GRADES 6–8

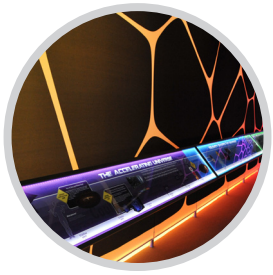
The Universe: A Walk Through Space & Time

Be transported to the distant corners of the cosmos and witness how the Universe evolved over 13.7 billion years—from the Big Bang to modern day.

Guide Overview

This guide includes suggestions for how to engage your students and facilitate an age-appropriate learning experience in the **The Universe: A Walk Through Space And Time** exhibit.

Highlights & Related Questions



FIND Tell students to enter the exhibit through the glowing hallway.

DO Instruct a student to read aloud to the group the first square yellow panel immediately to their right, titled Take a Walk Through the History of Time.

ASK Based on the information you just read, can you recall how old the Universe is? Can you explain what has been happening since the Universe began? **It has been cooling and expanding and has been becoming more organized.**

FIND Instruct students to move through the hallway.

DO Instruct students to try to step on the green, blue and red particles on the ground. Encourage students to interact with the entire hallway. Have them make observations as they step.

ASK What happens when you step on the images? **The lights on the floor move and react to their motion.** What do you think these images represent? **The first display on the floor represents particles in the very early Universe. The center display represents exploding stars, called supernovae. The final display shows the effect of gravity on objects in space.**

FIND Have students locate the five-paneled large video screen at the end of the hall.

DO Encourage them to watch the movie. Tell them this is a video simulation that gradually zooms out from Chicago to the whole Universe.

ASK Periodically, ask them: What do you think this is showing? **Planets, solar system, stars, Milky Way, galaxies, Universe.** What changes can you observe between different levels of size and scale?

FIND Have students locate the large video screens at the How Big is Big? How Small is Small? station.

DO Using the touch screen, have students choose different sizes to explore (microscopic, Earth, galactic, etc.) and watch the videos play.

ASK How are these levels of size and scale different? How are they the same? What are some observations you have about the items in each video? Where do human beings fit in these levels of size and scales? What is the largest level of size, which contains all other levels? **The Universe!**

FIND Around the corner from the video screen, have students locate the camera pointed at a picture of the Moon at the Telescopes Are Time Machines station.

DO Instruct some students to step in front of the camera in front of the image. Have other students stand behind the camera and make observations of their classmates' image on the screen next to the wall.

ASK What do you see? **They see their classmates, but the image is delayed by 1.3 seconds.** Why do you think the image is delayed? **Because that is the amount of time it takes light to travel from the Moon to Earth.** If it takes 1.3 seconds for light to travel from the Moon to the Earth, how long do you think it takes for light from the Sun to reach us? **8 minutes.** Do you think light from another star in our sky would take more or less time to reach Earth? **More time since the other stars are farther away than our sun.**

FIND Across from the Moon camera, have students locate the You Are Star Stuff station.

DO Encourage students to investigate the interactive.

ASK What types of elements make up the human body? **Answers include carbon, calcium, iron, oxygen, nitrogen.** Where do they come from? **They are formed in the center of stars through a process called fusion. Heavier elements are formed in supernovae.**