

Activity 3:

Planning and Serving Food

Objective

The students will plan a 5-day flight menu and design a food tray that can be used in space.

Science Standards

- **Science as Inquiry:** Abilities necessary to do scientific inquiry
- **Life Science:** Matter, energy, and organization in living systems
- **Science in Personal and Social Perspectives:** Personal health
- **Physical Science:** Position and motion of objects

Mathematics Standard

- **Computation**

Helpful Hints

1. For K–1 students, food pictures from magazines and ads can be used to plan the menu. The students may also cut and paste pictures to construction paper to simulate the Space Shuttle food tray.
2. Some possible materials that can be used to build the food trays are boxes, cardboard, hook and loop tape (Velcro), magnets, foil, wood, construction paper, and glue. Encourage students to be creative in their designs.

Materials

USDA Food Pyramid Guide (Appendix G)
Food group and suggested daily servings chart
(Activity 4)

Background

Astronauts use special trays in space because of the special microgravity environment. These trays are designed to hold everything in place while food is being prepared and eaten. On the Space Shuttle, the trays used have straps on the back so that the astronauts can attach them to either the wall or their leg in order to hold them in place. They also have hook and loop tape on them to attach to the foods and drink packages; utensils are held in place with magnets. The ISS food tray has compartments to hold special bowl-like containers. They snap into place and hold the food in the tray. These containers are similar to single-serving frozen food dishes that can be found in the grocery store. The only difference is that

they are made of a hard plastic instead of aluminum or cardboard.

Procedure

The students will plan a nutritionally balanced 5-day menu for astronauts. It is important that astronauts receive the recommended daily caloric intake so they can maintain their energy level and good health. Use the Food Pyramid Guide in the appendix to nutritionally balance the meals. Using the recommended food group and suggested daily servings chart listed in Activity 4, choose foods that will fulfill the recommended daily allowances for the astronauts.

The students will design and build a tray to hold their meals. To help the astronauts eat their meals on the Space Shuttle, a special tray has been devised to help hold the different food types and packages in place. This prevents food from drifting in a microgravity environment.

Discussion

1. What types of problems might you face while trying to eat in space?
2. Are there other ways to serve space food?
3. Why is it important for astronauts to receive the recommended daily caloric and nutritional intake?

Extensions

Have the students plan and prepare a space food luncheon. The food trays the students designed and built will be used. The menu for the day will be selected from the International Space Station Daily Menu Food List. The school administration should be invited as well as community leaders and parents. Remember to invite the local media.

Students can cut food pictures from actual food containers and place rehydratables in zip-locking bags for Space Shuttle food. For ISS frozen foods, food pictures from frozen food packages can be cut to fit the recycled plastic frozen food containers. Foam core or plaster of paris can be used to give the package actual weight.

Assessment

Evaluate each food tray for design and usability. Verify that the meals planned are nutritionally balanced.

