

HUMANITAS INTERDISCIPLINARY THEMATIC UNIT

School: El Camino Real High School

Grade: Tenth

Team Members:

Heidi Crocker

Devon Knadle

Melinda Owen

Dean Sodek

Crocker/Owen

Subjects:

English

World History

English

Biology

Art

THEME/OUTCOMES

Unit Theme: Pushing the Envelope: Technological Change and Its Consequences

Rationale: The Eighteenth, Nineteenth and Twentieth Centuries have been a period of unprecedented technological change. New technologies have brought great wealth and power to nations, but have also wrought many consequences and caused a great deal of human suffering. The human desire to push the boundaries of science and technology has had tremendous political, societal, and ethical implications that continue to define our existence and shape our world.

Outcomes for Students: Students will have an understanding of the benefits, consequences, and responsibilities associated with new technologies. Students will be able to explain preconditions, key inventions, and societal transformations of the Industrial Revolution. Students will evaluate the consequences that literary characters face when they advance technology beyond their means. Students will be able to detail genetic engineering techniques, and give an opinion regarding the prudence of its application. Students will also produce a painting (w/ accompanying written commentary), inspired by one of their readings, that depicts the positive or negative impacts of a new technology.

ESSENTIAL QUESTIONS

- What are the human benefits and costs associated with technological change?
- Are there limits to the degree in which man should alter nature to his advantage?
- Is technology more often the cause or the solution to man's problems?
- What are the advantages and disadvantages that accompany agrarian and industrial societies?
- How do art movements such as romanticism and impressionism relate to the Industrial Revolution?

INTERDISCIPLINARY ESSAY PROMPT

Inspired by Paul Klee's painting, *Angelus Novus*, Walter Benjamin described technological change as a catastrophic chain of events that advances like a storm, accumulating wreckage and hurling us blindly towards the future. Write an essay that examines the impacts new technologies have had on individuals and society. First, choose one major invention from the Industrial Revolution and discuss how this key invention changed society. Then, discuss how an individual from one of your readings is affected emotionally, socially, or physically by technological change. Next, discuss the genetic manipulation of a specific organism as well as potential benefits and consequences. Finally, using all that you have learned about technological change, make and defend an assertion that either agrees or disagrees with Walter Benjamin's perspectives on technological change.

Shared instructional strategies (Cooperative grouping, Shared Inquiry, graphic organizers, Cornell Notes)

Name: Devon Knadle Subject: World History

Focus Standards:

10.3 Students analyze the effects of the Industrial Revolution in England, France, Germany, Japan, and the United States

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

Materials:

Readings:

- World History textbook
- *The Ghost Map* by Steven Johnson
- *Necessity's Mother* from Guns, Germs, and Steel by Jared Diamond

Various Art Supplies:

- Colored pencils, markers
- Paper
- Scissors
- Ruler
- Computer (Internet)

Humanitas Art Project

Activities:

Industrial Revolution Timeline:

Students will construct an I.R. timeline that includes ten inventions, inventors, and images. Computer software and Internet resources will be utilized.

Political Cartoon: Students will create a political cartoon that comments on an I.R. invention.

Humanitas Art Project: Students research an artist from the romantic or impressionist movement. Students then create their own painting (w/ commentary), inspired by one of their readings, that depicts the positive or negative impacts of a new technology.

The Humanities Connection...

Art component emphasizes characteristics of Romanticism, Impressionism, and artists of the period. See art project notes.

The Industrial Revolution brought great wealth and power to nations, but also caused a great deal of human suffering. It influenced burgeoning artistic, political, and scientific movements, as London, in 1850, was home to the likes of William Blake, Percy and Mary Shelly, and Karl Marx.

Note: *Necessity's Mother* and Hard Times (excerpts) are shared between the history and English class, with students reading various sections in each class.

