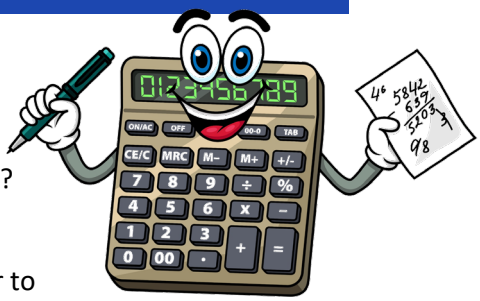
EPro8 Challenge

Engineer Problem Solve Innovate

Peer Review: Maths Layout



Imagine you did the calculations to build a bridge. How strong does it need to be? How thick should the beams be? How much bracing is required?

You want to make sure your calculations are correct, so you get another engineer to check them. This is called peer review.

Engineers need their work to be checked by others. This means their maths must be clearly labelled and easy to understand. You can achieve this by using good layout, labels, titles and units, by clearly showing your working, and ALWAYS KEEPING YOUR ANSWERS.

Watch the Maths Layout Video: https://youtu.be/mylZcIF9ylw

Sleepy Time – Bed Calculations

You are designing a bed. You need to calculate the dimensions for the bed so that there is extra space around the bed. The bed should be 300mm longer and 600mm wider than your tallest team member.

Below is a template of how a good maths solution should be laid out.

Title				
Bed Size				Start with a title. Let's use "Bed Size".
Subtitle				Something like "Lisa's Measurements".
Label	=		unit	Measure your teammate lying down
Length	=		mm	and their width (don't forget the units).
Label	=		unit	
Subtitle				Write "Bed Size Calculations".
Label	=	Words for Maths (Formula)		A formula is the maths using words
Length of Bed	=	Length of Person + Extra Space		
	=	Maths	+ 300mm	
	=	Solution unit		
Label	=	Words for Maths (Formula)		Repeat this for the width of the bed.
	=	Maths		
	=	Solution unit		Check that your answer makes sense

Sleepy Time – Peer Review

Swap your workbook with other students and answer the following questions to see if you can peer review their maths.

How wide were they when lying down? _____

Was this width in metres, mm or cm? _____

Was their maths correct? _____

What were the final dimensions of the bed? _____

Now you get to be the "teacher" and mark their maths:

Are there headings above each part so you know what is being calculated? _____

Are all the "equals" signs in a nice tidy row? _____

Are there units after all measurements? _____

Are there units after the solutions? _____

Paint the Classroom

We are going to repeat this exercise, but we won't give you as much help this time.

Calculate how much paint you will need to paint the floor of your classroom.
You will need to work out the area of your classroom. Remember area = width x length.
Every litre of paint can paint an area of $10m^2$.

Title

Subtitle — Write "Classroom Measurements".

Label = unit — Use metres when calculating area.

m

Label = unit

Subtitle — Write "Paint Calculations".

Label = Words for Maths (Formula)

Area = Width x Length

= Maths

= Solution unit

Label = Words for Maths (Formula) — Each litre of paint will cover $10m^2$.

Paint Volume = Area ÷ Paint Coverage

= Maths

= Solution unit

Check that your answer makes sense.

A Tower of Chairs

We are going to do one last exercise, but this time you won't have a template. You can look back at the previous page to see how you should lay this out.

Measure the height of one chair.
Stack two chairs on top of each other and measure the height.
How much taller is two chairs than one chair?
If you were to stack ALL the chairs in the classroom into one tower, how tall would this be?

(Ignore the fact that tower would just fall over)

Check that your answer makes sense.

Tower of Cheers – Peer Review

Swap your workbook with other students and answer the following questions to see if you can peer review their maths.

Can you understand the maths and how they solved it? _____

What height did they say the tower would be? _____

Is their maths correct? _____