Bag of Balls

Summary

Students in small groups will determine the density of various balls and predict their ability to float or sink.

Time Frame

1 class periods of 45 minutes each

Group Size

Small Groups

Materials

Zip lock bags with 5-7 Balls. (nerf, ping pong, super, wood, Styrofoam, marble, wiffle)
Calculators
Overflow cans and measure the water for the volume. A small beaker full of water in a large beaker will also work for the Overflow cans.
Graduated Cylindar
Metric rulers and string if you want to use the diameter for the volume formula
Triple beams
Aquarium 3/4 full of water to test the balls in after.
(you could use overflow cans and measure the water for the volume)

- Student worksheet

Student Prior Knowledge

mass, volume, density, formula for a sphere volume, density of water.

Instructional Procedures

Special teacher procedures, safety notes, and suggestions:

In teams of 2-4 predict if the balls will float or sink in water.
Discuss how to measure the volume of a sphere. It can be done with an overflow can and measuring the water or with a string to measure the diameter
If they use the diameter use this formula. (use the TI73 calculator) # for diameter y to the xth key 3 X 0.5
Have them now figure out the mass and volume of the balls then the density.
After all students are done the teacher will put the balls one at a time in the water to determine if they will float or sink.
Discuss the reasons. Make sure that they are understanding density.

Assessment Plan

Check for completeness and correct answers.

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

Utah LessonPlans