

Dance of the Planets, Grades 2-3

Program Description:

Students learn planet features, planet lore and orbital motions, and make Solar System bodies out of craft materials. In a narrated musical performance, students dramatize the origins and orbits of the sun, planets, asteroids and comets.

Vocabulary:

asteroid	Jupiter	Pluto
asteroid belt	Mercury	radiation
circle	Mars	rotate
comet	mission	Saturn
Kuiper belt	Moon	Solar System
earth	mythology	space
ellipse	Neptune	star
force	Oort cloud	sun
gas	orbit	supernova
galaxy	poles	Uranus
gravity	planet	Venus

Possible Class Activities

- Students learn appearance and relative sizes of planets, asteroids and comets and make these bodies out of craft materials
- Students measure and draw accurately spaced orbits on the ground
- Students learn direction and speed of planets’ revolution and rotations and practice walking in their orbits
- Students dramatize the formation of the solar system out of rotating and collapsing gas clouds
- Students demonstrate and dramatize the orbit of each planet and several asteroids and comets

Pre-Visit Activities (in your classroom):

- Review vocabulary (above).
- Discuss differences among planets (size, temperature, surface features, distances)

Post-Visit Activities:

At CSSC:

- Visit exhibit: “Our Place in the Universe”
- Visit Exhibit: “Planet Trek”
- Visit exhibit: “Planetary Landscapes: Sculpting the Solar System”

In your classroom:

- Have students write about new things they learned about the Solar System
- Hang planet models in your classroom at the appropriate distance scale (For example use the following measurements in feet for planet distances from the sun 0.4, 0.7, 1, 1.5, 5, 9.5, 19, 30, 39)
- For planet orders from the sun, teach students a memory aid as “My Very Educated Mother Just Served Us Nine Pizzas”
- If space allows, arrange planet models around the sun (in their correct order from the sun) using [Solar System Live](#) to determine their current orbital positions. Update positions every week or month.
- Simulate impact cratering in the classroom (see cratering activities in [Solar System Classroom Activities](#) list)
- Make a comet with dry ice in the classroom (see comet activities in [Solar System Classroom Activities](#) list.)
- Have students look for and find planets in the night sky. Saturn and Jupiter will be visible in the evening sky during Winter and Spring 2003; Mars, from late Summer 2003, when it will be very bright, through Winter 2004. Venus is bright in the morning sky during Winter and Spring 2003. Discuss what these planets would be like, if you could travel to them.

Related Websites:

The Nine Planets <http://seds.lpl.arizona.edu/billa/tnp/>

An overview of the history, mythology, and current scientific knowledge of each of the planets and moons in our solar system. Each page has text and images, some have sounds and movies, and most provide references to additional related information.

Jet Propulsion Laboratory (JPL) – all about planets, missions, earth, space, and Solar System education:

- Home Page: <http://www.jpl.nasa.gov/>
- Top Images <http://pds.jpl.nasa.gov/planets/> and
- Exploration home page: <http://sse.jpl.nasa.gov/index.html>

Complete Lists of Online Resources:

[Solar System Images, Animations and Guides](#)

[Solar System Classroom Activities](#)

State of California Science Standards:

Grade 3:

Physical Sciences

1. Energy and matter have multiple forms and can be changed from one form to another. As a basis for understanding this concept, students know:

- a. Energy comes from the Sun to the Earth in the form of light
- d. energy can be carried from one place to another by waves, such as water waves and sound, by electric current, and by moving objects.
- e. matter has three forms: solid, liquid and gas.
- f. evaporation and melting are changes that occur when the objects are heated

2. Light has a source and travels in a direction. As a basis for understanding this concept, students know:

- d. we see objects when light traveling from an object enters our eyes.

Earth Sciences

4. Objects in the sky move in regular and predictable patterns. As a basis for understanding this concept students know

- d. that Earth is one of several planets that orbit the Sun and that the moon orbits the Earth.