

Lesson Plan
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Class: BME-530
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Lesson Title: Astronauts Training

Key Questions: How can you measure your physical condition?
Can you eat in space if there is no gravity to carry your food?
Grade Level: 6th

Objectives:

Students will practice some of the exercises that keep the astronauts in top physical condition during their training. Also, students will pretend to be in the space and to carry their food from their mouth to their stomach.

Content Objective: S-5 Physical Science

- Show that energy exists in many forms and can be transferred in many ways.
- Identify and predict what will change and what will remain unchanged when matter experiences an external force on energy change.

Materials: Room to exercise

*paper cup – water – straw- two chairs pushed together

Introduction

It takes about a year of study and training to become an astronaut. Candidates study subjects such as aerodynamics and spacecraft-tracking techniques. When an astronaut is assigned to a mission, he or she spends many hours training in a simulator that reproduces the conditions of space flight. Full-size of spacecraft help astronauts practice the tasks they will perform in space. Everything from entering and leaving the spacecraft to preparing a meal.

Anticipatory Set:

This lesson will introduce the students to have knowledge about the aerodynamics and space tracking techniques. Students will learn that astronauts practice maneuvers at high altitudes even more astronauts experience near-weightlessness. Also, the students will simulate the tasks that astronauts perform in space including preparing and eating meals. Food

in the space may not have much taste. In a weightless environment astronauts often feel cold like symptoms such as runny nose that makes smelling and tasting more difficult.

Modeling the behavior:

1. Ask students for their attention and begin discussion by asking them what they know about the astronauts?
2. Ask the students what they know about physical science and gravity?
3. Ask students if they think astronauts can easily eat in the space?

Guided Practice:

Teacher will call the students in groups pretending they are astronauts in the space. Students will try doing some of the exercises astronauts do in their training such as, curl ups, sit and reach, pull ups, and push ups. Teacher will tell the students to lie on the floor to do “curl ups” having a partner holding their feet. Cross arms across your chest. Pose upper body until elbows touch their thighs, then lower yourself back down until shoulders blades touch the floor. “Sit and reach”, sit on the floor, feet shoulder width apart. How far forward can you reach?

For eating exercises, fill the cup with water, put the straw in it, and place it on the floor at the end of the two chairs. Lie on the chairs with your head hanging down so that your mouth is lower than your stomach.

Check for Understanding:

Can you drink the water?

Do you think you could still eat and drink in a near weightless environment?

Independent Practice:

Students will do their own exercises and try to drink water from a cup with water.

Assessment:

The students will be assessed through a self evaluation and in class critique. I will assess the students according their aptitudes to do the exercises and to learn how to reach or drink water from the cup.

Modifications for students with disabilities:

Exercises would be simplified by having them just do easy exercises just pretending they are in the space. The teacher would be a visual model to make them an easy task to do the exercises.