit prepares the students for their research projects by teaching them how to analyze the assertions of different researchers and how each researcher supports his or her arguments with evidence. The evaluation of ideas and development of a thesis and an argument is preemptive to the students developing their own thesis regarding race.

For example, when students go through the process of narrowing their paper topics, they use the concepts of Social Darwinism to evaluate the steps listed here:

Answer one of the two following questions, depending on your topic:

1. How does your research question/topic relate to *Race*? Reconsider Aronson's arguments—both for the book as a whole and throughout each chapter, and try to find a place where your question might fit in. Here are some *possible* ideas, though there are many more:

- A. Prejudice has existed since the beginning of time.
- B. Binary thinking and exceptionalism are important components of prejudice.
- C. Religion has often been used to discriminate.
- D. Race is a modern invention. Consider the four pillars and where your topic does or does not compare with the pillars.
- E. Science determined the modern definition of race.

2. What are other forms of discrimination Aronson does *not* mention that you could outline instead?
3. What is your hypothesis? In other words, what is the potential answer to your narrowed research question? What do you THINK your research is going to show you? How *might* it connect to the idea of prejudice and discrimination (i.e., the book *Race*)?
4. If you are disagreeing with part of Aronson's argument, describe his argument that you would like to take on. At this point, DO NOT critique that argument; simply lay it out. Once you've established this argument, what part of it do you intend to disprove?
5. Now that you have considered your research topic and how it is situated in Aronson's argument,

restate your primary research question in a way that encompasses your topic and how it relates to race.

Connection to the summative in the larger nine-month unit corresponds to the following CCSS:

[W.9-10.1b](#)

[W.9-10.1c](#)

[W.9-10.1e](#)

[W.9-10.2b](#)

[W.9-10.2c](#)

[W.9-10.2e](#)

FIGURE 1. Steps to Aronson's Thesis: Guide for Independent Student Analysis

In what year (approximately) does race appear?
Use a quote from the book with a page number
to support your answer.

Race is constructed in _____.

Pillar One (pg. no) _____

*At what point (what binary) does this appear?

Pillar Two (pg. no) _____

*At what point (what binary) does this appear?

Pillar Three (pg. no) _____

*At what point (what binary) does this appear?

Pillar Four (pg. no) _____

*At what point (what binary) does this appear?

Years:

Discussion Questions and Other Labels for Your Diagram

- Consider the steps of scientific method:
 - Make an observation
 - Ask a question
 - Formulate a hypothesis
 - Do preliminary research (e.g., What do you already know? What do you want to know?)
 - Gather evidence/test your hypothesis
 - Analyze your results and draw conclusions
 - Decide if hypothesis is true or false, and report results
 - Form another hypothesis and begin again if hypothesis is false

Dr. Aronson is going to use each of these steps in his *historical* argument, but he uses the entire book to complete the process. In his introduction, he is covering the first three steps: making an observation, asking a question, and formulating a hypothesis. Explain what the first TWO steps are, and add a quote or part of quote from the text to support your answers.

- Aronson's initial observation:
- Aronson's big question/s:

- Now that you've dissected his introduction, explain Dr. Aronson's third step of the scientific method, the hypothesis. What is it? (Hint: Consider the difference between race and

prejudice and how the two relate to each other, especially in terms of when race was "invented." Combine your answers to questions 2 and 3 into a couple of short, but specific sentences.) Use textual evidence to support your answer.

- On your diagram, label where *prejudice* appears. Label where *race* appears. If you're not sure of the difference between the two words, refer to question 2 on your opening day questions.
- Go to the table of contents. Look at the titles/page numbers (p. 12, Ch 1: pp. 29–31, Ch 2: pp. 34–36, Ch 3: pp. 41–43, 47–49, 51, Ch 4–7: p. 79, last full paragraph—What are the four non-Christian groups that allow Christians "a common way of seeing the world"?). **Label those binaries in the box above each step.** (Once we get to that chapter in class, go back and change your answer if necessary.)
- Go to pp. 116–119 in Ch 9. Looking only at these charts, what do you think has happened? (Hint: If you can't figure this out, look at the chapter and content titles in the table of contents.)
- Go to p. 31 and read the quote starting with "Readers, I am not asking you to agree with me..." After reading the first two full sentences on p. 31 and remembering that this is a historical argument, what do you think Aronson expects from you as you read this book?

Note. Diagram created by Amy Reiman (used with permission).

FIGURE 2. Four Square Vocabulary Sheet: World Studies Day 2

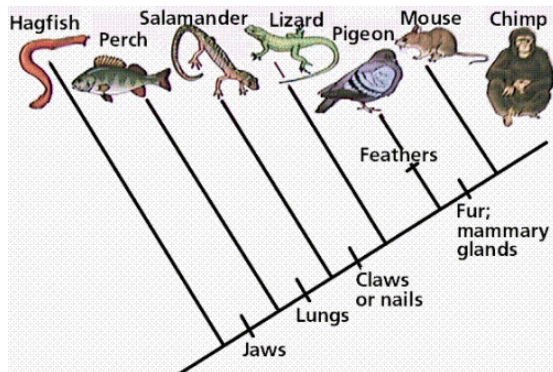
DEFINITION IN OWN WORDS	TEXTUAL EXAMPLES
SYNONYM/ANTONYM	FACTS/CHARACTERISTICS

WORD

FIGURE 3. Cladogram Activity: Biology Day 2

Teacher Instructions: Divide students into groups of 2 or 3 and hand them a small dry-erase board with a marker. Give each group a list of organisms. The students should look up each organism, identify its name in binomial nomenclature, write down its characteristics, and create a cladogram, grouping organisms into clades by identifying the homologous characteristic or the characteristic that each group has in common.

