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Subject CSU PHY.VAN

Title: Physics Aquatic Dumbbell

Objective:-How much weight do I need to immerse the dumbbell (used for Aquatic Exercise) completely in the water?

Materials:-(1)One Dumbbell(available in Sports Authority for Aquatic Exercise)

(2)Weights (up to 3 kg).

(3)Suspension to hold weights inside the water.

(4)A transparent deep plastic container filled with Water.

(5) Ruler for measurements

(6)calculator

(7)graph paper.

Procedure:-1) Weigh the dumbbell in Air and record the weight. Then fill up the plastic container with water. Find the amount of water it is occupying.

(2). Find the diameter of the end part of the dumbbell.

(3) Find the length of the cylinder of the dumbbell Also find the thickness of each end part of the dumbbell Find the length of the middle of the dumbbell..

(4) Find the circumference of the middle part of the dumbbell.

(5) Immerse the dumbbell in the water and get the reading of how much it immerses in the water. Then suspend 1 kg from the middle of the dumbbell and take measurement to see how far it goes down below the surface. Then repeat this for 2 kg and 3 kg. Continue adding weights until it completely immerses in the water.

Get the readings and create a chart. Plot the graph.

Weight of 1 Dumbbell = grams

Diameter of Cylinder of Dumbbell = cm.

Depth of Water in Plastic Container= cm.

Immersion of Dumbbell / Mass Attached to D.B.

Plot the Graph Of Immersion Of Dumbbell against the Mass Attached to D.B.

Predict the relation between depth and mass of the dumbbell.

Questions

- 1)What will be the mass attached to bring Dumbbell to the depth of 5 cm.?
- 2)What will be the mass attached to D.B. to the depth of 20 cm.?
- 3)What Formula can you use to find the relation between Depth and Weight?
- 4) What is the benefit of using Aquatic Dumbbell in the water?