

MATHEMATICS METACOGNITION

LESSON KS3

PLANNING

Hand out the worksheet with the different prices – learners to work in small groups.

Set aside 5 minutes for the learners to read through the information and to decide what to do – choose a strategy.

No calculations to be made at this stage – only decide what needs to be done.

DISCUSSION

Ask different groups to feedback on what strategies they have decided to use. Some possible questions to be asked:

- what is the best way of laying out the calculations?
- what further information is needed (e.g. 1kg = 1000g)?
- are you going to allow Megan's Mum to shop at one shop only, or all the shops? (Perhaps the teacher would like to force a choice here?)

CALCULATION

Ask the groups to go on to complete their calculations (approximately 25 minutes).

The task can be made more difficult by not allowing the use of calculators.

Ask each group to nominate a person to feedback on their advice to Megan's Mum.

REFLECTION

Ask each group to feedback on their advice to Megan's Mum – what shop(s) to use; the cost of buying all the food and drink.

Optional: Announce the correct answer.

PLANNING (2)

Ask a question which forces the learners to make additional calculations to discover the answer.

For example:

- Does the answer change if Megan's Mum is allowed to shop in one shop only?
- Does the answer change if Megan's Mum is allowed to shop in any of the shops?
- Does the answer change if the special offers are not running (and the cost of jelly in Asda is equal to Tesco's price)?

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CALCULATION (2)

Allow time for the learners to make additional calculations to answer the question(s) from (Planning (2)) previous page.

REFLECTION (2)

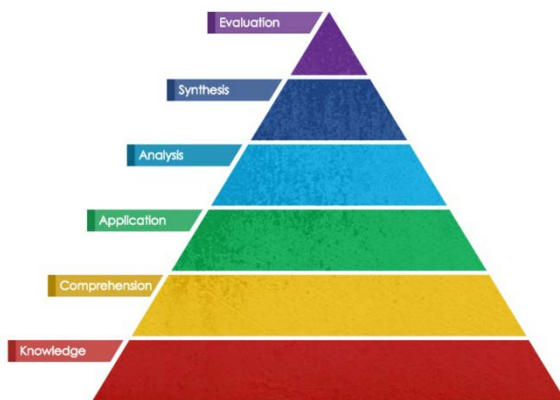
Feedback. Possible questions to ask:

- Did you write enough detail the first time around in order to answer the additional questions?
- What did you do well as a group this time?
- If you were to do a similar task in the future, what would you do differently?

FURTHER DETAILS

The purpose of this lesson is to get the learners to consider the methods they are using to solve a particular problem. By discussing amongst themselves, and with other groups, the learners consider the most effective methods of tackling a real-world problem.

The lesson can be thought of as ascending the usual triangle from Bloom's taxonomy, shown below.



The lesson starts at the bottom of the triangle, whilst planning strategies. Do the learners **understand** what needs to be done?

What further **information** do they need, e.g. remembering that 1 litre = 1000 ml.

In the calculation portion of the lesson, the learners use their number skills to try to solve the problem. They **apply** their chosen method to try to give sensible advice to Megan's Mum.

During the first reflection session, the learners state their answer to the problem, before **analysing** their solution in the context of other groups' solutions.

Towards the end of the lesson, the learners attempt to use their calculations to answer some additional questions. They have a chance to **evaluate** their strategies at the end of the lesson – is there scope for improvement in the future?

Note: The timings in the lesson plan are given as guidance only – it would be possible to use several lessons to fully explore all the aspects of this problem.