Guide to: Histograms

maths Links

Explanation:

In a histogram for grouped continuous data with unequal class intervals, the vertical axis plots **Frequency Density** rather than frequency, and the **area of each bar represents the frequency**. Always add a column for class width and use the formula triangle:

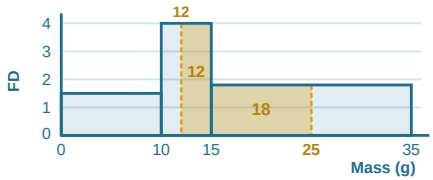
Frequency Density $= \frac{\textbf{Frequency}}{\textbf{Class Width}}$ and **Frequency = Frequency Density × Class Width**. If an interval is cut part-way through (e.g. estimating how many values exceed 25 in a $20 < t \leq 40$ bar), use the fraction of the bar's width.

Example 1: Calculate the frequency densities for the grouped table below.

Mass (m g)	Freq (f)	Width (w)	FD = f ÷ w
$0 < m \leq 10$	15	10	**1.5**
$10 < m \leq 15$	20	5	**4.0**
$15 < m \leq 35$	36	20	**1.8**

Plot bars with heights **1.5, 4.0, and 1.8**.

Example 2: Using the table in Example 1, estimate how many items have mass between 12 g and 25 g.



Solution:

Split 12 g to 25 g across both bars:

- **12 to 15 g:** 3 × 4.0 = **12**
- **15 to 25 g:** 10 × 1.8 = **18**

Answer: 12 + 18 = 30 items

Worksheets and other links					
Video Lesson on this topic	Video		**Naiker Maths**	Qs	Ans
Ken Stafford (Past Paper Qs)	Qs	Ans	**Dr Austin Maths**	Qs	Ans
Maths Genie	Qs	Ans	**Maths Made Easy**	Qs	Ans
Corbettmaths (Practice)	Qs	Ans	**Metatutor**	Qs	Ans
Corbettmaths (Textbook)	Qs	Ans	**Maths Takeaway**	Qs	Ans
1st Class Maths	Qs	Ans	**E Classroom**	Qs	Ans

Questions by topic | **Past Papers** | **Maths worksheets**

Buy workbook | **Quizzes** | **More resources like this**

ken@mathslinks.co.uk