



Bag of Bones

Demonstrating the Effect of Microgravity on Bones

- 1) To calculate the amount of cereal in Bag 2, calculate 90% of the Normal Bone Density as shown below. Fill Bag 2 with this amount of cereal, which represents a loss of 10% of the bone mass.

Full Bag Count (Number of Pieces of cereal in Bag 1)	X 0.90 =	Amount of Cereal in Bag 2 (Bone Mass Density of Bag 2)
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- 2) Use a similar method to calculate 70%, and 50% of the Normal Bone Density, and fill Bags 3 and 4 with these amounts. Record the count of "bone" placed in each bag on your recording sheet.

Normal Bone Density = _____ pieces of cereal in Bag 1
Density of Bone 2 = 90% of Bag 1 = _____ pieces of cereal
Density of Bone 3 = 70% of Bag 1 = _____ pieces of cereal
Density of Bone 4 = 50% of Bag 1 = _____ pieces of cereal

- 3) Determine the percentage of bone mass that was left unaffected by the impact of a heavy object, such as a book. To calculate this percentage, use the formula:

Number of Unaffected Cereal Remaining in the Bag	÷	Original Bone Mass Density of the Bag	X 100 =	Percentage of Unaffected Bone Mass
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- 4) Now, determine the percentage of bone mass that was affected. To calculate this percentage, subtract the unaffected bone value percentage calculated above, from 100.

100 -	Percentage of Unaffected Bone Mass	=	Percentage of Affected Bone Mass
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