

Ship the Chip

Student Worksheet: Evaluation

◆ Evaluation Phase

Once all packages have arrived at your school, you will work in teams to evaluate the packages.

◆ Scoring

The following three measurements must be made for each incoming package:

1. Mass of the package in Kg's to at least 3 significant figures.
2. Volume of the package in cubic centimeters to at least 3 significant figures.
3. Intactness score of the chip on the following scale:
 - 100 Points: like new, perfect
 - 50 Points: slightly damaged; cracked but still in one piece
 - 10 Points: broken in 2 - 5 pieces
 - 5 Points: broken in 6-20 pieces
 - 1 Point: broken into more than 20 pieces; crumbled

Determine the overall score for each package to determine the top scoring "engineering team." Use the following equation:

$$\text{Overall Score} = \frac{\text{Intactness score (c)}}{[\text{mass in Kg (a)} \times \text{volume in cc (b)}]}$$

Example: a. mass = 0.145 kg b. volume = 240 cc c. intactness score = 100

Overall Score: (c) 100 / [(a) 0.145 kg x (b) 240 cc] = 2.87

Make a chart to keep track of the packages for each engineering team in your class and see who has the best overall score.

Package ID #	Mass (KG)	Volume (CC)	Intactness Score	Overall Score
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◆ Reflection

1. What aspect of the design of the package that had the best overall score do you think lead to its success?

2. If you had a chance to do this project again, what would your team have done differently?

◆ Presentation

As a group, make a presentation to the class about what you learned during this activity.