

Maths task

Aims

This is a progress task sheet. You need to work through the task sheet using your maths skills. There are two parts to the task on this sheet. Try both, and see how far you get.

Progress table

Here is a progress table for the task. Once you have finished the task, look through the table and tick the boxes you think you have done correctly.

Progress stage	I have . . .	
Developing (Level 3)	<ul style="list-style-type: none">stated the formula used to calculate the total magnification of a microscope from the Support sheet.	
Developing (Level 4)	<ul style="list-style-type: none">described how to calculate the total magnification of a microscope using the information on the Support sheet.	
Secure (Level 5)	<ul style="list-style-type: none">independently described how to calculate the total magnification of a microscopecorrectly identified the discount available for buying 15 microscopes.	
Secure (Level 6)	<ul style="list-style-type: none">correctly calculated the total magnification of a microscopecorrectly identified which microscope should be used to view human cheek cells.	
Extending (Level 7)	<ul style="list-style-type: none">calculated the total cost to purchase 15 microscopes.	

The task: Superscope microscopes

You work for *Superscope microscopes*, an online shop which sells microscopes. One of your roles is to answer customer questions.

Today, you must reply to two emails. You will need to use the information provided, and your maths skills, to answer the questions correctly.

Part 1

Reply to the following email from a customer.

Hello

I have just bought a new microscope. Could you please tell me:

- 1 How do you work out the total magnification of a microscope?
- 2 My microscope has a $\times 5$ eyepiece lens, and a $\times 30$ objective lens. What is the total magnification?

Many thanks

Elliot Johnson

Part 2

Another customer has emailed. You need to prepare a reply.

Dear Sir/Madam

I am a new science technician at King Arthur's School. I have been asked to order some new microscopes for the school. Please can you answer the following questions:

- 1 What type of microscope should I buy, so that students can study human cheek cells in detail?
- 2 How much does one microscope cost?
- 3 I have read on your website that you offer discounts when a customer buys more than one microscope. If we buy 15 microscopes, what would the total price be?

Yours faithfully

Miss V Simmons

Information**Types of microscope available**

Type of microscope	Magnification	Minimum size of object being observed (mm)	Cost (£)
basic microscope	×20	0.12	50
stereo microscope	×40	0.06	100
compound microscope	×400	0.006	150

Size of common cells

Cell	Size (mm)
cheek	0.05
plant	0.25
amoeba	0.30

Discount for bulk buying

Number of microscopes	Discount offered (%)
up to 9	0
10 to 19	10
20 or more	15