Name: Heidi Crocker & Melinda Owen Subject: English

Focus Standards:

Reading 3.12: Analyze how a work of literature is related to the themes of its historical time period.

Reading 3.3: Analyze characters by looking into motivations, relationships, and external conflicts.

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

Materials:

Readings:

- The Prometheus Myth
- The Faustian Myth
- Frankenstein, or the Modern Prometheus (excerpts) by Mary Shelley
- Hard Times (excerpts) by Mary Shelley
- *Necessity's Mother* from Guns, Germs, and Steel by Jared Diamond

Activities:

Readings: Students read excerpts from the point of view of Victor Frankenstein and the monster.

Letter Project: Students write letters to their family members from the point of view of Victor Frankenstein or the monster.

Research Conventions: Students learn research techniques, MLA formatting, and proper source citation. Students utilize the library and computer lab to research an artist of the time period.

Humanitas Art Project: Students create their own painting (w/ commentary), inspired by one of their readings, that depicts the positive or negative impacts of a new technology.

The Humanities Connection...

Art component emphasizes characteristics of romanticism, impressionism, and artists of the period. See art project notes.

The literary arc of the Prometheus myth, Frankenstein, and *Fortitude*, allows students to examine how a recurring theme informs and updates us on the human condition. Students will evaluate Frankenstein as a highlight of the Romantic Movement and a counter movement to traditionalism.

Note: *Necessity's Mother* and Hard Times (excerpts) are shared between the English and history class, with students reading various sections in each class.

Name: Dean Sodek Subject: Biology

Focus Standards:

- 5.a. Students know the structures of DNA, RNA, and protein.
- 5.b. Students know how to explain DNA replication and transcription
- 6.c. Students know how genetic engineering (biotechnology) is used to produce novel biomedical and agricultural products.

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

Materials:

Readings:

- Jurassic Park by Michael Crichton
- The Ghost Map by Steven Johnson
- *Fortitude* by Kurt Vonnegut
- *Harvest of Fear: The Pros and Cons of Genetic Engineering*

Video:

- Harvest of Fear (PBS)
- Life Running Out of Control (Nova)

Art Supplies:

- Canvases, watercolor/pastel paper
- Watercolors, acrylics, pastels
- Brushes, palettes, smudge tools

Activities:

Disease Project

Students prepare reports and group presentations on various diseases caused by viruses, prokaryotes, and eukaryotes.

Position Paper/ Brochure

Students create a biotechnology newsletter that explains the application of a particular biotechnology being applied to microorganisms, plants, or animals. Students take and support a position on the use of the biotechnology.

Humanitas Art Project: Students create their own painting (w/ commentary) that depicts the positive or negative impacts of a new technology.

The Humanities Connection...

Art component emphasizes characteristics of romanticism, impressionism, and artists of the period. See art project notes.

The genetic revolution of the past fifty years has transformed the field of biology, spawned new industries, and inspired previously unfathomable ways of modifying nature to man's advantage. These new biotechnologies bring great benefits, potential consequences, and unprecedented responsibility.

Note: The Ghost Map is shared between the science and history class, with students reading various parts in each class. *Fortitude* is read as a play in science, with students playing the parts of the various characters.

Name: Crocker/Owen/Knadle/Sodek Subject: Art

Focus Standards:

Analyze the role and development of the visual arts in past and present cultures.

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

Materials:

Art Supplies:

- Canvases
- Watercolor paints
- Acrylic paints
- Pastels
- Pastel paper
- Brushes

Activities:

Humanitas Art Project: Students research an artist from the romantic or impressionist movement. Students then create their own painting (w/ commentary), inspired by one of their readings, that depicts the positive or negative impacts of a new technology.

The Humanities Connection...

Students research and present a paper on an 18th or 19th Century artist. Students also create their own work of fine art, inspired by one of their theme readings, that serves as commentary on the thematic unit. Students also include a two-page reflection paper that details exactly how their painting relates to themes developed in this unit.