Functional Skills
Mathematics Level 1
Guidance for Delivery

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For external use

Document revision history

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1. Introduction

The following document is intended to support centres with the delivery of the reformed Level 1 Functional Skills mathematics qualifications.

This should be read in conjunction with the following:

- DfE Subject content functional skills: Mathematics

The subject content requires candidates to demonstrate their competence (functionality) in mathematics. Achievement of the qualification demonstrates a sound grasp of mathematical skills at the appropriate level, and the ability to apply mathematical thinking effectively to solve problems successfully in the workplace and in other real-life situations.

Although there is an emphasis on work-based contexts and financial literacy, the assessments are generic rather than vocationally based.

The subject content is split into three areas:

using numbers and the number system*;*

using common measures, shape and space*;* and

handling information and data / statistics**.**

There is naturally much overlap between these sections and drawing on different areas should be encouraged when preparing learners for assessment.

1.1. Structure of the assessment

Level 1 Functional Mathematics papers comprise two sections: a short section 1 without a calculator available and a longer section 2, in which a calculator is permitted. Within both sections there are context-free questions testing underpinning skills and knowledge and there are problem solving questions requiring candidates to tackle problems in more complex contexts, eg, problems requiring a multistep process requiring some planning and working through at least two connected steps. Candidates will be required to analyse the problems to decide suitable approaches, tackle the problems, achieve solutions and explain findings. Problem-solving questions will account for 75% of the marks across both sections of the paper.

	Part 1 Calculator not permitted (25 minutes)	Part 2 Calculator permitted (1 hour 20 minutes)
Underpinning knowledge **(15 marks = 25%)**	10 single mark context free questions	5 single mark context free questions
Problem solving **(45 marks = 75%)**	2 problem solving questions with practical context (total 5 marks)	1 single mark check (for sense of result) 9 problem solving questions with practical context (mark tariff between 2 and 6 marks each, total 39 marks)

There are two options for assessment:

- an onscreen test (e-volve)
- a paper-based test

Both options are available on demand.

1.2. Duration

The Level 1 assessment is 1 hour and 45 minutes.

- Section 1 is 25 minutes.
- Section 2 is 1 hour and 20 minutes.

1.3. General

The assessment is based on the 'DfE Subject content functional skills: Mathematics' specification and teaching should reflect the full range of subject content.

Candidates should be familiar with sample papers, which are indicative of content. Both online (E-volve) and paper-based samples will assist this process.

Samples of both types are available on the City&Guilds website. It is also important that candidates are aware of the format of the option they have chosen.

E-volve candidates should be given the opportunity to practise onscreen samples. They should be aware that answers must be recorded in the answer boxes where provided and working should be shown in the spaces provided for working. Candidates should be encouraged to practise using the tools in the E-volve test by accessing the familiarisation tool found on this page of the website General information page level 1. Practise with options 1 (calculator and work box), 5 (table), 7 (diagram), 8 - 11 (charts and graphs) will be very useful for Level 1 candidates.

In the E-volve test, **for the second section only**, candidates will have access to a basic onscreen calculator. However candidates are permitted to use their own (more sophisticated) handheld calculators.

Candidates opting for paper-based assessment should likewise be given the opportunity to practise sample papers. They must also answer in the spaces provided and are advised to show working to secure compensation marks if their final answer is incorrect. They must have a ruler in order to successfully attempt some of the questions and calculators for the calculator permitted section.

1.4. Underpinning knowledge (UPK) and problem solving (PS)

Each of the two sections will contain a balance of problem solving (PS) and underpinning knowledge (UPK) questions.

Overall 25% of the marks will be for UPK and 75% for PS.

- Section 1 has 10 marks for UPK followed by 5 marks for PS.
- Section 2 starts with 5 marks for UPK and the remaining 40 marks are for open response PS questions.

Underpinning knowledge questions

The first 10 marks in Section 1 and the first 5 marks in Section 2 are for underpinning knowledge. These questions will normally have no context or a very limited context and minimal reading demand. They are designed to assess standard mathematical processes for the level.

Problem-solving questions

The final 5 marks in Section 1 and the final 40 marks of Section 2 assess problem-solving.

Each question will be a single problem based on a topic that might reasonably occur in everyday life or work. However, as the assessment is not vocationally specific, problems will be generic in nature and therefore not necessarily relate to immediate experiences of all candidates.

Ofqual define a problem as:

- *having **little or no scaffolding**: there is little guidance given to the student beyond a start point and a finish point. **Questions do not explicitly state the mathematical process(es) required** for the solution.*
- *information not given in mathematical form or in mathematical language; or there is a need for the results to be interpreted, or methods evaluated, for example, in a real-world context.**

further detail and explanation of the term mathematical problem solving can be found in the DfE Subject content document pp14-15 and 19-20

Therefore, problem-solving questions will generally not have specific instructions that give the method such as:

- Add the prices of the items to work out the total cost.
- Draw a line of symmetry on the outline.

Instead candidates are more likely to come across questions, eg:

- Is the manager correct?
  Explain your answer.
- Which type of ticket do you recommend?
  Explain your reasons. Include figures to support your decision.
- Did the changes make any difference?
  Explain your findings to the manager. Show figures to support your explanation.
- Will the man be better off in the new job?
  Give a reason for your answer.

Candidates will be expected to **choose an appropriate approach** and methods as well as carry out calculations. They will also be given opportunities to interpret information.

1.5. Question types

Papers will be a mixture of the following question types, whichever format the learner opts to sit:

- short answer
- multiple choice question (MCQ)
- producing a graph / chart / table / diagram.

Drawing graph/chart items: papers may have questions that require the candidate to construct a chart or graph. They will have to choose titles and axis labels; choose a suitable scale and plot bars or lines. Some questions may require the completion of a prepared graph template.

Drawing diagram items: papers may require the candidate to draw a scale diagram. The scale may be given, or they may be required to choose a suitable scale.

Presenting information in tables: candidates may be required to present results in tabulated form. They are expected to organise information in rows and columns and use appropriate headings.

It is strongly recommended that candidates taking the E-volve papers practise drawing charts, graphs and diagrams with the online tools in advance of sitting the paper.

1.6. Sample papers and Past Papers

Sample assessments and past papers for both platforms, can be found on the City & Guilds website by using the following link:

www.cityandguilds.com/what-we-offer/centres/maths-and-english/functional-skills

1.7. Points to consider

Subject content

Centres should be aware of all the detailed subject content specified for Level 1 in the DfE Subject content document DfE Subject content functional skills: Mathematics and be aware that Level 1 content also subsumes all level content below Level 1 (see appendix 2).

General calculation issues

Candidates must understand order of operations conventions **(BIDMAS**) and apply them to calculations.

Candidates should use estimation and approximation techniques when required, including checking calculations.

Explanations / comments needed for problem solving questions

Problem solving questions may specify a requirement for explanation (comments). Candidates must be aware that, although marks will be awarded for relevant calculations, full marks will require a suitable explanation using their results, preferably with reference to numerical values calculated. eg:

- Option B is cheaper by £4.50
- Office C is larger than Office B, 20m2 > 17.6m2

Candidates must also be prepared to explain why an answer is reasonable (or not) based on **mathematical process** rather than **calculated results.**

**Check the sense and reasonableness of answers*
Subject Content Statements p14/15

Candidates should know the distinction between averages and range and how to use each in explanations in context.

Presentation of results / workings

The importance of showing working on the assessments, ie to show calculations and methods used, should be emphasised so that potential compensation marks, in the event of incorrect answers, are accessible to the candidate. This should be emphasised to online candidates who may use 'pencil and paper' methods initially to formulate their solutions.

Candidates should understand the use of scales in scale diagrams and be prepared to construct scale diagrams, including plans and elevations. Candidates should be able to use a variety of presentation methods to summarise results, including graphs, charts and tables. They must differentiate where there is a table and where there is a chart (ie a chart is a pie chart or a bar chart. Summary tables should be systematically constructed to include rows and columns with appropriate headings.

Candidates must be able to construct line graphs, bar charts and pie charts. They should understand that a line graph is only an option if the data plotted is continuous data. It is not an option if the results illustrated are discrete. Pie charts are suitable only if there is an intention to show proportions. Candidates must know how to group data into suitable categories without overlapping boundaries.

- A bar chart should have a title, axes labelled, bars labelled (a key is also acceptable), a scale starting at zero and bar heights accurately plotted.
- A pie chart should have a title, segments labelled, or a key provided, and sector angles accurately drawn.
- A line graph should have a title, labelled axes, continuous linear scales on both vertical and horizontal axes, the vertical scale may start at zero (if it does not, a broken line symbol should be used), accurate plots shown clearly and a single line joining the plots.

Candidates who choose to access assessment online need to be prepared not only in terms of the prescribed Functional Skills Specification, but also in terms of using the E-volve platform. They must be well practised in the use of the presentation tools (tables, diagrams, charts and graphs) including how to insert sufficient text, keys and the use of relevant scales.

2. Appendix 1 Amplification of DfE Subject Content

2.1. Overview of Level 1 Functional Maths requirements

Functional Skills mathematics qualifications at Level 1 should:

- Indicate that students can demonstrate their ability in mathematical skills and their ability to apply these, through appropriate reasoning and decision making, to solve realistic problems of increasing complexity;
- Introduce students to new areas of life and work so that they are exposed to concepts and problems which, while not of immediate concern, may be of value in later life; and
- Enable students to develop an appreciation of the role played by mathematics in the world of work and in life generally

<table>
<tr><th colspan="2">DfE Subject Content: Overview of sections (Level 1)</th></tr>
<tr><td>Use of numbers and the number system

Students at Level 1 are expected to be able to count in steps of various sizes, including negative numbers; read, write and understand positive whole numbers to one million. They can order and compare whole numbers of any size, and fractions, ratios and decimals and recognise the effect of multiplying and dividing by powers of 10, 100 and 1000. They can identify, compare and extend a range of numerical and spatial patterns, use, understand and calculate with fractions, decimals and percentages and calculate simple interest.</td><td rowspan="2">Solving mathematical problems and decision making

Students at Level 1 are expected to be able to use the knowledge and skills listed above to recognise and obtain a solution or solutions to a straightforward problem. A straightforward problem is one that requires students to either work through one step or process or to work through more than one connected step or process. Individual problems are based on the knowledge and/or skills in the mathematical content areas (number and the number system; common measures, shape and space; information and data). At Level 1 it is expected that the student will be able to address individual problems, some of which draw upon a combination of any two of the mathematical content areas and require</td></tr>
<tr><td>Use of measures, shape and space

Students at Level 1 are expected to be able to work out simple relationships between common units of measurement to define quantities, also involving mathematical</td></tr>
</table>

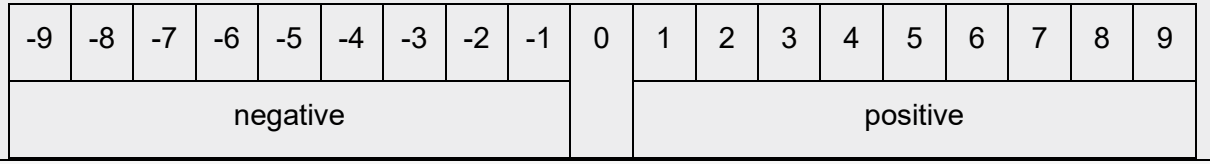
terms for position and direction. They can apply and use calculations with common measures including money, time, length, weight and capacity. They can visualise, draw and describe 2-D and 3-D shapes and use properties of 2-D shapes in calculations.	*students to make connections between those content areas.*
Handle information and data: *Students at Level 1 are expected to be able to select, construct and interpret a range of statistical diagrams in various contexts; select and use methods and forms to present and describe outcomes. They can extract and interpret information from tables, diagrams, charts and graphs; apply simple statistics and recognise features of charts to summarise and compare sets of data; recognise and use the probability scale and interpret probabilities.*	

