

## Summary

### Test Identification

<b>Name</b>	2022 MAT SW 1.5
<b>Date Created</b>	07 Jan 2022
<b>Date Modified</b>	21 Mar 2022
<b>Subject</b>	Mathematics
<b>Status</b>	SCORED
<b>Sequence Number</b>	1195260
<b>Total Test Time</b>	57 minutes
<b>Delivery Method</b>	Onscreen

### Curriculum Strand

<b>Number Sense &amp; Operations</b>	12	<b>Number Knowledge</b>	10
<b>Statistics</b>	9	<b>Algebra</b>	11

### Curriculum Level

<b>4B</b>	1	<b>4P</b>	1	<b>4A</b>	4
<b>5B</b>	10	<b>5P</b>	13	<b>5A</b>	6
<b>6B</b>	2	<b>6P</b>	3	<b>6A</b>	2

### Cognitive Processing

<b>Surface</b>	22	<b>Deep</b>	20
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### Slider Settings

<b>Strands</b>		<b>Level</b>	
<b>Number Knowledge</b>	Most	<b>Level 4</b>	Few
<b>Number Sense &amp; Operations</b>	Most	<b>Level 5</b>	Most
<b>Algebra</b>	Most	<b>Level 6</b>	Few
<b>Statistics</b>	Most		

## Marking Guide : 2022 MAT SW 1.5

Q.No	Marking Key
<u>1</u>	4
<u>2</u>	c
<u>3</u>	b
<u>4</u>	d
<u>5</u>	c
<u>6</u>	a
<u>7</u>	e
<u>8</u>	67 OR (8x8)+3
<u>9</u>	d
<u>10</u>	e
<u>11</u>	b
<u>12</u>	d
<u>13</u>	b
<u>14</u>	a
<u>15</u>	b
<u>16</u>	Maths
<u>17</u>	d
<u>18</u>	c
<u>19</u>	d
<u>20</u>	b
<u>21</u>	1/50
<u>22</u>	62 1/2 % or 62.5%
<u>23</u>	0.36
<u>24</u>	c
<u>25</u>	b
<u>26</u>	false, true, true, false 'All correct for 1 mark (not possible, possible, possible, not possible)'
<u>27</u>	a
<u>28</u>	524 metres
<u>29</u>	c
<u>30</u>	d
<u>31</u>	the average weight of people is increasing 'Accept "they are heavier"'
<u>32</u>	90%

### Instructions

**Underlined Questions** e.g. 10 :Use teacher judgement. Give 1 if answer matches marking guide (unless otherwise instructed). For incorrect answers give 0 (zero).

**All other Questions:** Enter the response chosen by the student using letters. For example, 'a' for the first option; 'b' for the second option; 'c' for the third option and so on.

**Questions Not Answered:** Enter a dash (-).

Q.No	Marking Key
<b>33</b>	72.9%. Because clean up is 10% of remaining oil per day (i.e. 10% x 90% etc) 'answer and some explanation or calculation id required for 1 mark'
<b>34</b>	6.6 days, so 7 days. Continue the series of decreasing 10% per day of remaining oil '7 days and some explanation or calculation required for 1 mark'
<b>35</b>	c
<b>36</b>	true, false, false 'All correct for 1 mark (Population, Sample, Sample)'
<b>37</b>	c
<b>38</b>	Many answers possible 'Any sensible and reasonable question.'
<b>39</b>	$6-1=4+2$ or $4+2=6-1$
<b>40</b>	(1,4)
<b>41</b>	24
<b>42</b>	Discrete; they are countable (whole numbers), not measured 'Both required for 1 mark.'

ADMINISTER ONLY SCREEN ONLY

Instructions

**Underlined Questions** e.g. 10 :Use teacher judgement. Give 1 if answer matches marking guide (unless otherwise instructed). For incorrect answers give 0 (zero).

**All other Questions:** Enter the response chosen by the student using letters. For example, 'a' for the first option; 'b' for the second option; 'c' for the third option and so on.

**Questions Not Answered:** Enter a dash (-).

Choose a circle to show how much each sentence is like you

Very Unlike Me 1	Unlike Me 2	Like Me 3	Very Like Me 4
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**01.** It is very important to me to be good at maths.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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**02.** I try to get more maths answers right than my friends.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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**03.** I like hard, challenging maths.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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**04.** I do as much school work as possible in maths.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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**05.** I like to help my friends with their maths school work.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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**06.** I like it when the maths examples are hard.

