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| Subject | Year | Month |  |
| Mathematics | 8 | May | |

Topic:

STRAIGHT LINE GRAPHS 8 LESSONS

Content (Intent)

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| <p>Prior Learning</p> <p>Y7 March:</p> <ul style="list-style-type: none"> - Substitute positive and negative numbers into formula <p>Y7 June:</p> <ul style="list-style-type: none"> - Coordinates - Straight lines parallel to the x-axis or the y-axis - $y = x$ and $y = -x$ <p>Y8 October</p> <ul style="list-style-type: none"> - Changing the subject | <p>Future Learning</p> <p>Y9 March:</p> <ul style="list-style-type: none"> - Linear graphs <p>Y10:</p> <ul style="list-style-type: none"> - Linear graphs and coordinate geometry |
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| <p>Objectives</p> <ul style="list-style-type: none"> • Find the gradient of a straight line • Find the y-intercept of a straight line • Plot graphs of functions $y=mx + c$ and $ax + by = c$ • Know that graphs of functions of the form $y = mx + c$, and $ax + by = c$ are linear (rearrange between) • Sketch linear graphs • Plot and interpret graphs of piece-wise linear functions in real contexts <ul style="list-style-type: none"> ✓ Distance time graphs ✓ Money rate | <p>For teaching purposes</p> <p>Possible questions:</p> <ul style="list-style-type: none"> • Draw a distance-time graph of your journey to school. Explain the features. • Show me a point on this line (e.g. $y = 2x + 1$). And another, ... <p>Misconceptions</p> <ul style="list-style-type: none"> • may draw a line segment that stops at the two most extreme points plotted • may think that a sketch is a very rough drawing. It should still identify key features, and look neat, but will not be drawn to scale • may think that a positive gradient on a distance-time graph corresponds to a section of the journey that is uphill |
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| Pedagogical notes (implementation) | How will understanding be assessed & recorded (Impact) |
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| <p>For plotting graphs, use both table of values as well as identifying intercept and gradient.</p> <p>Note that negative number inputs can cause difficulties. <i>Start with substituting the positives.</i></p> <p>Students should recognize the link with linear sequences.</p> <p>Pupils should review their plots. If they are not in a straight line, something might have gone wrong.</p> <p>MINIMUM STANDARDS:</p> <ul style="list-style-type: none"> • x in the equation should be curly • Graph should be drawn in pencil | <p>8BAM13 Algebraic graphs End of Year Assessment in June</p> <hr/> <p>How can parents help at home?</p> <p>MathsWatch clips (Qualification KS3) A14a, A14b, A14c, A21a, A21b</p> |
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Further reading/discussion

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| <p>Reading / Enrichment</p> <p>KM: Plotting graphs</p> <p>KM: Matching graphs</p> <p>KM: Autograph 1</p> <p>KM: Autograph 2</p> <p>KM: The hare and the tortoise</p> | <p>Literacy</p> <p>Plot , Substitute</p> <p>Equation (of a graph), Function Gradient, y-intercept</p> <p>Linear</p> <p>Notation $y = mx + c$</p> <p><i>plot points with a 'x' and not '•'</i></p> | <p>Numeracy Links</p> | <p>Careers Links</p> <p>Statisticians</p> <p>Medical researcher</p> <p>Actuary</p> <p>Construction worker</p> <p>Financial manager</p> |
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