3. Subject Content Specifications (SCS)

3.1. **SCS 1** Read, write, order and compare large numbers (up to one million)

SCS	Examples
1. Read, write, order and compare large numbers (up to one million) **Description(s):**	
Large and small numbers written as numbers, words or powers of 10	One thousand = 10^3 = 1000
	million (m) = 10^6 = 1000000
	nine hundred and five thousand two hundred and six is 905206
Recognise and use sequences of numbers	4 11 18 25 etc
	1 4 9 16 25 etc
Put the following in decreasing order	2050 two hundred and sixty-two 2×10^3 −251 0 −2
Write amounts of money correct to two decimal places in correct format.	£134.70 on an order form and not £134.7

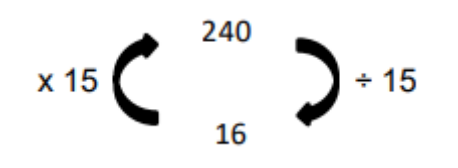
3.2. SCS 2 Recognise and use positive and negative numbers

SCS	Examples
2. Recognise and use positive and negative numbers **Description(s):**	
Understand positive and negative numbers in relation to zero	Number line 
Relate positive and negative numbers in context	A temperature of -5ºC is colder than -2ºC
	A company account reading -£2000 means the company has made a loss
	Recognising credit (positive) and debit (negative) figures in a bank statement

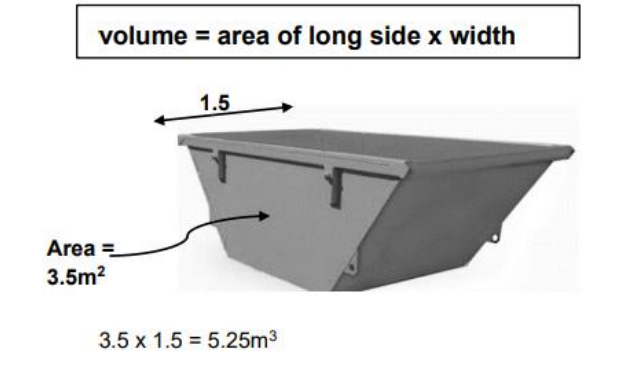
3.3. SCS 3 Multiply and divide whole numbers and decimals by 10, 100, 1000

SCS	Examples
3. Multiply and divide whole numbers and decimals by 10, 100, 1000 **Description(s):**	
Understand the importance of the accurate use of decimal points	Multiplication: 0.02 x 10 = 0.2
	0.02 x 100 = 2.0
	0.02 x 1000 = 20.0
	Division: 20 ÷ 10 = 2
	20 ÷ 100 = 0.2
	20 ÷ 1000 = 0.02

3.4. SCS 4 Use multiplication facts and make connections with division facts

SCS	Examples
4. Use multiplication facts and make connections with division facts **Description(s):**	
Understand the relationship of multiplication and division	
	Four items cost £15 each total cost = 4 x 15 = £60 Check 60 ÷ 15 = 4

3.5. SCS 5 Use simple formulae expressed in words for one- or two-step operations

SCS	Examples
5. Use simple formulae expressed in words for one- or two-step operations **Description(s):**	
Substitute values into given word formulae and calculate results	a builder needs to know the volume of this skip 

3.6. SCS 6 Calculate the squares of one-digit and two-digit numbers

SCS	Examples
6. Calculate the squares of one-digit and two-digit numbers **Description(s):**	
Understand square of number is a number multiplied by itself Know that index 2 means squared	92^2 is 9 x 9 = 81
Candidates should be able to work out squares of numbers 1 to 12 and numbers ending in zero (20, 30 etc) without a calculator	11^2 = 121
	40^2 =1600
Understand that the square of a negative number is a positive number	$(-4)^2$ = -4 x -4 = 16

3.7. SCS 7 Follow the order of precedence of operators

<table>
<tr><th>SCS</th><th>Examples</th></tr>
<tr><td colspan="2">7. Follow the order of precedence of operators

Description(s)</td></tr>
<tr><td>Understand and use BIDMAS (order of precedence) when making calculations

<table>
<tr><td>B</td><td>brackets</td></tr>
<tr><td>I</td><td>indices</td></tr>
<tr><td>D</td><td>division</td></tr>
<tr><td>M</td><td>multiplication</td></tr>
<tr><td>A</td><td>addition</td></tr>
<tr><td>S</td><td>subtraction</td></tr>
</table>
</td><td>
$3^2 + 7 \times 3 - 4 = 26$
<table>
<tr><td>first</td><td>3^2</td><td>9</td></tr>
<tr><td>second</td><td>7 x 3</td><td>21</td></tr>
<tr><td>third</td><td>21 + 9</td><td>30</td></tr>
<tr><td>fourth</td><td>30 – 4</td><td>26</td></tr>
</table>

$(3^2 + 7) \times (3 - 4) = -16$
<table>
<tr><td rowspan="2">first</td><td>$3^2 + 7$</td><td>9 + 7 = 16</td></tr>
<tr><td>3 - 4</td><td>−1</td></tr>
<tr><td>second</td><td>16 x −1</td><td>−16</td></tr>
</table>

$(3^2 + 7) \times 3 - 4 = 44$
<table>
<tr><td>first</td><td>$3^2 + 7$</td><td>9 + 7 = 16</td></tr>
<tr><td>second</td><td>16 x 3</td><td>48</td></tr>
<tr><td>third</td><td>48 – 4</td><td>44</td></tr>
</table>
</td></tr>
</table>

3.8. SCS 8 Read, write, order and compare common fractions and mixed numbers

SCS	Examples
8. Read, write, order and compare common fractions and mixed numbers **Description(s):**	
Fractions have format	$\frac{1}{5}$
Know common fractions	halves, thirds, quarters, fifths, eighths, tenths (and multiples ending in zero), sixteenths $\frac{1}{2}$ $\frac{2}{3}$ $\frac{3}{4}$ $\frac{3}{5}$ $\frac{7}{8}$ $\frac{7}{10}$ $\frac{7}{20}$ $\frac{9}{16}$
Know that a mixed number is a combination of a whole number and a fraction	$1\frac{3}{4}$ $2\frac{1}{2}$ $4\frac{2}{5}$
Use < (less than) and > (greater than) to compare fractions and mixed numbers	$3\frac{1}{2} > \frac{4}{5}$ $\frac{7}{16} < \frac{7}{8}$
Order mixtures of fractions and mixed numbers	Descending order

	$3\frac{1}{2}$ $1\frac{3}{4}$ $\frac{4}{5}$ $\frac{3}{4}$
	Ascending order $\frac{1}{2}$ $\frac{3}{5}$ $\frac{7}{10}$ $1\frac{1}{3}$

3.9. SCS 9 Find fractions of whole number quantities or measurements

SCS	Examples
9. Find fractions of whole number quantities or measurements **Description(s):**	
Without calculator	$\frac{2}{5}$ of 150000 = $\frac{150000}{5}$ x 2 = 30000 x 2 = 60000
	A ticket costs £1.80, there is a discount of one third, what is the cost of the ticket? £1.80 ÷ 3 = 60p £1.80 – 60p = £1.20
With calculator	$\frac{2}{5}$ of 150000 calculator 2 ÷ 5 = 0.4 then calculator 0.4 x 150000 = 60000

	The UK exported 350,000 tons of vegetables, four fifths were potatoes, what amount of potatoes were exported? Calculator 4 ÷ 5 = 0.8 Calculator 0.8 x 350000 = 280000 tons

3.10. SCS 10 Read, write, order and compare decimals up to three decimal places

SCS	Examples
10. Read, write, order and compare decimals up to three decimal places **Description(s):**	
Understand the significance of decimal point position	0.1 is ten times larger than 0.01 0.003 is one thousand times smaller than 3
Use < (less than) and > (greater than) to compare decimals	0.002 < 0.01 0.02 > 0.008
Order decimals	Descending order 2.22 2.2 2.022 2.02
	Ascending order 0.009 0.08 0.09 0.8

3.11. SCS 11 Add, subtract, multiply and divide decimals up to two decimal places

SCS	Examples
11. Add, subtract, multiply and divide decimals up to two decimal places **Description(s):**	
Without calculator	0.65 + 0.44 0.65 0.44 **1.09** 0.73 – 0.25 0.73 0.25 **0.48**
	2.2 x 0.2 = 0.44 4.50 ÷ 0.05 = 90
With calculator. Care required when reading decimal points, encourage checking for sense	31.1 x 12.5 ≠ 3887.5 (approximation 30 x 10 = 300 means result of wrong order of magnitude) ∴ 31.1 x 12.5 = 388.75

3.12. SCS 12 Approximate by rounding to a whole number or to one or two decimal places

SCS	Examples
12. Approximate by rounding to a whole number or to one or two decimal places (dp) **Description(s):**	
Know the general rules of rounding	2.136 to 2 decimal places is 2.14 2.136 to 2 significant figures is 2.1
Understand when rounding up and rounding down is appropriate in context of question	round up 2.13 to 3 rolls of wallpaper (as cannot buy 0.6 rolls) round down (truncation) 6.7 to 6 number of complete weeks of fertiliser application (as 0.7 is not enough for a complete application)
Check by approximation	25 x 50 = 1250 checks 25.1 x 49.2 = 1229.9

3.13. SCS 13 Read, write, order and compare percentages in whole numbers

SCS	Examples
13. Read, write, order and compare percentages in whole numbers **Description(s):**	
Understand percentage as a number or ratio expressed as a fraction of 100	one percent (1%) is one hundredth of a whole
Know the percent symbol	%
Use < (less than) and > (greater than) to compare percentages	10% < 12% 12% > 10%
Order percentages	Descending order 55% 33% 1%
	Ascending order 39% 51% 100%

3.14. SCS 14 Calculate percentages of quantities, including simple percentage increases and decreases by 5% and multiples thereof

SCS	Examples
14. Calculate percentages of quantities, including simple percentage increases and decreases by 5% and multiples thereof **Description(s):**	
Use a method to calculate percentages (multiples of 5%)	÷ 10 for 10% and then ÷ 2 for 5%
	What is 15% of 800? 800 ÷ 10 = 80 80 ÷ 2 = 40 80 + 40 =120
	÷ 100 x 20 for 20%
	Find 20% of 350 350 ÷ 100 = 3.5 3.5 x 20 = 70
	x 0.4 for 40% Work out 40% of 60 0.4 x 60 = 24

Calculate percentage increases Find final values using percentage increase	A supplier sells some materials to a builder. The supplier must add 20% VAT to the cost of the materials. Complete the invoice below. 78.20 x 0.2 = 15.64 78.20 + 15.64 = 93.84
Calculate percentage decreases Find final values using percentage decrease	A chocolate bar manufacturer decides to reduce the weight of its chocolate bars by 25%. One of the bars weighs 200g now. What will it weigh after the reduction?

