

Objective

By the end of this lesson, you will be able to understand some key concepts in biology related to the interstellar movie.

Materials and Prep

- Pen and paper
- Access to the interstellar movie or relevant clips

No specific prior knowledge is required for this lesson.

Activities

- Watch the interstellar movie or relevant clips to get familiar with the space exploration theme.
- Research and identify biological challenges that humans may face during long-duration space travel.
- Create a fictional character who is a biologist on a space mission. Describe their role and the importance of their work in maintaining the crew's health and well-being.
- Design a hypothetical experiment to investigate the effects of space travel on plant growth. Consider factors such as microgravity, radiation, and limited resources.

Talking Points

- **Microgravity:** In space, there is very little gravity or microgravity. This can affect how our bodies function and how plants grow. For example, without gravity, fluids in our bodies may not distribute properly, and plants may grow in different directions.
- **Radiation:** Space is filled with different types of radiation, including cosmic rays and solar radiation. These can be harmful to living organisms and can cause DNA damage. Scientists are studying ways to protect astronauts from radiation during long space missions.
- **Life support systems:** In space, we need to bring our own air, water, and food. These resources are limited, and scientists are developing technologies to recycle and reuse them. It's important to find sustainable ways to support life during long-duration space travel.
- **Biological research in space:** Scientists conduct experiments in space to understand how living organisms adapt and survive in such extreme conditions. This knowledge helps us prepare for future space missions and potential colonization of other planets.
- **Importance of biology in space exploration:** Biologists play a crucial role in ensuring the health and well-being of astronauts during space missions. They study how the human body responds to space travel and develop strategies to mitigate the negative effects.