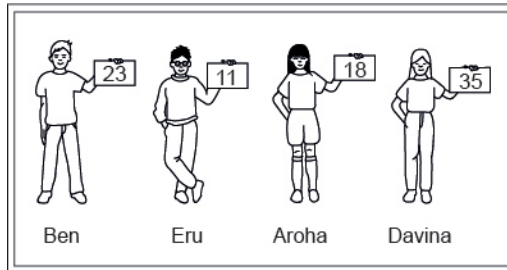
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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ADMINISTER ON SCREEN ONLY

## Practice Questions

These practice questions are to help you understand how to show your answer for different types of questions.

**P01.** Who is holding a card with an even number on it?

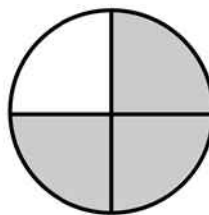


- Ben
- Eru
- Aroha
- Davina

**P02.** Complete this number pattern.

2, 4, \_\_\_\_\_, \_\_\_\_\_, 10

**P03.** What fraction of this circle is shaded?



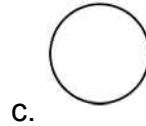
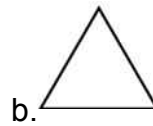
\_\_\_\_\_



**P04.** Match the sentence with the correct shape.

1. I have three sides

2. I have 4 sides



**P05.** Which numbers make this number sentence **TRUE**?

$$2 + \star > 5$$

1

2

3

4

5

**P06.** Put the numbers 1, 2, 3, and 4 in the boxes to order these numbers from biggest (1) to smallest (4).

3

7

2

0

**P07.** Select whether the following statements are True or False.

In the number 213, the value of 1 is ten.

**TRUE**

**FALSE**

In the number 504, the value of 5 is fifty.

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ONLY

**01.** Kirstie went skiing on the weekend.

When Kirstie started skiing at 7:00 am the temperature was  $-5^{\circ}\text{C}$ . By midday the temperature had risen  $9^{\circ}\text{C}$ .



What was the temperature at midday?

\_\_\_\_\_  $^{\circ}\text{C}$

**02.** Which of the following is **NOT** a prime number?

- 13
- 17
- 33
- 47

**03.** What is 4 hundredths written in decimal notation?

- 0.004
- 0.04
- 0.400
- 4.00
- 400.0



04. Which goes in the blank to make the statement **TRUE**?

2.301 > \_\_\_\_\_

- 23.1
- 2.3010
- 2.310
- 2.13

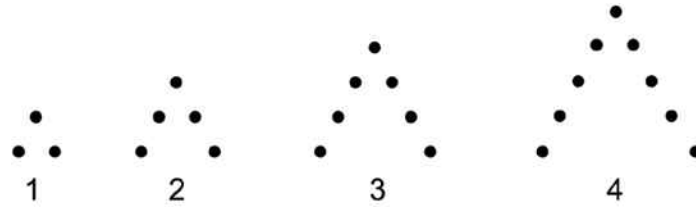
05. A teacher and a doctor each have 45 books. If  $\frac{4}{5}$  of the teacher's books and  $\frac{2}{3}$  of the doctor's books are novels, how many more novels does the teacher have than the doctor?

- 2
- 3
- 6
- 30
- 36

06. Which group of numbers contains **only** prime numbers?

- 2, 3, 13
- 3, 9, 13
- 9, 12, 13
- 2, 3, 4

07. If this pattern of dot-figure is continued, how many dots will be the 100th figure?



- 100
- 101
- 199
- 200
- 201

08. Use the information below to answer the question.

The table below shows some number pairs. The following rule was used to find each number in column B.

Rule: Multiply the number in column A by itself and then add 3.

Fill in the missing number, using the same rule.

	<b>A</b>	<b>B</b>
Example:	2	$7 = (2 \times 2) + 3$
	3	12
	5	28
	8	_____

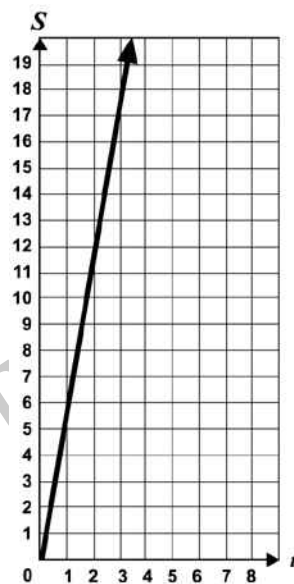
09. Which of the following is **NOT** a prime number?

- 2
- 5
- 17
- 121

10.  $(-5)(-7) =$

- 35
- 12
- 2
- 12
- 35

11. Roy works at the local grocery store and is paid \$6.00 per hour. The graph shown describes his salary,  $S$ , based on the number of hours,  $t$ , he works. Which is an equation of the graph shown?



- $S = 6 + t$
- $S = 6t$
- $S = \frac{6}{t}$
- $S = \frac{t}{6}$

12. If  $\frac{2}{25} = \frac{n}{500}$ , then  $n =$

- 10
- 20
- 30
- 40
- 50

13. Lucy surveyed all year levels at her school to find out who received a CD for Christmas.

The results are below.