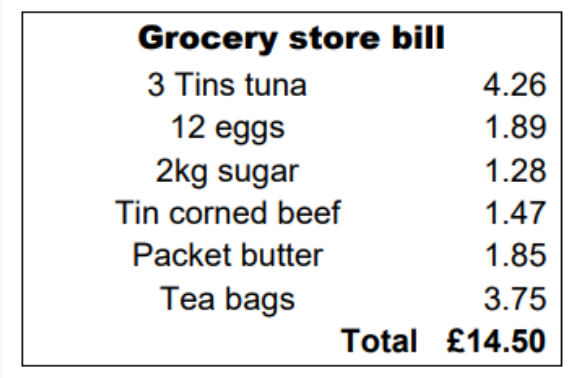
Building yard Invoice		
Item	Quantity	Cost
cement	10 bags	40.20
gravel	Bulk bag	38.00
	subtotal	78.20
	VAT @ 20%	**15.64**
	TOTAL	**93.84**

$$200 \times \frac{25}{100} = 50$$

$$200 - 50 = 150g$$

3.15. SCS 15 Estimate answers to calculations using fractions and decimals

SCS	Examples
15. Estimate answers to calculations using fractions and decimals **Description(s):**	
Understand when approximation is appropriate to solve problems Know the symbol ≈ meaning approximately equal to Round to whole numbers to achieve estimated answers	A family of 4 pays £1174.65 per year to supplier A for gas and electricity. Supplier B offers a deal that will average £87.40 per month The family wants to know if Supplier B will save them money. 12 x 87.40 is approximately 12 x 90 = £1080 £1080 is less than £1174.65 so they could save money OR 1174.65 ÷ 12 is approximately 1200 ÷12 = £100 £100 is more than £87.40 so they could save money.
Round fractions to zero, half or one to estimate and/or check additions and subtractions.	$1\frac{1}{5} + 2\frac{7}{8} + \frac{5}{8} \approx 1 + 3 + \frac{1}{2} \approx 4\frac{1}{2}$ (accurate answer = $4\frac{7}{10}$)
Round fractions to zero or one to estimate and/or check multiplication and division	$4\frac{1}{5} \times 2\frac{7}{8} \approx 4 \times 3 \approx 12$ (accurate answer = $4\frac{3}{40}$)
Round decimals to zero or one to estimate and/or check calculations	$4.6 \times 3.2 \approx 5 \times 3 \approx 15$ (accurate answer = 14.72)

<table>
<tr><td>Use estimation (approximation) to check results</td><td>4563.25 ÷ 51.3 = 88.952 to 3dp
Check position of decimal point 4500 ÷ 50 = 450 ÷ 5 = 90</td></tr>
<tr><td></td><td>A customer wants to know if his bill total is accurate.
 
<table>
<tr><th colspan="2">Grocery store bill</th></tr>
<tr><td>3 Tins tuna</td><td>4.26</td></tr>
<tr><td>12 eggs</td><td>1.89</td></tr>
<tr><td>2kg sugar</td><td>1.28</td></tr>
<tr><td>Tin corned beef</td><td>1.47</td></tr>
<tr><td>Packet butter</td><td>1.85</td></tr>
<tr><td>Tea bags</td><td>3.75</td></tr>
<tr><td>Total</td><td>£14.50</td></tr>
</table>

He checks his bill total using approximation.
Show whether the bill total is approximately correct using estimation.
4 + 2 + 1 + 1 + 2 + 4 = 14
Shows bill total is approximately correct.</td></tr>
</table>

3.16. SCS 16 Recognise and calculate equivalences between common fractions, percentages and decimals

SCS	Examples
16. Recognise and calculate equivalences between common fractions, percentages and decimals **Description(s):**	
Recognise equivalences	$\frac{1}{4}$ = 25% = 0.25 $\frac{1}{2}$ = 50% = 0.5 $\frac{3}{4}$ = 75% = 0.75 $\frac{1}{8}$ = 12.5% = 0.125 $\frac{1}{10}$ = 10%= 0.1 $\frac{1}{5}$ = 20% = 0.2
Calculate percentages and decimals from fractions	$\frac{4}{5}$ x 100 = 80% Calculator 4 ÷ 5 = 0.8
Calculate fractions and percentages from decimals	0.02 is $\frac{2}{100} = \frac{1}{50}$ AND 0.02 is $\frac{2}{100}$ = 2%
Calculate fractions and decimals from percentages	80% = $\frac{80}{100} = \frac{8}{10} = \frac{4}{5}$ 80% = $\frac{80}{100} = \frac{8}{10}$ = 0.8

3.17. SCS 17 Work with simple ratio and direct proportions

SCS	Examples
17. Work with simple ratio and direct proportions **Description:**	
Work out a ratio in its simplest form	A café makes 98 sandwiches: 56 cheese 14 egg and 28 ham What is the ratio of cheese : egg : ham sandwiches? Give the ratio in its simplest form. 56 : 14 : 28 simplifies by dividing by 7 to give 8 : 2 : 4 Which further simplifies by dividing by 2 Answer: 4 : 1 : 2
Calculate quantities for a given ratio	A landscape gardener needs to make 700kg concrete. He uses one part cement to three parts gravel. How much cement does he need? How much gravel does he need? cement : gravel is 1 : 3 = 4 parts 700 ÷ 4 = 175 175 x 3 = 525 The gardener needs 175kg cement and 525kg gravel

Calculate quantities using direct proportion	A cook wants to make 30 pancakes. They use this recipe. **Recipe for 6 Pancakes** 150ml milk 50g plain flour 1 large egg What amounts of flour, milk and eggs will they need? 30 ÷ 6 = 5 The cook needs five times the amounts shown in the recipe. 150 x 5 = 750 50 x 5 = 250 1 x 5 = 5 The cook needs 750ml milk, 250g flour and 5 eggs

3.18. SCS 18 Calculate simple interest in multiples of 5% on amounts of money (See also 14)

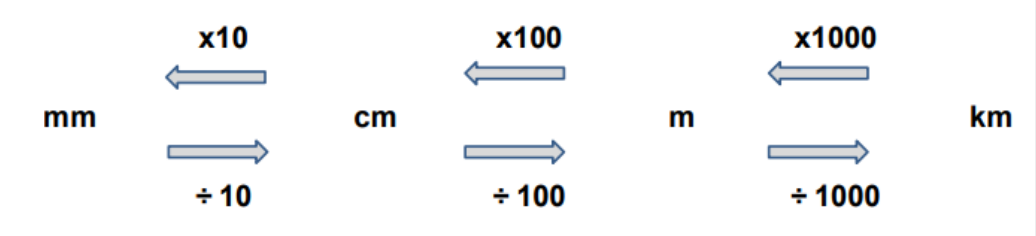
SCS	Examples
18. Calculate simple interest in multiples of 5% on amounts of money (See also 14) **Description(s):**	
Calculate values using simple interest	A business owner borrows £7000 from a lender for one year. The interest rate is 15% per year. What amount of money will they repay after one year? 7000 x 0.15 = 1050 7000 + 1050 = £8050

3.19. SCS 19 Calculate discounts in multiples of 5% on amounts of money (See also 14)

SCS	Examples
19. Calculate discounts in multiples of 5% on amounts of money (See also 14) **Description(s):**	
Calculate values using percentage decreases	A shop has a sale. Today all shirts are 30% off marked prices. A shopper sees this price tag.

	 What will be the price of this shirt today? £30 x 0.3 = £9 £30 – £9 = £21

3.20. SCS 20 Convert between units of length, weight, capacity, money and time, in the same system

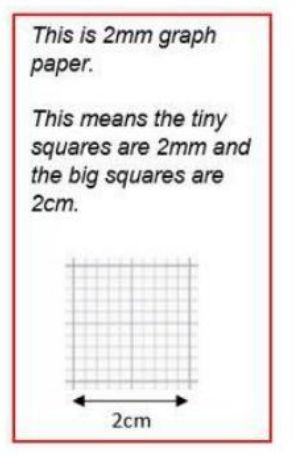
SCS	Examples
20. Convert between units of length, weight, capacity, money and time, in the same system **Description(s):**	
Know linear metric conversions	10mm = 1cm 1000mm = 1m 100cm = 1m 1000m = 1km 
Know metric weight conversions	1000g = 1kg

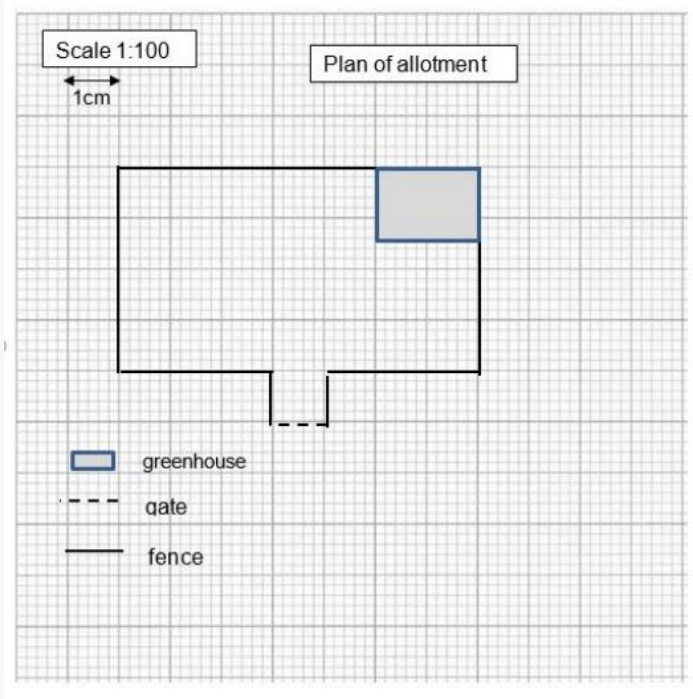
	1000kg = 1 tonne	
Know metric capacity conversions	1000ml = 1 litre	
Know money conversions	£1 = 100p	
Know time conversions	60 seconds =	1 minute
	60 minutes =	1 hour
	24 hours =	1 day
	7 days =	1 week
	365 days =	1 year
	52 weeks =	1 year
	4 weeks =	1 month
	12 months =	1 year

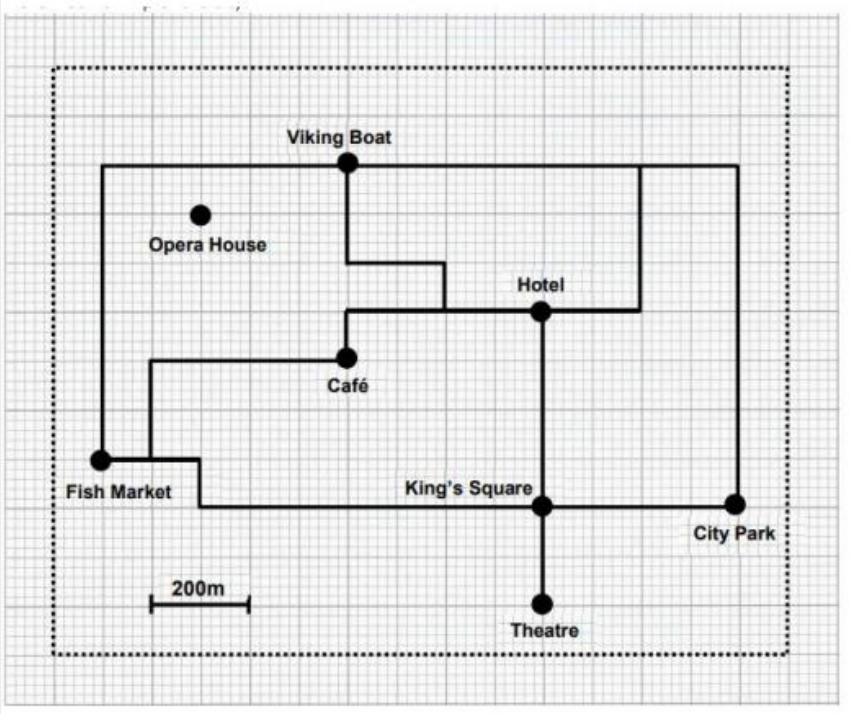
***Note**: common error is equating decimal fractions of hours to minutes*

eg 3.25 hours ≠ 3hours 25 minutes (ie 0.25 x 60 = 15 minutes, so 3.25 hours is 3hours 25 minutes).

