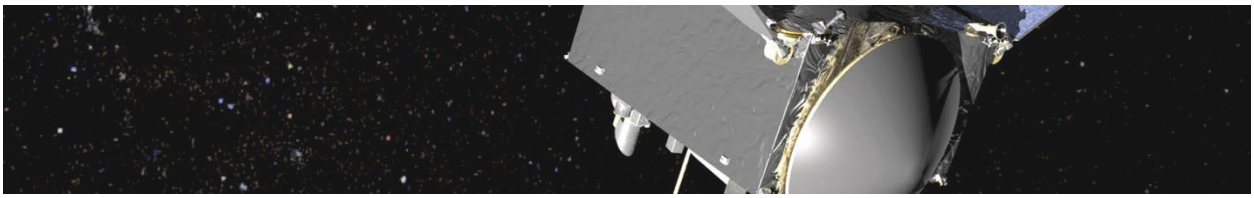

Exploring the Solar System:
A Professional Development Training

Activities Overview

Sorting the Solar System
nightsky.jpl.nasa.gov/download-view.cfm?Doc_ID=459

Using images of solar system objects, this activity prompts discussions of the characteristics of asteroids, comets, planets, and moons. Practice scientific thinking by sorting objects into categories according to their common qualities.

Active Accretion
discovery.nasa.gov/education/pdfs/Active%20Accretion_Discovery_508.pdf

Participants model the accretion of specks of matter in our early solar system into chondrules and asteroids—and they do it dynamically. This activity is a great way to teach cool science concepts about our solar system's early formation and the development of asteroids and planets while burning off energy. Participants end by discussing the strengths and limits of this model.

Planet Swap
In this activity, participants attempt to assemble a meaningful sentence by successively turning over cards with words on them. The point is made that we change our ideas of what a story may be as we gather more information. In addition, people who have similar information may not agree on its meaning. Science works this way.

Jump to Jupiter
www.lpi.usra.edu/education/explore/solar_system/activities/familyOfPlanets/jumpJupiter

Participants jump through a course from the grapefruit-sized "Sun," past poppy-seed-sized "Earth," and on to marble-sized "Jupiter" — and beyond! By counting the jumps needed to reach each object, children experience first-hand the vast scale of our solar system.

Crater Creations
www.lpi.usra.edu/education/explore/mars/surface/craters.shtml

In this activity, teams of children ages 8-13, experiment to create impact craters and examine the associated features. The children observe images of craters and explore how the mass, shape, velocity, and angle of impactors affects the size and shape of the crater.

Splat!
www.lpi.usra.edu/education/explore/marvelMoon/activities/familyNight/splat/index.shtml

Participants model ancient lunar impacts using water balloons. Like huge asteroids, the water balloons are destroyed on impact and leave a splash (i.e. a “crater”) that is 10 to 20 times wider than the impactor.

Making Regolith
ares.jsc.nasa.gov/interaction/lmdp/documents/58199main_Exploring_The_Moon.pdf

Participants drop impactors onto layers of graham crackers! The process models how impacts throughout the Moon's history have broken rocks down into a mixture of dust, rocks, and boulders that covers the lunar surface.

Edible Rocks
ares.jsc.nasa.gov/education/program/ExpMetMys/LESSON8.PDF

Participants analyze and discuss candy bars with the same terminology used by geologists to study rocks from space.

Meteorite Kits
An introduction to meteorites developed and compiled by Dr. Larry Lebofsky of the Planetary Science Institute.

Strange New Planet
www.lpi.usra.edu/education/explore/beyondEarth/activities/newPlanet.shtml

In this simulation of space exploration, participants plan and carry out five missions to a “planet” and communicate their discoveries to their family or a friend.

Investigating the Insides

www.lpi.usra.edu/education/explore/solar_system/activities/insides

In this 30-minute activity, teams of children, ages 10 to 13, investigate the composition of unseen materials using a variety of tools. This open-ended engagement activity mimics how scientists discover clues about the interiors of planets with cameras and other instruments on board a spacecraft.

Down to the Core

pbskids.org/designsquad/parentseducators/guides/mission_down_to_the_core.html

Participants design and build a device that can take a core sample from a potato.