



# Pre and post-visit activities for *Astronomical Anatomy* Field Trip Package

An astronomy and anatomy lesson for 2<sup>nd</sup>-8<sup>th</sup> grade.

## Learning Goals (for field trip and pre/post-activities)

Astronomical Anatomy is an astronomy and life science field trip package designed for students in 2<sup>nd</sup> through 8<sup>th</sup> grade. Through pre-visit, field trip, and post-visit activities, students will:

1. Understand that astronauts experience different conditions in space than on Earth.
2. Understand how being in space impacts an astronaut's body.
3. Understand the basics of human body systems through the context of astronauts training for space missions.
4. Understand the importance of exercise and healthy eating habits for everyone.
5. Learn to work as a team and problem solve like astronauts.

## Standards Addressed

### *Next Generation Science Standards (NGSS)*

- **4.LS1.D.1** Use a model to describe that animals receive different types of information through their sense, process the information in their brain, and respond to the information in different ways.

### *Common Core Standards*

- **5.H.3.C.a** Identify and describe the contributions of historically significant individuals from 1800-2000
- **5.H.3.I.b** Identify political, economic, and social causes and consequences of the Cold War on the United States

### *National Health Education Standards (NHES)*

- **1.5.1** Describe the relationship between healthy behaviors and personal health
- **1.5.2** Identify examples of emotional, intellectual, physical, and social health

## Pre-visit Activities

Before coming to the Science Center, consider doing some of the following activities to prepare your class for the field trip.

### *Weight in Space*

Fill three identical, opaque containers with:

1. 3 Cups beans (using cotton balls to fill open space) – this is 3000 beans on Earth
2. ½ Cup beans (using cotton balls to fill open space) – this is 3000 beans on the moon
3. Empty – this is 3000 beans in space

Have students compare the weight of the three containers, making observations and hypotheses for how different gravities may impact astronaut health.

### *Humans in Space*

Have students research the history of space travel and the astronauts currently working on the International Space Station (ISS).

### **Post-visit Activities**

After your field trip, remember your experience and extend the learning by using some of the following resources.

- Research possible habitable planets and/or moons. What makes those places possible colony locations?
- Build a Colony
  - Students design a space colony for the location of their choosing (e.g. Moon, Titan, Mars, etc.), taking into account the needs of the humans who would live there. How would they overcome the challenges of living on other planets with conditions different than Earth?
- Write a biography of an astronaut.
- Become an astronaut!
  - Have students write out a plan for what they would need to do to become an astronaut when they grow up.

### **Resources**

- The Human Body in Space: <https://www.nasa.gov/hrp/bodyinspace>
- NASA Twin Study: <https://www.nasa.gov/twins-study>
- Space Travel: Here's what happens to the human body: <https://www.bbc.com/news/world-42627341>
- Health Experiments Launch for Space: <https://www.colorado.edu/today/2018/12/06/health-experiments-launch-space-station>
- Education Activities from the Lunar and Planetary Institute:  
<https://www.lpi.usra.edu/education/resources/>