

Student Instructions Sheet

In the solution of this problem you should:

- Show calculations, as appropriate, that you have used in your solution of the problem;
- Use correct mathematical statements;
- Explain what you are calculating at each stage of the solution;
- The quality of your discussion, reasoning and how well you link this to the context will determine the overall grade;
- YOU MUST SHOW ALL WORKING

Information

The Young Enterprise team is making beeswax food wraps.

A wrap is made using a piece of cotton material, beeswax and almond oil. The beeswax and almond oil is melted together and then spread over the cotton material. The cotton material is then hung up to dry.

A local beekeeper has donated 7 500g of beeswax, which equates to 30 cups. From the sewing department they have been given 98 500cm² of left over cotton material. The team have purchased a 2 litre bottle of almond oil.

Three different sizes of food wraps are being made; small, medium and large.

The team have researched some food wrap recipes on-line and have decided on a recipe that uses 900cm² of cotton material, one third of a cup of beeswax and 25mls of almond oil for a large wrap; 750cm² of cotton material, two ninths of a cup of beeswax and 15mls of almond oil for a medium wrap; 500cm² of cotton material, one ninth of a cup of beeswax and 5mls of almond oil for a small wrap.

Task 1

Using the information above determine how many small, medium and large food wraps the team can make if they use all of their supplies.

Task 2

Before production began, the team asked their supervisor to check their product design. The supervisor suggested they increase the quantity of almond oil to make the wraps smell nicer. Each wrap needs an extra 5mls of almond oil. The supervisor donates a 700ml bottle of almond oil to help the team cover the increase in almond oil. Investigate how this will impact on the number of small, medium and large food wraps the team can make if they use all of their supplies.