Making a Spring Scale

Summary

Students will learn about gravity by constructing a spring scale to measure it.

Time Frame

1 class periods of 60 minutes each

Group Size

Small Groups

Materials

rubber band ruler ring stand ring paper clip metal washers or nuts balance an unknown weight (find objects that weigh about as much as 2 or 3 of the nuts) - student sheet

(attached)

Student Prior Knowledge

Students should understand that gravity is the force that pulls all objects toward Earth's center. They should know that weight is a measurement of the pull of gravity on an object and is different from mass.

Instructional Procedures

Read student sheet with students and show them where materials are found.

Allow time for students to build their spring scale.

Discuss student results. See how many groups have the same measurement for the unknown object.

Show students an actual spring scale and discuss the units. If the scale is labeled "newtons" it is showing the force exerted by gravity on the object. If the scale is labeled "grams" or "kilograms" it is taking advantage of the fact that on Earth, mass and weight can be compared. This label would not be accurate on the moon.

Assessment Plan

Scoring Guide

1. Students set up the scale correctly	4
2. Students collect and record data	4
3. Students correctly answer analysis questions	4
Answers:	
Answers will vary	
Answers will vary	

The rubber band probably will not stretch uniformly, making measurement inaccurate. The mass would remain the same? The nut would weigh one sixth of its weight on Earth. The spring in a spring scale will hold up to more stretching.

4. Student writes thoughtful conclusion......4

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

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