Lucy found the highest percentage of students who received a CD for Christmas was in

Year	Students who received a CD
7	31 out of 50
8	17 out of 25
9	65 out of 100
10	12 out of 20

- Year 7.
- Year 8.
- Year 9.
- Year 10.

14. Which of the following measurements would **MOST** likely be given with a negative exponent in scientific notation?

- The diameter of a blood cell in centimetres
- The distance to the Sun in kilometres
- The weight of a pencil in grams
- The mass of a rocket in kilograms

15. What is the median of the numbers below?

4, 8, 3, 2, 5, 8, 12

- 4
- 5
- 6
- 7
- 8

Use the following information to answer question 16..

The table shows a comparison of marks of Maths and English in 10Mt's end of year exams.

	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
Maths	12	36	46	58	76
English	24	32	48	61	82

16. Which subject has the marks with the greatest range?

\_\_\_\_\_

End of Section

17. Which of the following equations is **TRUE** for the three pairs of  $x$  and  $y$  values in the table below?

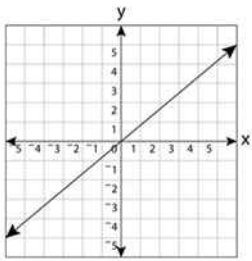
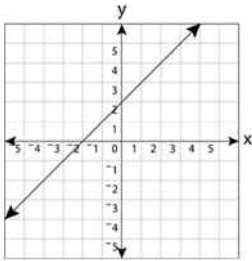
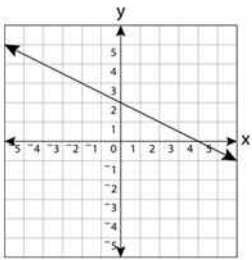
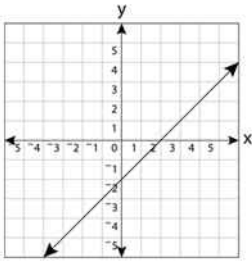
$x$	$y$
0	-3
1	-1
2	1

- $y = 3x + 2$
- $y = 3x - 2$
- $y = 2x + 3$
- $y = 2x - 3$
- $y = x - 3$

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18. Which graph corresponds to this table?

x	y
-3	-1
0	2
3	5



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19. When any term in this sequence is divided by the previous term, the result is always the same.

3, -6, 12, -24, . . .

What is the 7th term of this sequence?

- 192
- 96
- 96
- 192

20. Andy's average driving speed for a 4-hour trip was 45 kilometres per hour. During the first 3 hours he drove 40 kilometres per hour.

What was his average speed for the last hour of his trip?

- 50 kilometres per hour
- 60 kilometres per hour
- 65 kilometres per hour
- 70 kilometres per hour

Use the following information to answer questions 21 to 23.

Complete each question to show equivalence.

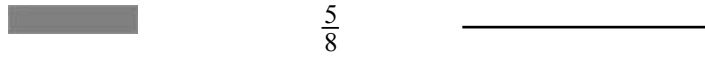
(Do **not** fill in the shaded boxes.)

	Decimal	Fraction	Percentage
21.	0.02	_____	





22.



23.



End of Section

24. The chart below shows how the cost ( $c$ ) of a wedding depends on the number of people ( $n$ ) attending the reception. Which equation **BEST** represents this relationship?

$n$	10	25	50	100
$c$	\$900.00	\$1500.00	\$2500.00	\$4500.00

- $c = 20n + 700$
- $c = 30n + 600$
- $c = 40n + 500$
- $c = 50n + 400$

25.  $2\sqrt{5}$  is between

- 2 and 3
- 4 and 6
- 6 and 9
- 9 and 12

26. Akira read from a book on Monday, Tuesday, and Wednesday. He read an average of 10 pages per day.

Indicate whether each of the following is **possible** or **not possible**.

Pages Read			Possible	Not possible
Monday	Tuesday	Wednesday		
4 pages	4 pages	2 pages	<input type="radio"/>	<input type="radio"/>
9 pages	10 pages	11 pages	<input type="radio"/>	<input type="radio"/>
5 pages	10 pages	15 pages	<input type="radio"/>	<input type="radio"/>
10 pages	15 pages	20 pages	<input type="radio"/>	<input type="radio"/>

27. Mr Rosenthal purchased dining room furniture on a no-interest, 24 months-to-pay sale. The total cost of the furniture was \$1892. He planned to make a deposit of \$350 and used  $1892 = 350 + 24x$

to determine the amount of each monthly payment,  $x$ .

How much should Mr Rosenthal pay each month?