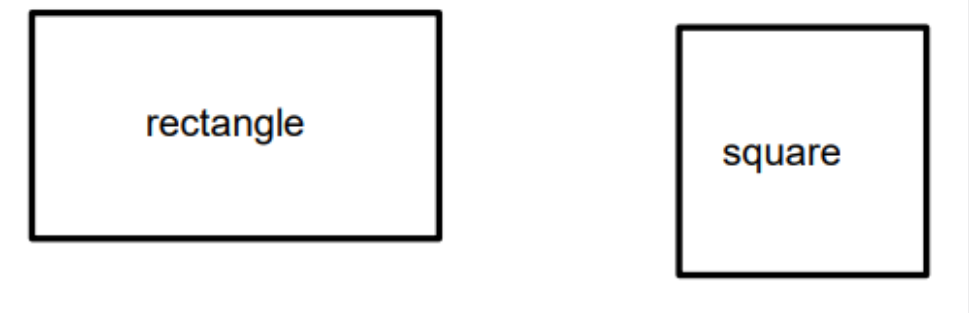
3.21. SCS 21 Recognise and make use of simple scales on maps and drawings

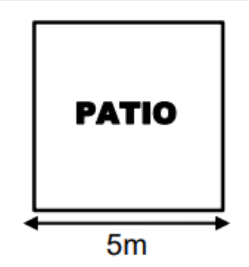
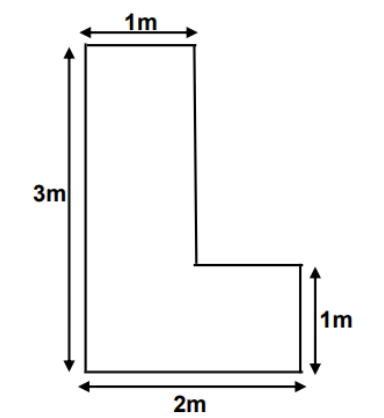
SCS	Examples
21. Recognise and make use of simple scales on maps and drawings **Description(s):**	
Understand and use scales given	1:10 means 1 unit represents 10 units 1:100 means 1 unit represents 100 units 1cm = (represents) 1km
Understand the principle of scaling up (reading actual measurements from a scale plan)	15cm on a scale plan drawn 1:100 is (15 x 100)cm = 1500cm = 15m 20cm on a map with scale 1cm = (represents) 5km is (20 x 5) km = 100km
Graph paper used in assessments will normally be 2mm graph paper. In the online environment, the graph paper will not be actual size, but candidates may assume that each small square measures 2mm.	

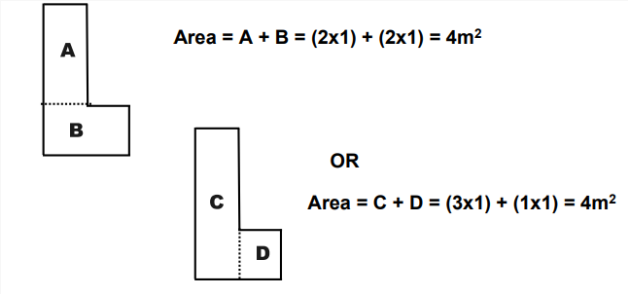
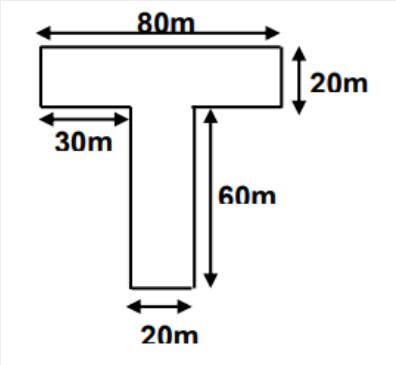
Work out lengths shown on scale drawings (measure using ruler or from graph paper)	use the following scale drawing to work out the length and width of the greenhouse  Length of greenhouse on plan = **2cm** Actual length is 2 x 100 = 200cm = **2m** Width of greenhouse on plan = **1.4cm** Actual width is 1.4 x 100 = 140cm =**1.4m**

Work out distances from maps with given scale	A hotel visitor wants to know how far it is to walk from the hotel to the Viking Boat; he has this map; work out how far it is.  Scaled distance = 7cm scale is 2cm = 200m so 1cm = 100m actual distance = 7 x 100 = 700m

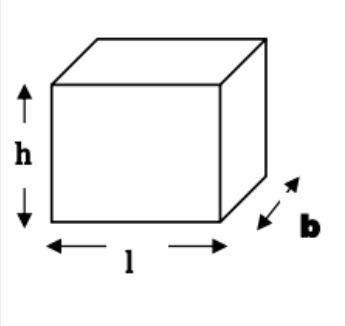
3.22. SCS 22 Calculate the area and perimeter of simple shapes including those that are made up of a combination of rectangles

SCS	Examples
22. Calculate the area and perimeter of simple shapes including those that are made up of a combination of rectangles **Description(s):**	
Identify rectangles and squares	
Know the perimeter for rectangle or square	= lengths of all 4 sides added together
Know the area for rectangle or square	= length x breadth (width)
Note: *common error is confusing* ***perimeter (addition)*** *and* ***area (multiplication)***	

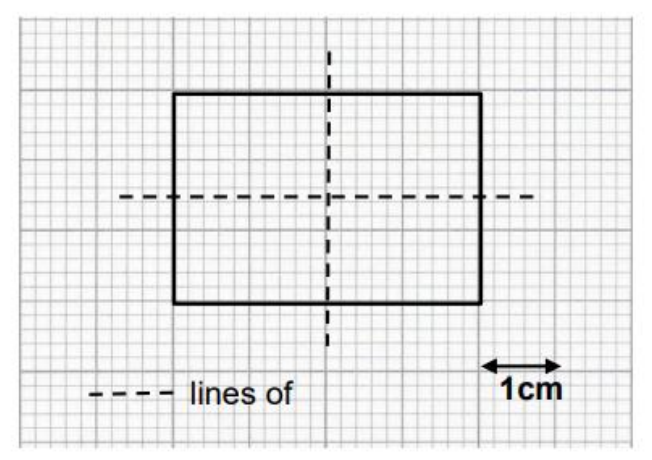
Work out missing dimensions on diagrams and include them in perimeter and area calculations	A builder needs to know the area and perimeter of the square patio shown  perimeter = 5 + 5 + 5 + 5 = 20m area = 5 x 5 = 25m
Work out areas and perimeters of composite shapes made from combinations of rectangles	A kitchen designer needs to know the area of the worktop shown below.  Work out one of the unknown sides vertical side = 3 - 1 = 2m

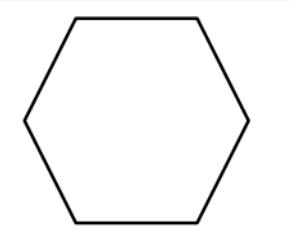
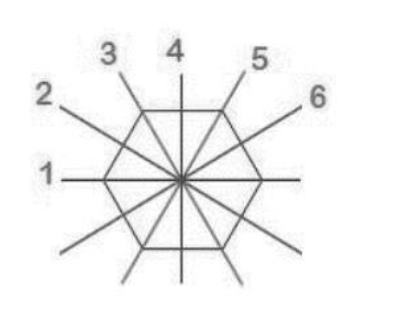
	horizontal side = 2 - 1 = 1m divide L shape into 2 rectangles  Also (3x2) – (1x2) = $4m^2$ may be used as an alternative
	A farmer will place a fence around an area of field. Work out the perimeter of the area shown.  Perimeter = 80 +20 + 30 + 60 + 20 + 60 + 30 + 20 = 320m
Note: 3 missing side values must be worked out *– common error is addition of given values only*	

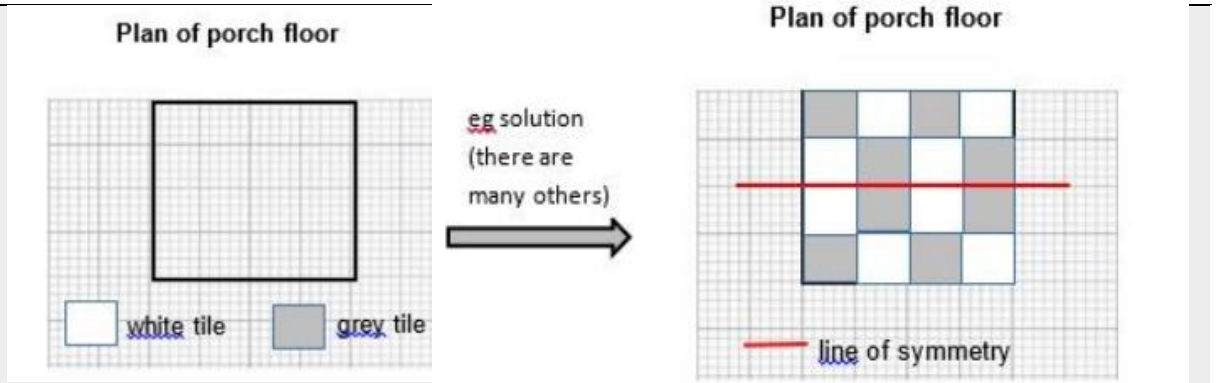
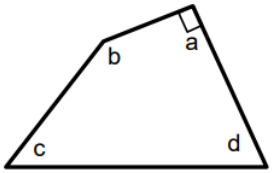
3.23. SCS 23 Calculate the volumes of cubes and cuboids

SCS	Examples
23. Calculate the volumes of cubes and cuboids **Description(s):**	
Must know formulae for cuboid	V = l x b x h for volume l = length b = breadth h = height 
Special case for cube	V = h^3 for volume
Note: *Common error is* ***addition of sides*** *rather than* ***multiplication***	

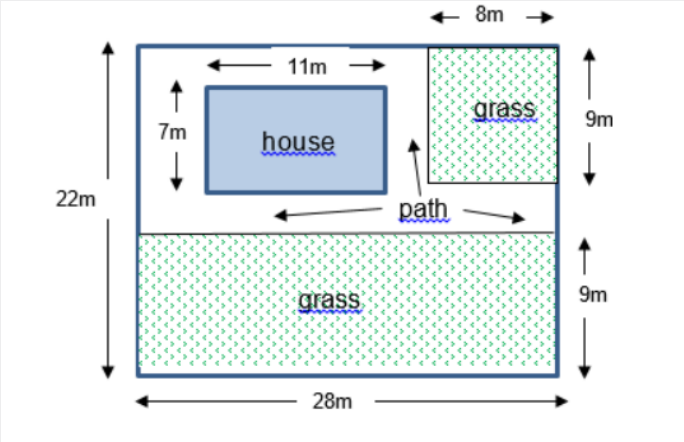
3.24. SCS 24 Draw 2-D shapes and demonstrate an understanding of line symmetry and knowledge of the relative size of angles

