Kidney Procurement Policy Project

In this project, students will study the decision making process involved when doctors must allocate scarce medical resources such as human kidneys. Students will watch an actual kidney transplant, research the current supply and demand for kidneys in the United States, and conduct a forum where they debate how specific factors such as age and chronic diseases should impact whether a patient receives a kidney.

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|  | Date | Class | Activity | Artifact | Completed |
| 1 | Mar 6 | English III | BBC One - Transplant | MoveNote Blog Transcript |  |
| 2 | Mar 10-21 | English III | Transplant Ethics | Argumentative Response |  |
| 3 | Mar 17-21 | Anatomy | Kidney dissection | Remove Urinary System |  |
| 4 | Mar 19 | 11th Grade CTE | Live Kidney Transplant  |  |  |
| 5 |  | 11th Grade CTE | OPTN Database | Visual Representation of statistics |  |
| 6 | Apr 3-11 | Anatomy | Urinary system presentations | Class presentations |  |
| 7 | Apr 24 | Anatomy | Disease report | Report due |  |
| 8 | Apr 22-24 | English III | Research | Short Answer Questions |  |
| 9 | May 5-20 | English III | Medical Forum Prep | Speeches & Questions |  |
| 10 |  | 11th Grade CTE | Medical Forum | Video of oral arguments |  |

**Activity 1 - BBC One: Transplant**

**Objective:** Students will watch a one hour BBC documentary Transplant (4/10/11), which traces how organs from a single donor are used to help a number of recipients. The students will blog comments and questions during the documentary using the Todaysmeet website.

**CTE Standard**

4.0 Technology: Students know how to use contemporary and emerging technological resources in diverse and changing personal, community, and workplace environments

8.0 Ethics and Legal Responsibilities: Students understand professional, ethical, and legal behavior consistent with applicable laws, regulations, and organizational norms

**Academic Standards:**

Common Core Speaking & Listening (11-12): Comprehension & Collaboration

**Discussion Questions:**

What is the process for donating/receiving an organ?

How do doctors interact with the person or families of those donating an organ?

How do doctors interact with the patient receiving an organ?

**Resources Needed:**

Chromebooks

Projector

Todaysmeet.com

**Activity 2 - Transplant Ethics**

**Objective:** Students will study the ethical principles that are considered when doctors are treating patients in general and in the case of organ transplants specifically. They will read background information from at least three sources: (1) Atul Gawande’s “Desperate Measures”; (2) Atul Gawande’s “The Learning Curve; (3) the OPTN Networks “Ethical Principles to be Considered in the Allocation of Human Organs.” They will then research the case of 10-year old Sarah Murnaghan, whose parents sued to get her on a transplant list for an adult set of lungs.

**CTE Standard**

1.5 Writing: Synthesize information from multiple sources and identify complexities and

discrepancies in the information and the different perspectives found in each medium

2.3 Writing: Write expository compositions, including analytical essays and research reports

**Academic Standards:**

Common Core Reading Informational Texts (11-12): 1-7, 10

Common Core Writing (11-12): Writing Arguments (1.0)

Common Core Writing (11-12): Writing Informative/Explanatory texts (2.0)

**Discussion Questions:**

What ethical principles must doctors consider when treating a patient?

What ethical principles are considered when allocating scarce resources such as kidneys? How do these ethical principles conflict with each other?

Who should have the authority to determine the ethical principles and how they are applied?

**Resources Needed:**

Copies of Gawande articles (“Desperate Measures” & “The Learning Curve”)

Chromebooks

**Activity 3 - Urinary system removal**

**Objective:** Students will identify and remove components of the urinary system.

**CTE Standard:**

5.1 Identify and ask significant questions that clarify various points of view to solve problems.

5.3 Use systems thinking to analyze how various components interact with each other to produce outcomes in a complex work environment.

**Academic Standard:**

*9 g. Students know* the homeostatic role of the kidneys in the removal of nitrogenous wastes and the role of the liver in blood detoxification and glucose balance.

**Discussion Question:**

Was there anything you encountered that seemed out of the ordinary when removing the urinary system?

Was their any signs of abnormal development?

**Resources needed:**

Dissecting tools

**Activity 6 - Urinary system component presentation**

**Objective:** Create a presentation analyzing a specific functional component of the urinary system. Presentation will include a working visual display, interactive handout, and use of technology.

**CTE Standard**

2.5 Communicate information and ideas effectively to multiple audiences using a variety of media and formats.

4.1 Use electronic reference materials to gather information and produce products and services.

**Academic Standard:**

1 a. Select and use appropriate tools and technology (such as computer-linked probes, spreadsheets, and graphing calculators) to perform tests, collect data, analyze relationships, and display data.

**Discussion Question:**

How does your topic relate to the entire urinary system?

How do you improve the functionality of your specific topic within the entire the urinary system?

**Resources needed:**

Internet

Appropriate technology

Anatomy & Physiology textbook

**Activity 7 - Research Paper**

**Objective:** Write a 2 page research paper on a disease related to the urinary system.

**CTE Standard**

B2.1 Know basic human body structure and function in relationship to specific care between prevention, diagnosis, pathology, and treatment.

B2.4 Compare normal function of the human body to the diagnosis and treatment of disease and disorders.

**Academic Standard:**

10 d. *Students know* there are important differences between bacteria and viruses with respect to their requirements for growth and replication, the body’s primary defenses against bacterial and viral infections, and effective treatments of these infections.

**Discussion Question:**

What symptoms could be visible when analyzing the cat urinary system?

What could the patient have done to prevent the disease?

**Resources needed:**

Internet

Anatomy & Physiology textbook

**Activity 8 - Medical Forum Research**

**Objective:** Students will familiarize themselves with two database search engines that they can use to find articles concerning kidney transplants: (1) the National Center for Biotechnology Information website (<http://www.ncbi.nlm.nih.gov/pubmed/advanced>); (2) the Wiley Online Library (<http://onlinelibrary.wiley.com/advanced/search>). They will read articles they find through these search engines that will help prepare them for their medical forum.

**CTE Standard**

1.5 Writing: Synthesize information from multiple sources and identify complexities and

discrepancies in the information and the different perspectives found in each medium

2.3 Writing: Write expository compositions, including analytical essays and research reports

**Academic Standards:**

Common Core Reading Informational Texts (11-12): 1-7, 10

Common Core Writing (11-12): Writing Informative/Explanatory texts (2.0)

**Discussion Questions:**

What are key search terms useful for filtering articles on kidney transplants?

What is a kidney allocation score?

How do you cite an article for a research paper?

**Resources Needed:**

Internet Access

**Activity 9 - Medical Forum Speeches**

**Objective:** Students will prepare for their medical forum debate concerning kidney transplants. Students assigned to the medical board will prepare questions for those presenting oral arguments; students assigned to advocacy groups will prepare their presentations (including a written speech).

**CTE Standard**

1.5 Writing: Synthesize information from multiple sources and identify complexities and

discrepancies in the information and the different perspectives found in each medium

2.3 Writing: Write expository compositions, including analytical essays and research reports

**Academic Standards:**

Common Core Reading Informational Texts (11-12): 1-7, 10

Common Core Writing (11-12): Writing Arguments (1.0)

**Discussion Questions:**

What is the central claim of your argument?

What evidence can you present to support your argument?

How can you most effectively arrange that evidence for your audience?

**Resources Needed:**

Internet Access

Google Drive Document