# 03. Facial Transplantation: Science Fiction?!

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

## Standards

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|---|---|
| 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.<br><br>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