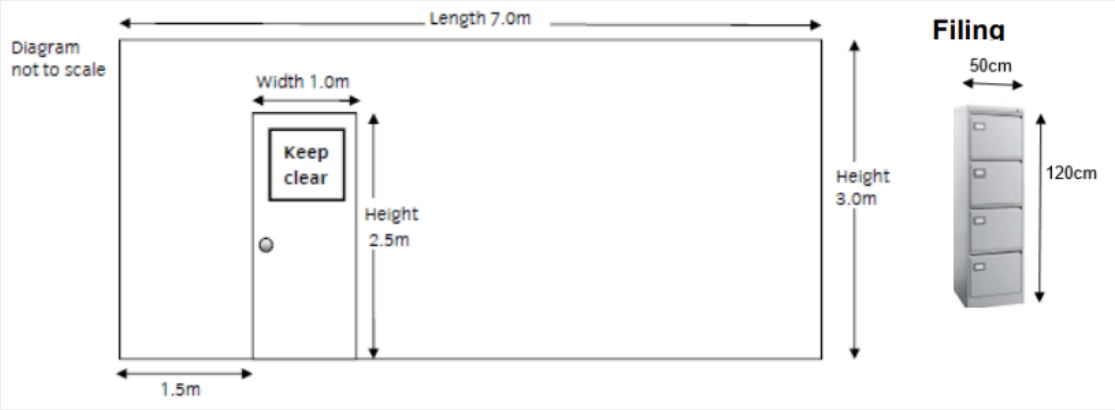
SCS	Examples
24. Draw 2-D shapes and demonstrate an understanding of line symmetry and knowledge of the relative size of angles **Description(s):**	
Draw simple shapes including to scale (see also 21) or given dimensions	Graph paper will normally be provided
Draw lines of (reflective) symmetry on simple shapes including regular polygons	Draw a rectangle with sides 3cm and 4cm and show its lines of symmetry on your diagram 
Note: *a tolerance of ±½ small square is allowed*	

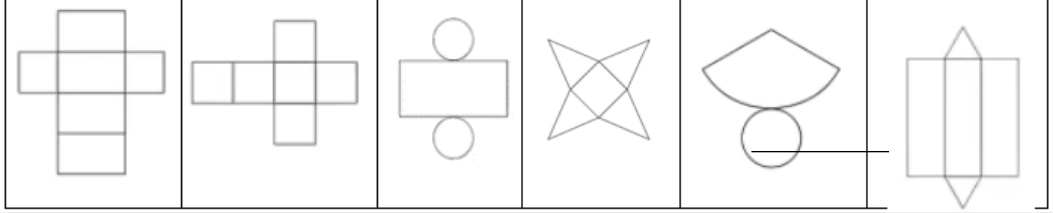
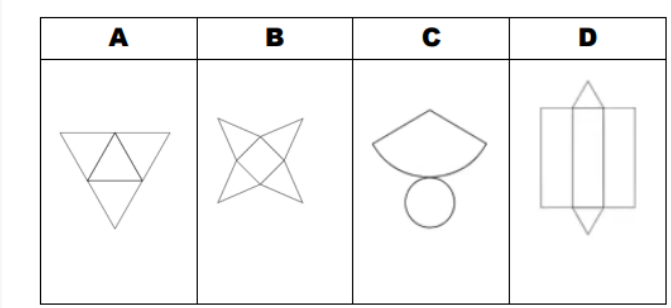
Identify lines of (reflective) symmetry in simple shapes including regular polygons	How many lines of symmetry does this regular polygon have?  This regular polygon has six sides (hexagon) so there are 6 lines of symmetry 
Arrange objects in a symmetrical pattern	A customer wants their porch floor covered with equal numbers of grey and white tiles with at least one line of symmetry, Complete the floor plan below with at least one line of symmetry; show at least one line of symmetry on the diagram.

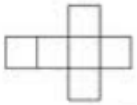
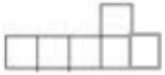
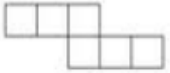
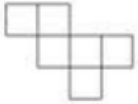
	
Know standard angles	right angle 90º straight line 180º point 360º
Understand terms describing the size of angles	acute (< 90º) , obtuse (> 90º < 180º), reflex (>180º < 360º) The diagram shows a quadrilateral with angles a, b , c and d Which one of the following lists shows the sizes of the angles in ascending order?  a b c d b a d c a c d b b d a c **Answer: b a d c**

3.25. SCS 25 Interpret plans, elevations and nets of simple 3-D shapes (also see 21)

SCS	Examples
25. Interpret plans, elevations and nets of simple 3-D shapes (also see 21) **Description(s):**	
Interpret plans	 The diagram shows a plan of a house and garden. The unshaded part shows a path that surrounds the house. The house owner wants to resurface the path. They need to work out the area of the path. What is the area of the path? Area of path = Total area – area of grass – area of house Total area = 22 x 28 = 616m^2

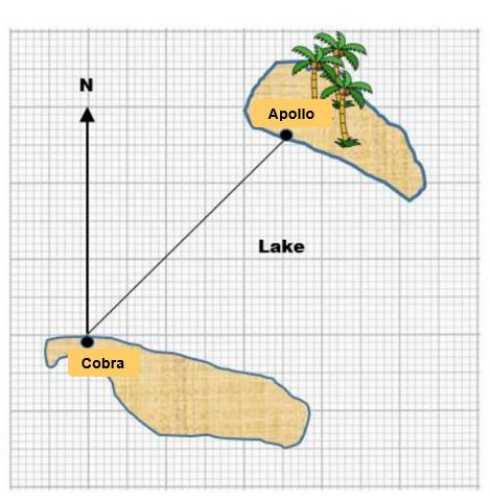
	Area of grass = 9 x 8 + 9 x 28 = 72 + 252 = 324m^2 Area of house = 11 x 7 = 77m^2 **Area of path = 616 – 324 – 77 = 215m^2**
Interpret elevations	
Understand the vertical nature of elevations	
Note: elevations** are sometimes misinterpreted as **floor plans	
Work out (missing) distances on an elevation	The diagram shows an office wall (elevation). An office planner needs to order filing cabinets (shown in the diagram) to fit along the wall on the right side of the door. How many filing cabinets must they order?  Length of wall on right of door = 7 – 1.5 – 1 = 4.5m = 450cm 450 ÷ 50 = 9 filing cabinets

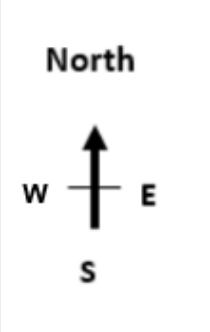
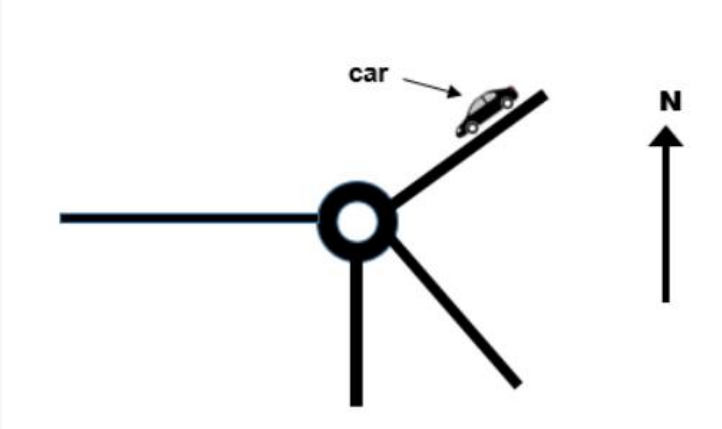
Identify nets of common solids	
Select suitable templates to make 3-D shapes	**Examples of nets for common solids** cuboid, cube, cylinder, pyramid, cone, triangular prism 
	A designer wants to package a perfume in a cone shaped box. Which of the following templates does the manufacturer need to use for the packaging?  A B C D Answer: C
	Which one of the following templates will not make a cube?

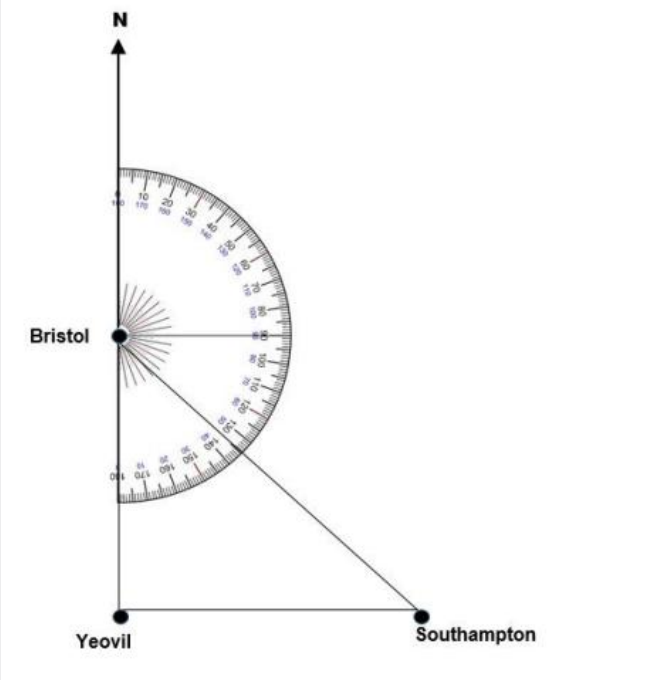
A	B	C	D
			

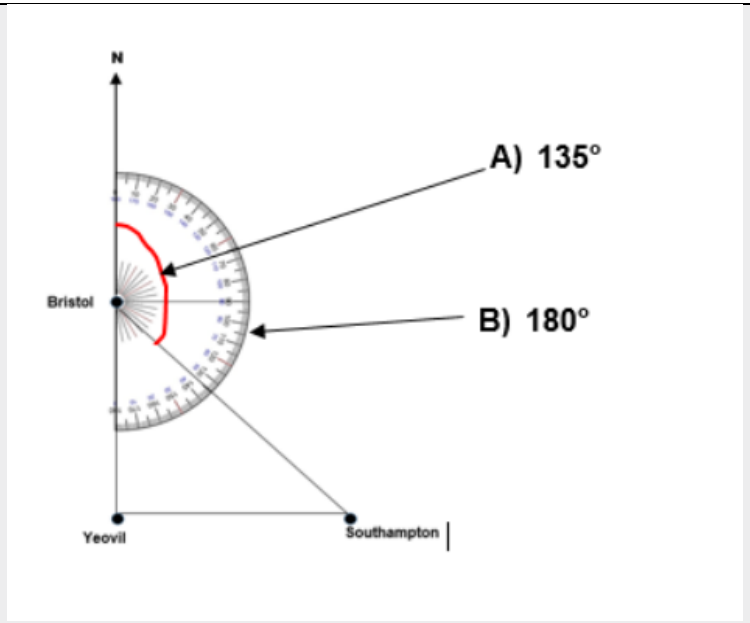
Answer: B

3.26. SCS 26 Use angles when describing position and direction, and measure angles in degrees

SCS	Examples
26. Use angles when describing position and direction, and measure angles in degrees **Description(s):**	
Describe direction using angles	
Understand a bearing is measured in degrees clockwise from the North	 A boat sets out from Cobra to Apollo. Which one of the following bearings should the captain set? A) 030° B) 045° C) 060° D) 075° **Answer B) 045°**

