03. Facial Transplantation: Science Fiction?!

Content Area: **Science**
Course(s):
Time Period: **Semester 1**
Length: **4 weeks**
Status: **Published**

Standards

HS-LS1	From Molecules to Organisms: Structures and Processes
HS-LS1-2	Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
HS-LS3	Heredity: Inheritance and Variation of Traits
HS-LS3-1	Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring. All cells contain genetic information in the form of DNA molecules. Genes are regions in the DNA that contain the instructions that code for the formation of proteins.
HS-LS3-2	Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.

Enduring Understandings

- Heroic medical intervention is often necessary for catastrophic injury.
- Intervention is not without risk, and not a guarantee of a successful interaction.
- Technical competence is different from, and often at odds with, ethical consideration.
- Life experiences (upbringing, culture, religion, society, education) inform stances on bioethics.

Essential Questions

- How can catastrophic injuries to the body be corrected surgically?
- How are ethics, economics, and medicine balanced within patient interactions?
- How do the course Big Ideas align with medical procedure?

Knowledge and Skills

NGSS Science Skills/Practices:

- Asking Questions

- Constructing Explanations.
- Obtaining, Evaluating, and Communicating Information.

Knowledge:

- Be able to describe some of the early work done to justify developing facial transplantation surgeries.
- Detail the general facial transplantation procedure.
- Identify known risks for patients undergoing these procedures, and be able to predict contextual, patient-specific ones.
- Relate the clinical situations presented in our video as viewed through the lenses of the major course themes.
- Discuss the complexities of allografting, both from an ethical and a biological standpoint.
- Divulge and support their own opinions as to the ethics of these surgeries.
- Assess treatment options for each of the situations.
- Hypothesize interventions if homeostasis is disrupted as a result of these symptoms.

Assessments

https://docs.google.com/document/d/1wR7bQF-8AQoRrt0g4C3hKja0yjwDjC9_BiAmONWbTcI/edit?usp=sharing

Modifications

https://docs.google.com/document/d/1ODqaPP69YkcFiyG72fIT8XsUIe3K1VSG7nxuc4CpCec/edit?usp=sharing