

HUMANITAS INTERDISCIPLINARY THEMATIC UNIT

School: El Camino Real High School

Grade: Ninth

Team Members:

Regina Goad

Denise Leonard

Lori LoCurto

Nicole Salottolo

Dean Sodek

Subjects:

Health

English

Algebra

English

Biology

THEME/OUTCOMES

Unit Theme: Finding Identity: Nature, Nurture, and the Choices We Make

Rationale:

Though scientists and psychologists have long argued the *Nature vs. Nurture* debate, questions about the extent to which genetics and the environment shape a person's identity still persist. This unit examines how genetics, life experiences, and personal choices influence who we are.

Outcomes for Students:

Students will be able to provide concrete examples of how a literary characters environment shaped their internal and external view. They will create health contracts that advocate optimal health decisions and include reflective commentary on their effects on personal identity. Students will identify the differences between various modes of genetic inheritance, construct and analyze a karyotype, and research the causes of genetic disorders. Students will also use relevant math skills to provide evidence for the assertions they make with regard to gene frequencies and health decisions.

ESSENTIAL QUESTIONS

- How much influence does a person's environment and life experiences have on determining personal identity?
- To what extent are we products of our environment?
- What impact has your genetic identity had on the ways you perceive yourself? The ways others might perceive you?
- How can health decisions (mental/emotional, physical, spiritual) shape self-image?
- How can you use systems of equations to solve physical problems?

INTERDISCIPLINARY ESSAY PROMPT

In explaining the factors that shape a person's identity, psychologist Jerome Kagan wrote that, "genes and heredity may determine the foundation of the house, but time and place determine its form." Write an essay that explains how genetics, life experiences, and personal choices each play a role in determining a person's identity. First, explain how genetic identity is determined through the inheritance of traits. Next, choose a character from your readings and discuss how his or her experiences shaped their personal identity. Then, discuss how a person's health decisions can shape the ways that they view themselves and the ways they are perceived by others. Finally, explain which of the three factors you think have the greatest influence on a person's identity.

Shared instructional strategies (Cooperative grouping, Shared Inquiry, common graphic organizations)

Name: Denise Leonard & Nicole Salottolo Subject: English

Focus Standards:

R3.2 Analyze the way in which the theme of a selection represents a view of life; use evidence from the text to support the claim.

(One to two primary standards per subject area. Write abbreviated standard after number.)

Materials:

The House on Mango Street by Sandra Cisneros

Romeo and Juliet by William Shakespeare

Humanitas Identity Project: Diary Entry

Activities:

Literature Themes: Students identify multiple themes found in literature and discuss (written and oral) how the events from the character's life influenced the character's self-identity.

Identity Project Diary Entry: Through a writing a first-person diary as the character, students use sensory details from the literature to demonstrate their understanding of the influence of the character's environment on the character's identity.

The Humanities Connection...

In identifying themes in literature, we understand more of what makes us who we are, individually or collectively. Building upon our earlier work in identifying conflict, with deeper analysis, we begin to understand the influence of a person's environment and/or experiences on self-identity.

Name: Regina Goad Subject: Health

Focus Standards:

Analyze the immediate and long-term effects of personal health practices and incorporate these practices as part of a routine for maintaining and enhancing health.

(One to two primary standards per subject area. Write abbreviated standard after number.)

Materials:

Lifetime Health Textbook

Health Decision Essay

Humanitas Identity Project: Health Contract and Personal Reflection

Activities:

Identity Project Health Contract: Students develop a health contract by identifying and explaining ten behaviors that they can adopt to improve or maintain optimal health. Behaviors should address all aspects of health (mental/emotional, physical, nutritional, and spiritual).

Identity Project Personal Reflection: The contract reflection demonstrates the specific steps that students will take to maintain healthy choices, and how the implementation of these behaviors will impact self-image and personal identity.

The Humanities Connection...

The decisions that students make regarding their mental/emotional, physical, and spiritual health affect every aspect of their lives. By reinforcing the connections between optimal health behaviors, academic success, and future opportunities, students can reinforce a positive self-image and develop a deeper understanding of who they are and all they want to be.

Name: Lori LoCurto Subject: Algebra

Focus Standards:

23.0 Students apply quadratic equations to physical problems

25.0 & 25.1 Students use properties of the number system to judge the validity of results, prove or disprove statements, construct valid arguments, and formulate assertions

(One to two primary standards per subject area. Write abbreviated standard after number.)

Materials:

- Calculating Area Worksheets
- Physical Activity Charts & Calorie Tables
- Humanitas Identity Project: Math Equations

Activities:

Humanitas Identity Project: Identity Box Equations

Students will solve equations to determine dimensions of various shapes that will be incorporated into the design of their “identity box”. This box will be transformed into a structure (house, college, business, etc.) that speaks to the student’s personal identity. The box will hold the solved equation sheets and the other items from each discipline.

Humanitas Math & Health Problem (Systems of Equations Essay):

Students evaluate food choices and various exercise activities over different time periods and discuss and graph the results. The essay and accompany graph will demonstrate how long a given activity must be performed to burn a particular number of calories.

Humanitas Math & Science Problem (The Hardy-Weinberg Equation):

Students use science and math content to solve and explain the implications of a Hardy-Weinberg genetics problem. These problems use algebraic binomial equations to determine the distribution of genetic traits in a population.

The Humanities Connection...

The application of math to real-world problems helps explain the natural world. Students will use relevant math to solve complex problems, strengthen arguments, and support the assertions they make.

Name: Dean Sodek Subject: Biology

Focus Standards:

2.e. Students know why approximately half of an individual's DNA sequence comes from each parent.

2.g. Students know how to predict possible combinations of genes in an offspring from the genetic makeup of the parent.

(One to two primary standards per subject area. Write abbreviated standard after number.)

Materials:

Humanitas Math & Science Problem: Hardy-Weinberg Binomial Equations
Genetic Scrapbook Project and Lab Activity
Humanitas Identity Project: Genetic Dice
The Curious Incident of the Dog in the Night-time by Mark Haddon

Activities:

Humanitas Math & Science Problem (The Hardy-Weinberg Equation):

Students use science and math content to solve and explain the implications of a Hardy-Weinberg genetics problem. These problems use algebraic binomial equations to determine the distribution of genetic traits in a population.

Genetic Scrapbook: Students create a scrapbook for a creature of their own creation. Students follow rules of inheritance to demonstrate how traits are passed from parent to offspring.

Identity Project Diary Entry: Through a writing a first-person diary as the character, students use sensory details from the literature to demonstrate their understanding of the influence of the character’s environment on the character’s identity.

The Humanities Connection...

The chromosomes we inherit are the physical basis of our identities and play an important role in determining how we perceive ourselves and others. Though scientists, psychologists, and sociologists may debate the degree of influence that our genes have over our lives, there is no question that the search for “self” starts within our cells.