Know the points of a compass	
Describe position using angles	The diagram shows a car coming to a roundabout.  The driver is told to turn 120° in a clockwise direction. In what direction will the car be travelling after turning? **Answer: South**

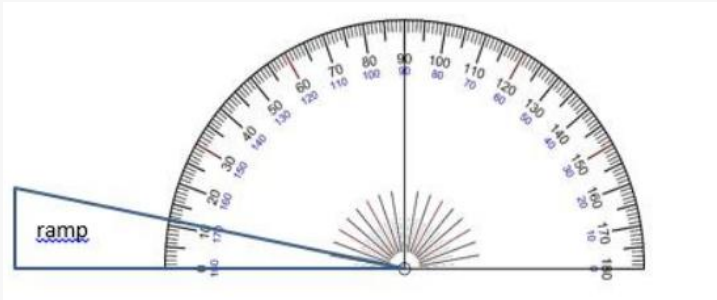
Measure angles using a protractor	The diagram shows the positions of three towns on a map. What are the bearings of A) Southampton from Bristol B) Yeovil from Bristol 



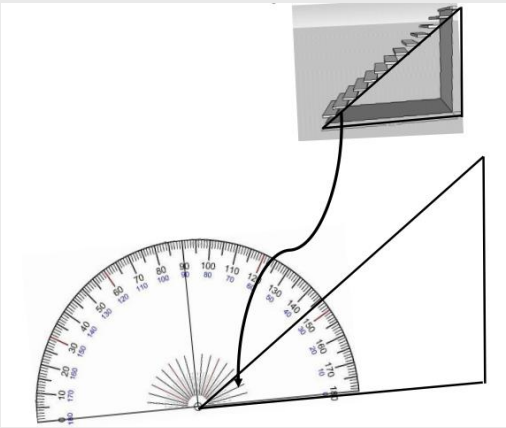
Measure angles using a protractor (continued)

The diagram shows a side elevation of a ramp.

The maximum slope for a wheelchair ramp is 4.8°



Is this ramp suitable for wheelchair use? Explain your decision

	Answer: No. The angle of the ramp is 12°. This is steeper than 4.8°
***Note** the answer gives both the angle read and the maximum angle.*	
Measure angles using a protractor (continued)	The diagram shows a plan for a staircase as part of house plan. The recommended angle for a staircase lies between 30° and 45°  Does the staircase in the plan meet the recommendation? Explain your decision. **Answer: Yes. The angle is 35° which is between 30° and 45° so the staircase meets the recommendation.**
***Note** the explanation states both the reading and the recommended angles*	

3.27. SCS 27 Represent discrete data in tables, diagrams and charts including pie charts, bar charts and line graphs

<table>
<tr><th>SCS</th><th>Examples</th></tr>
<tr><td colspan="2">27. Represent discrete data in tables, diagrams and charts including pie charts, bar charts and line graphs

Description(s):</td></tr>
<tr><td>Present results in a table</td><td></td></tr>
<tr><td>Organise information systematically using and labelling rows and columns</td><td>Timetable:

A manager asks their administrator to prepare the timetable for a business meeting. The meeting will have an introduction by the chairman lasting 10 minutes; a finance report for 15 minutes; discussion about the report for 15 minutes; input from the marketing department for 25 minutes; and the chairman’s summary for 10 minutes.

The meeting will start at 11:30am.

Prepare a timetable for the meeting including the start and finish times.

<table>
<tr><th colspan="2">Business meeting</th></tr>
<tr><th>Time</th><th>Item</th></tr>
<tr><td>11:30</td><td>Introduction by Chairman</td></tr>
<tr><td>11:40</td><td>Finance report</td></tr>
<tr><td>11:55</td><td>Discussion</td></tr>
<tr><td>12:10</td><td>Marketing department</td></tr>
<tr><td>12:35</td><td>Chairman’s summary</td></tr>
<tr><td>12:45</td><td>Finish</td></tr>
</table>
</td></tr>
</table>

Complete an order form or bill:

A company gets an order for four reams of paper costing £4.50 each, two packs of envelopes costing £7.60 each and a printer cartridge costing £24. All these prices are without VAT added. The company adds 20% VAT to the total. The company makes an invoice to show the customer the total cost of the items.

Complete the invoice below.

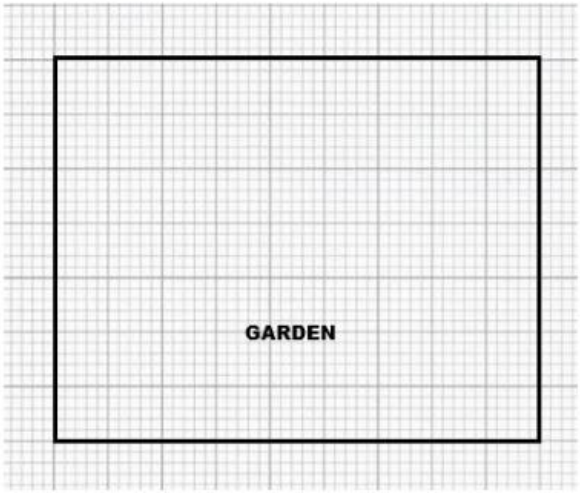
COMPANY INVOICE FOR CUSTOMER			
item	**cost per item (£)**	**quantity**	**cost (£)**
		Total without VAT	
		VAT (20%)	
		Total to pay	

Note: *candidates using online versions should be familiar with the table maker too*

Answer:

item	cost per item (£)	quantity	cost (£)
paper (ream)	4.50	4 reams	18.00
envelopes (100 pack)	7.60	2 packs	15.20
printer cartridge	24.00	1	24.00
		Total without VAT	57.20
		VAT (20%)	11.44
		Total to pay	68.64

Draw and label simple diagrams using results of calculations including scale conversions	A householder plans to put a rectangular pond at the top end of their garden. The pond is 3m long and 1.5m wide. They draw a plan to scale 1 :100 to show where it will go. Add a scale diagram to the plan below to show a suitable position for the pond.



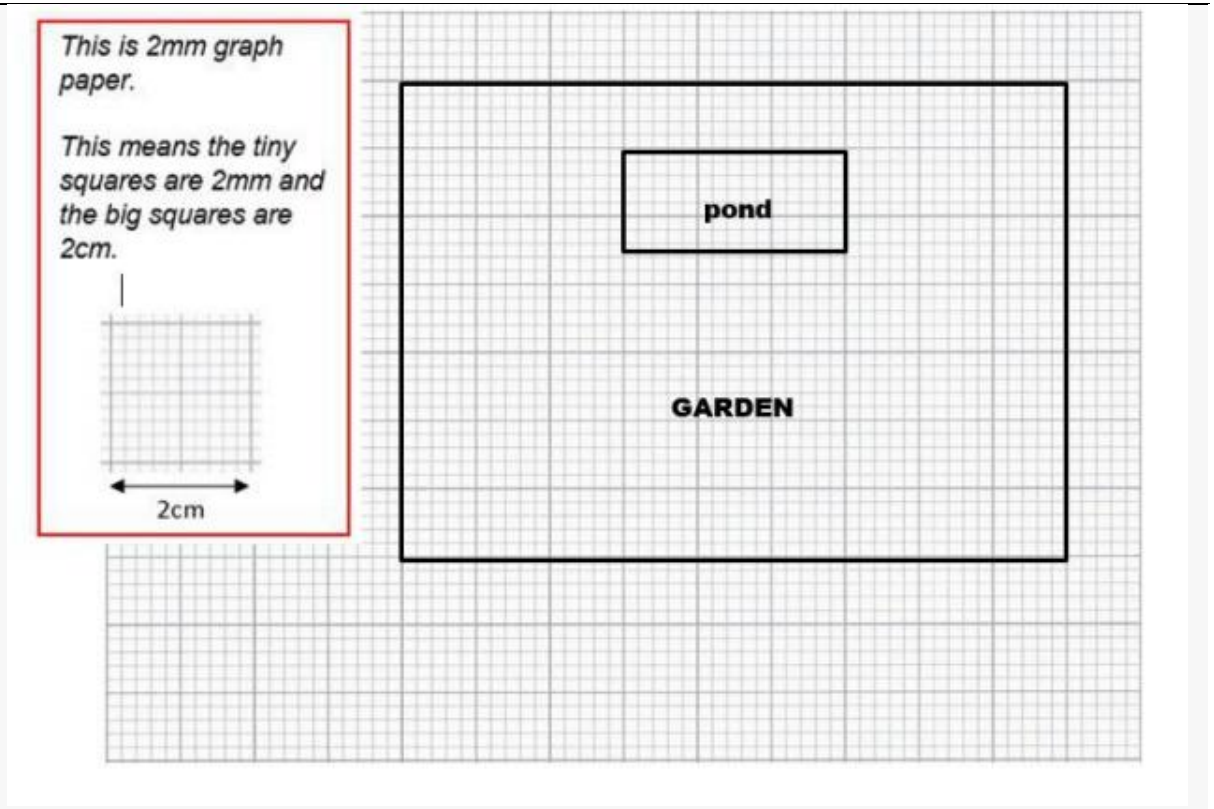
3m = 300cm scale

1 : 100 length for plan = 300 ÷ 100 = 3cm

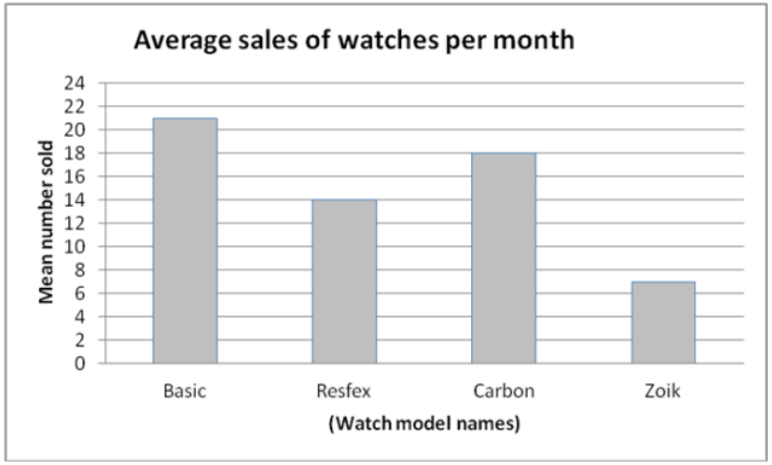
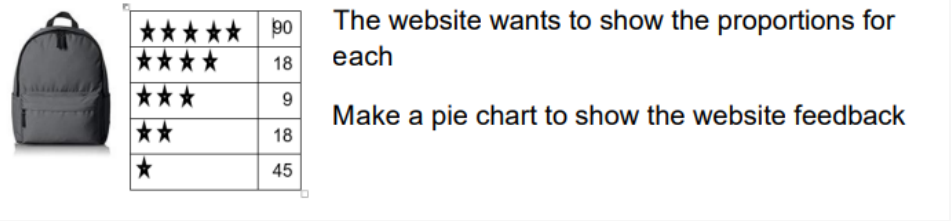
1.5m =150cm scale 1 : 100