Example:



Note. Image retrieved from <http://thestagecoachroad.wordpress.com/tag/cladogram/>

Group 1

Zebra *Equus quagga*
Pig *Sus scrofa domestica*
Mountain Goat *Oreamnos americanus*
Leopard Lizard *Gambelia wislizenii*
Snake *Thamnophis sirtalis*
Earthworm *Lumbricus terrestris*

Group 2

Spider Monkey *Ateles geoffroyi*
Bobcat *Lynx rufus*
Garden Snake *Thamnophis sirtalis*
Tree Frog *Litoria caerulea*
Great White Shark *Carcharodon carcharias*
Flatworm *Pseudoceros dimidiatus*
Crocodile *Crocodylus acutus*
Hagfish *Myxine glutinosa*

Group 3

Lion *Panthera leo*
Bat *Eptesicus fuscus*
Blowfish *Arothron caeruleopunctatus*
Garter Snake *Thamnophis sirtalis*
Alligator *Alligator mississippiensis*
Leech *Haemadipsa picta*
Pelican *Pelecanus occidentalis*

Group 4

Piranha *Pygocentrus nattereri*
Gecko *Hemidactylus frenatu*
Leopard Lizard *Gambelia wislizenii*
Grizzly Bear *Ursus arctos horribilis*
Mountain Gorilla *Beringei beringei*
Eel *Anguilla rostrata*

Group 5

Hagfish *Myxine glutinosa*
Hammerhead Shark *Sphyrnidae sphyrna*
Salmon *Oncorhynchus keta*
Frog *Rana temporaria*
Sea Turtle *Chelonia mydas*
Pigeon *Columba livia domestica*
Cow *Bos primigenius*

Group 6

Sea Turtle *Chelonia mydas*
Horse *Equus caballus*
Wolf *Canis lupus*
Leopard *Panthera pardus*
Cat *Felis catu*
Cow *Bos primigenius*

Group 7

Lamprey *Petromyzon marinus*
Shark *Carcharodon carcharias*
Salamander *Ambystoma tigrinum*
Leopard Lizard *Gambelia wislizenii*
Tiger *Panthera tigris*
Gorilla *Gorilla gorilla*

Group 8

Earthworm *Lumbricus terrestris*
Spider *Achaearanea tepidariorum*
Ant *Solenopsis invicta*
Grasshopper *Melanoplus differentialis*
House fly *Musca domestica*
Dragonfly *Aeshna cyanea*
Butterfly *Danaus plexippus*

Group 9

Lamprey *Petromyzon marinus*
Tuna *Thunnus thynnus*
Bullfrog *Rana catesbeiana*
Snapping Turtle *Chelydra serpentine*
Kangaroo *Macropus rufus*
Rhesus Monkey *Macaca mulatta*

FIGURE 4. Writing Assessment Rubric

Standard Assessed: SS3 (Writing for a Variety of Purposes). Students can create history-specific types of writing, including informative/explanatory and argumentation/claim

Score	Descriptor
4	<u>Exceeds</u> : Indicates that students have not only mastered the skill or skills being practiced but also exceed the expectations of the teacher.
3	<u>Meets</u> : Indicates that students are on the verge of mastery and have met most or all of the standard(s) being assessed; students may be developing one or two of the chosen skills.
2	<u>Approaches</u> : Indicates that students are making progress towards mastery of the skills but are still developing or struggling to understand others, or both.
1	<u>Below</u> : Indicates that students are still developing or struggling to understand the standards, or both.
0	<u>No Evidence</u> : Indicates that students have not submitted the assessment or have copied another text or another person, or both.

Standard	Score				
	4	3	2	1	0
SS3.1 Students can write tests to argue, inform, or explain and convey complex ideas in an organized manner.	Students used 3 or more specific examples from the text(s) to argue, inform, or explain and convey complex ideas. Students' work was organized in a clear and concise manner.	Students used 2 specific examples from the text(s) to argue, inform, or explain and convey complex ideas. Students' work was clear but was not succinct.	Students used 1 specific example from the text(s) to argue, inform, or explain and convey complex ideas. Students' work was not well-defined and did not summarize the information correctly.	Students used no examples from the text(s) to argue, inform, or explain and convey complex ideas. Students' work lacked organization to develop succinct argument.	Indicates students have not submitted the assessment or have copied another text or another person or both.
SS3.2 Students can develop claim(s) and counterclaims fairly by supplying well-chosen, relevant, and sufficient evidence for each.	Students can develop 3 or more claim(s) and counterclaims fairly by supplying well-chosen, relevant, and sufficient evidence for each.	Students can develop at least 2 claim(s) and counterclaims fairly by supplying well-chosen, relevant, and sufficient evidence for each.	Students can develop at least 1 claim(s) and counterclaims fairly by supplying well-chosen, relevant, and sufficient evidence for each.	Students did not develop any claim(s) and counterclaims or did not choose sufficient evidence or both.	Indicates students have not submitted the assessment or have copied another text or another person or both.
SS3.3 Students can develop short and sustained research to gather relevant information from both primary and secondary texts.	Students can develop 3 or more specific pieces of research evidence from relevant primary and secondary sources.	Students can develop at least 2 specific pieces of research evidence to gather from relevant primary and secondary sources.	Students can develop at least 1 specific piece of research evidence to gather from relevant primary and secondary sources.	Students did not develop any specific pieces of research evidence to gather from relevant primary and secondary sources.	Indicates students have not submitted the assessment or have copied another text or another person or both.

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