length for plan = 150 ÷ 100 = 1.5cm

example answer – there are many other positions that can be chosen for the pond

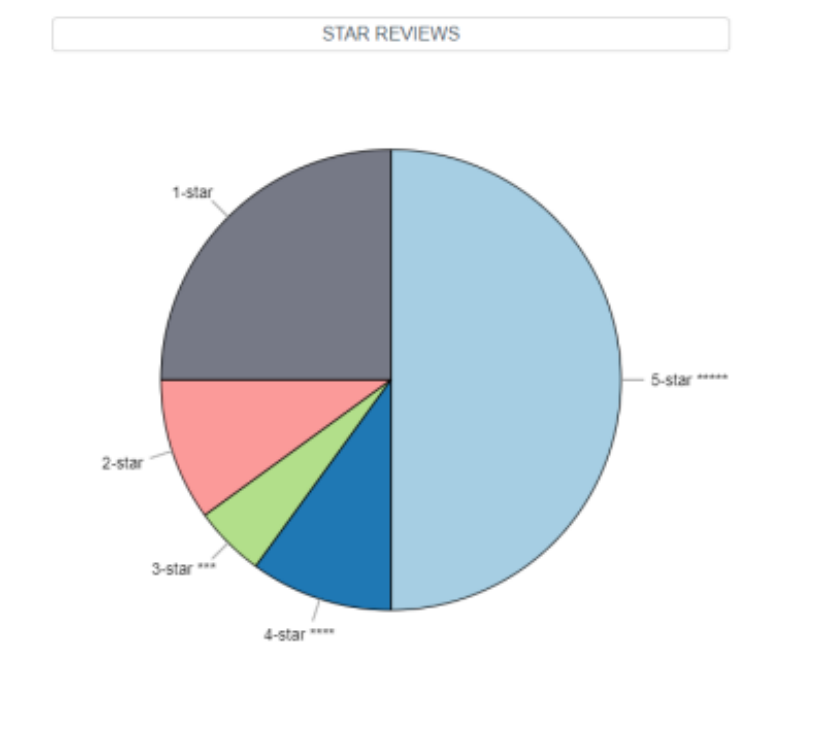


Note: *candidates using online versions should be familiar with the drawing tool on e-volve*

Present results in a bar chart Give the bar chart a title Choose and label suitable vertical and horizontal axes (labels should refer to units if appropriate) Construct a continuous linear scale starting at zero on the vertical axis Draw bars accurately Label bars or use a key	
Present results in a pie chart when results need to be shown as proportions	percentages
Give the pie chart a title Choose and label (or use key) a suitable number of sectors Construct sector sizes accurately relating results to a proportion of 360° Label bars or use a key	Customers who bought a backpack on a website posted these reviews.  The website wants to show the proportions for each Make a pie chart to show the website feedback. 90 +18 + 9 + 18 + 45 = 180

Angles for pie chart:

$\left(\frac{90}{180}\right) x\ 360\ =\ 180°\ \left(\frac{18}{180}\right) x360\ =\ 36°\ \left(\frac{9}{180}\right) x\ 360\ =\ 18°\ \left(\frac{45}{180}\right) x\ 360\ =\ 90°$

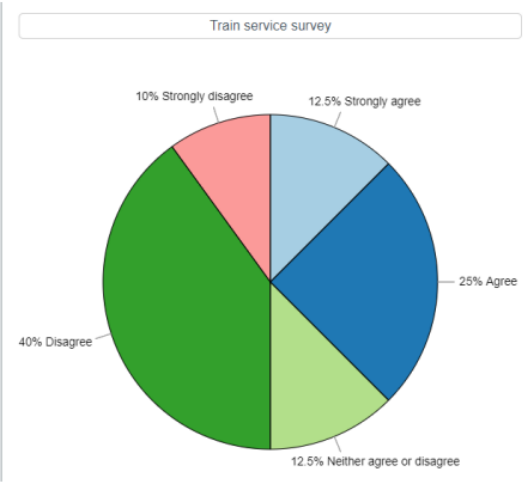


A local council wants to know whether the general public agrees with this statement: “the service provided on the trains is good”.

They asked 200 people. These are the results collected:

(Categories)	Survey responses	Percentage
Strongly agree	25	12.5%
Agree	50	25%
Neither agree nor disagree	25	12.5%
Disagree	80	40%
Strongly disagree	20	10%

Make a pie chart to show the results of the survey



Present results as a line graph

Give the line graph a title

Choose and label suitable vertical and horizontal axes (labels should refer to units if appropriate)

Construct continuous linear scales on both axes

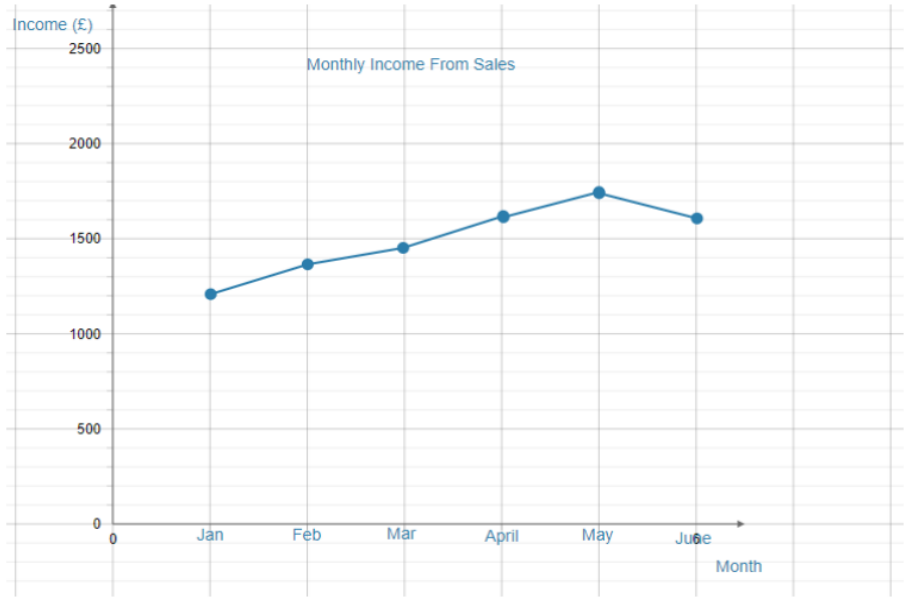
Plot points accurately

Join points with a line or construct a trend line* (line of best fit, a straight line with approximately equal numbers of plots on either side)

The table shows the monthly sales income of a small company in the first six months of the year.

The manager wants a line graph to show the sale income for these six months

Income from Sales			
Month	**Sales**	**Month**	**Sales**
January	£1200	April	£1600
February	£1350	May	£1750
March	£1450	June	£1600



***Note**: candidates using online versions should be familiar with the bar chart maker tool*

***Note**: candidates using online versions should be familiar with the pie chart maker tool*

***Note**: candidates may be advised that results are often more easily presented as bar charts unless there is a specific instruction to use a pie chart*

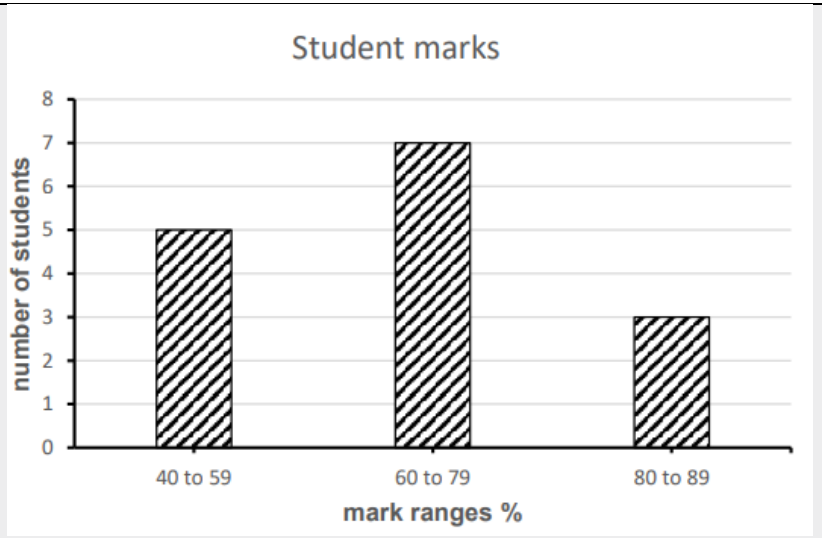
***Note**: A circular template will normally be provided for a pie chart, and candidates will require a protractor to measure angles in paper-based assessments.*

***Note**:* candidates using online versions should be familiar with the line graph maker tool

3.28. SCS 28 Group discrete data and represent grouped data graphically

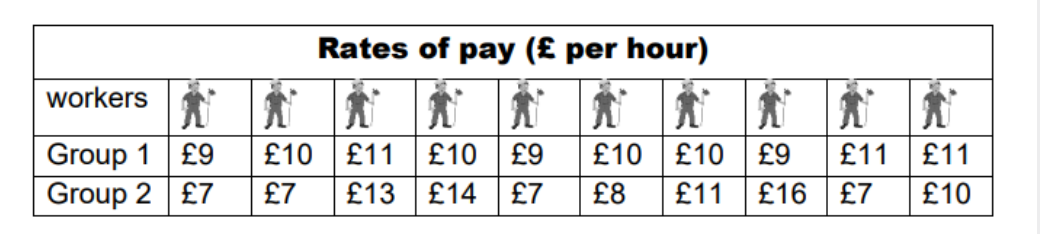
SCS	Examples
28. Group discrete data and represent grouped data graphically **Description(s):**	
Identify and select suitable group boundaries from lists or tables of data	
Ensure group boundaries do not overlap	20-30, 30-40 are overlapping at 30
Ensure groups are equally spread	21-30, 31-40, 41-50
	A college wants to show a breakdown of marks awarded to a group of students.

	The marks are shown in the table below. **Marks awarded (%)** 58 41 87 54 77 64 95 49 82 65 68 71 65 71 56 Put the marks into three suitable groups. Check range of marks; lowest 41, highest 95 Split range into three equal sections eg 40-59; 60-79; 80-99 **boundaries** **marks** **totals** 40-59 58 41 54 49 56 5 60-79 77 64 65 68 71 65 71 7 80-99 87 95 82 3 Check totals are same as number in table: 5 + 7 + 3 = 15
Present grouped data graphically	The simplest and clearest way will usually be a bar chart



3.29. SCS 29 Find the mean and range of a set of quantities

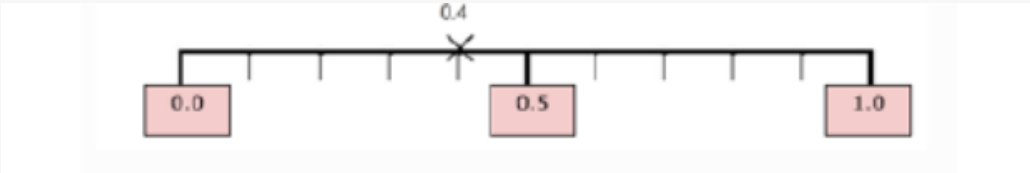
SCS	Examples
29. Find the mean and range of a set of quantities **Description**:	
Calculate mean	Total for all items ÷ number of items
Calculate range	Maximum value - minimum value

Understand the difference between mean and range	
Know that mean is an average	Measure of location if 10 people have a mean wage of £10 per hour, there is a general understanding that each of the 10 people earn about (an average of) £10 per hour
Know that range is a measure of variation or consistency of the data	Measure of dispersal Compare the pay of workers shown in the table below  Mean (Group 1) 9 + 10 + 11 + 10 + 9 + 10 + 10 + 9 + 11 + 11 = 100 100 ÷ 10 = 10 Mean (Group 2) 7 + 7 + 13 + 14 + 7 + 8 + 11 + 16 +7 + 10 = 100 100 ÷ 10 = 10 Both Group 1 and Group 2 workers have average pay of £10 per hour Range (Group 1) 11 – 9 = 2 Range (Group 2) 16 – 7 = 9

Rates of pay (£ per hour)										
workers										
Group 1	£9	£10	£11	£10	£9	£10	£10	£9	£11	£11
Group 2	£7	£7	£13	£14	£7	£8	£11	£16	£7	£10

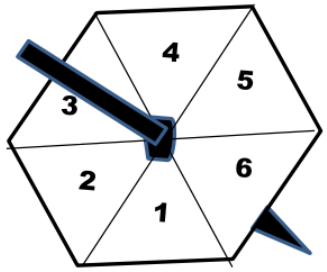
	The range value for Group 2 is higher than Group 1, so the range values show that the Group 1 workers' pay is more consistent (all workers nearer £10 per hour) than Group 2 workers' pay. The Group 2 workers' pay shows more variation (less consistency) than Group 1 workers' pay.

3.30. SCS 30 Understand probability on a scale from 0 (impossible) to 1 (certain) and use probabilities to compare the likelihood of events.

SCS	Examples
30. Understand probability on a scale from 0 (impossible) to 1 (certain) and use probabilities to compare the likelihood of events. **Description**:	
Understand that the chances (probability) of something happening	(impossible > unlikely > even chance > likely > certain) can be expressed on a number scale running 0 to 1 (0% to 100%)
Indicate a probability on a suitable diagram	Probability scale showing a probability of 0.4 (unlikely or 2 chances in 5) 

3.31. SCS 31 Use equally likely outcomes to find the probabilities of simple events and express them as fractions

SCS	Examples
31. Use equally likely outcomes to find the probabilities of simple events and express them as fractions **Description**:	
Understand that points on a probability scale can be expressed as fractions, decimal fractions (or percentages)	
Work out simple numerical expressions of probability	Balls numbered 1 to 50 are placed in a lottery machine which ejects single balls at random. What is the probability that the first ball drawn out is number 8? Answer: As there are 50 balls and number 8 is one ball, the chance (probability) that number 8 is the first ball out is 1 in 50. Answer can be expressed as $\frac{1}{50}$ or 0.02 (or 2%)
	A player needs to score four points or more to win a game. What is the probability that they will win the game on their next spin?



To win the game on their next turn, the player must score a 4, 5 or a 6. As there are six numbers on the spinner and numbers 4, 5 and 6 are three of the numbers, the chance (probability) of scoring at least four is 3 in 6

Answer can be expressed as $\frac{1}{2}$ or 0.5 (or 50%)

A player throws a six-sided dice.

What is the probability that they will score less than 3?

To score less than three, the player must throw 1 or 2 (ie two numbers out of the six numbers on the dice).

Probability is $\frac{2}{6} = \frac{1}{3}$

4. Appendix 2 City and Guilds Test specification 4748-119 and 4748-219

Total 60 marks

Time 1 hour 45 minutes (Section 1 - 25 minutes, Section 2 - 1 hour 20 minutes)

	Total marks	Calculator (75%)	Non-calculator (25%)	Underpinning skills (25%)	Problem solving (75%)
Section 1 Non-calculator	**15**	*0*	*15*	*10*	*5*
Section 2 Calculator	**45**	*45*	*0*	*5*	*40*
Totals	**60**	*45*	*15*	*15*	*45*

Level 1 Subject Content Coverage

26-28 of the 31 numbered content statements must be covered in each paper (ie 84-90%)

(need at least 75% of numbered SCS from each content area)

100% of numbered statements must be covered over every three assessment versions

Must meet 100% of the problem-solving bullet points across the test

All problem-solving questions should contain attributes A* and C**

** A Task has little or no scaffolding; there is little guidance given to the student beyond a start point and a finish point. Question does not explicitly state the mathematical process(es) required for the solution*

** C *Information not given in mathematical form or in mathematical language; or there is a need for results to be interpreted or methods evaluated, e.g. in a real-world context*.

(p19 DfESubject Content Functional Skills Mathematics)

5. Appendix 3 Specifications for lower levels (subsumed in Level 1) Note: numbers refer to subject content specifications (SCS) in DfE Subject Content

Using numbers and the number system		
Entry Level 1 ***whole numbers***	**Entry Level 2** ***whole numbers, fractions and decimals***	**Entry Level 3** ***whole numbers, fractions and decimals***
1.Read, write, order and compare numbers up to 20	2. Read, write, order and compare numbers up to 200	1. Count, read, write, order and compare numbers up to 1000
2.Use whole numbers to count up to 20 items including zero	1. Count reliably up to 100 items	6. Recognise and continue linear sequences of numbers up to 100
	3. Recognise and sequence odd and even numbers up to 100	
4. Recognise and interpret the symbols +, – and = appropriately	4. Recognise and interpret the symbols +, – , x, ÷ and = appropriately	
3.Add numbers which total up to 20, and subtract numbers from numbers up to 20	5. Add and subtract two-digit numbers	2. Add and subtract using three-digit whole numbers
	6. Multiply whole numbers in the range 0x0 to 12x12 (times tables)	4. Multiply two-digit whole numbers by single and double digit whole numbers
	8. Divide two-digit whole numbers by single-digit whole numbers and express remainders	3. Divide three-digit whole numbers by single and double digit whole numbers and express remainders
	9. Approximate by rounding to the nearest 10, and use this rounded answer to check results	5. Approximate by rounding numbers less than 1000 to the nearest 10 or 100 and use this rounded answer to check results
		7. Read, write and understand thirds,

	10. Recognise simple fractions (halves, quarters and tenths) of whole numbers and shapes	quarters, fifths and tenths including equivalent forms
	11. Read, write and use decimals to one decimal place	8. Read, write and use decimals up to two decimal places
		9. Recognise and continue sequences that involve decimals

Using common measures, shape and space		
5. Recognise coins and notes and write them in numbers with the correct symbols (£ & p), where these involve numbers up to 20	12. Calculate money with pence up to one pound and in whole pounds of multiple items and write with the correct symbols (£ or p)	10. Calculate with money using decimal notation and express money correctly in writing in pounds and pence
		11. Round amounts of money to the nearest £1 or 10p
6. Read 12 hour digital and analogue clocks in hours	13. Read and record time in common date formats, and read time displayed on analogue clocks in hours, half hours and quarter hours, and understand hours from a 24-hour digital clock	12. Read, measure and record time using am and pm
7. Know the number of days in a week, months, and seasons in a year. Be able to name and sequence	7. Know the number of hours in a day and weeks in a year.	13. Read time from analogue and 24-hour digital clocks in hours and minutes
8. Describe and make comparisons in words between measures of items including size, length, width, height, weight and capacity	14. Use metric measures of length including millimetres, centimetres, metres and kilometres	15. Compare metric measures of length including millimetres, centimetres, metres and kilometres

	15. Use measures of weight including grams and kilograms	14. Use and compare measures of length, capacity, weight and temperature using metric or imperial units to the nearest labelled or unlabelled division
		16. Compare measures of weight including grams and kilograms
	16. Use measures of capacity including millilitres and litres	17. Compare measures of capacity including millilitres and litres
	17. Read and compare positive temperatures	
	18. Read and use simple scales to the nearest labelled division	18. Use a suitable instrument to measure mass and length
9. Identify and recognise common 2-D and 3-D shapes including circle, cube, rectangle (including square) and triangle	19. Recognise and name 2-D and 3-D shapes including pentagons, hexagons, cylinders, cuboids, pyramids and spheres	19. Sort 2-D and 3-D shapes using properties including lines of symmetry, length, right angles, angles including in rectangles and triangles
	20. Describe the properties of common 2-D and 3-D shapes including numbers of sides, corners, edges, faces, angles and base	
10. Use everyday positional vocabulary to describe position and direction including left, right, in front, behind, under and above	21. Use appropriate positional vocabulary to describe position and direction including between, inside, outside, middle, below, on top, forwards and backwards	20. Use appropriate positional vocabulary to describe position and direction including eight compass points and including full/half/quarter turns

Handling information and data		
Entry Level 1	**Entry Level 2**	**Entry Level 3**
11. Read numerical information from lists	22. Extract information from lists, tables, diagrams and bar charts	21. Extract information from lists, tables, diagrams and charts and create frequency tables
	23. Make numerical comparisons from bar charts	22. Interpret information, to make comparisons and record changes, from different formats including bar charts and simple line graphs
12. Sort and classify objects using a single criterion	24. Sort and classify objects using two criteria	
13. Read and draw simple charts and diagrams including a tally chart, block diagram/graph	25. Take information from one format and represent the information in another format including use of bar charts	23. Organise and represent information in appropriate ways including tables, diagrams, simple line graphs and bar charts

Solving mathematical problems and decision making		
Entry Level 1	**Entry Level 2**	**Entry Level 3**
use the knowledge and skills listed above to recognise a **simple mathematical problem** and obtain a solution. A simple mathematical problem is one which requires working through one step or process and	use the knowledge and skills listed above to recognise a **simple problem** and obtain a solution. A simple problem is one which requires working through one step or process and which draws upon knowledge and/or skills from one mathematical content area	use the knowledge and skills listed above to recognise a **simple problem** and obtain a solution. A simple problem is one which requires working through one step or process. and which draws upon knowledge and/or skills from one mathematical content area

which draws upon knowledge and/or skills from one mathematical content area		
• Use given mathematical information and recognise and use simple mathematical terms appropriate to Entry Level 1	• Use given mathematical information including numbers, symbols, simple diagrams and charts	• Use given mathematical information including numbers, symbols, simple diagrams and charts
	• Recognise, understand and use simple mathematical terms appropriate to Entry Level 2	• Recognise, understand and use simple mathematical terms appropriate to Entry Level 3
• Use the methods given above to produce, check and present results that make sense	• Use the methods given above to produce, check and present results that make sense	• Use the methods given above to produce, check and present results that make sense to an appropriate level of accuracy
• Provide a simple explanation for those results	• Present appropriate explanations using numbers, measures, simple diagrams, simple charts and symbols appropriate to Entry Level 2	• Present results with appropriate and reasoned explanation using numbers, measures, simple diagrams, charts and symbols appropriate to Entry Level 3.
The context for simple problems at this level should be familiar to all students and easily described.	*The context for simple problems at this level should be familiar to all students and easily described.*	*The context for simple problems at this level should be familiar to all students.*

Contact us

Giltspur House 5-6 Giltspur Street London EC1A 9DE

customersupport@cityandguilds.com

01924 930 801

www.cityandguilds.com

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