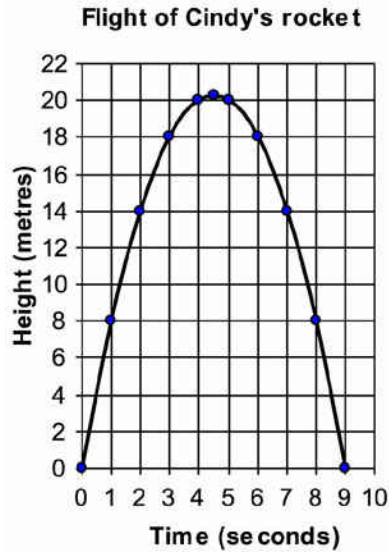
- \$64.25
- \$64.70
- \$93.42
- \$643.50

28. The lowest point of the St Lawrence River is 98 metres below sea level. The top of Mt Jacques Cartier is 426 metres above sea level.

How many metres higher is the top of Mt Jacques Cartier than the lowest point of the St Lawrence River?

\_\_\_\_\_

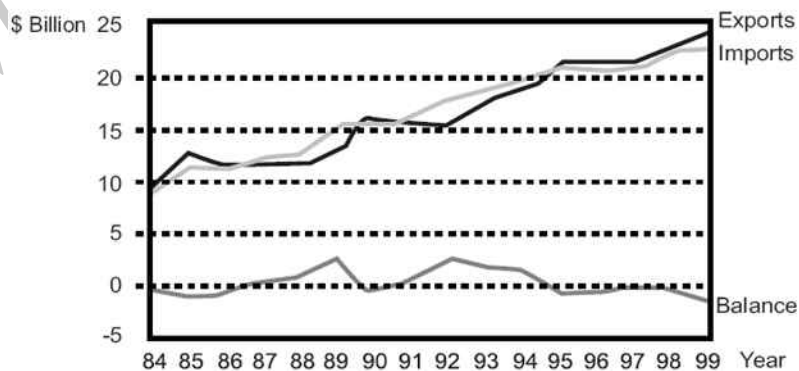
29. The graph shows the height of Cindy's model rocket during the course of its flight. Which of these equations can be used to find the height of the rocket at any time during its flight?



- $y = 9^x$
- $y = x^2 - 81$
- $y = -x^2 + 9x$
- $y = 9 - 9x^2$

Use the following information to answer question 30..

Overseas Merchandise Trade, 1984-99



**30.** In the Overseas Merchandise Trade graph, how is the Balance related to the Exports and Imports?

- Imports = Balance - Exports
- Exports = Imports + Balance
- Balance = Exports + Imports
- Balance = Imports - Exports

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End of Section

**31.** Roger was travelling in a lift when he read the specifications that said it could carry 588kg or a maximum of 8 people. The lift was then checked by the safety inspector and the specifications were changed to read 588kg or a maximum of 6 people.

What is implied about the weights of people by changing the specifications?

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**Use the following information to answer questions 32 to 34**

A company is hired to clean up an oil spill in a harbour. Each day 10% of the remaining oil can be cleaned from the surface of the water.

**32.** What percent of the oil spill will remain after one clean-up day?

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**33.** What percent of the oil spill will remain after 3 clean-up days?  
Explain how you found your answer.

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**34.** How many clean-up days will it take to remove at least 50% of the oil spill?  
Explain how you found your answer.

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End of Section

**35.** The student population in the Greenville school system is increasing by about 10% each year. This year there are 3120 students in the Greenville school system. If this trend continues, which of the following is closest to the number of students who will be in this school system 3 years from now?

- 3400
- 4000
- 4200
- 9400

**36.** A factory manufactures washing machines, and conducts tests before they leave the factory.

For each of the following tests, state whether you would use the **Population** or a **Sample** of washing machines manufactured.

	<b>Population</b>	<b>Sample</b>
Test the on/off switch to see if the washing machine works.	<input type="radio"/>	<input type="radio"/>
Test the machine to see how many hours it will last before it breaks down.	<input type="radio"/>	<input type="radio"/>
Test the machine with a load of dirty football jerseys to check that it washes properly.	<input type="radio"/>	<input type="radio"/>

**37.** According to the 1990 U.S. Census, 27.2% of Massachusetts residents over the age of 25 had graduated from a 4-year college programme.

In a pie graph representing all Massachusetts residents over the age of 25, about how many degrees should be in the sector representing these 4-year college graduates?

- 27°
- 17°
- 98°
- 68°

**38.** John and all his friends carry cell phones and use them heavily. Last year, two of John's friends developed brain tumours. John wonders if tumours are related to cell phones.

Write a question for a questionnaire that John could use to investigate this topic.

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**39.** Wayne had a pipe 6 metres long and he cut off a length ( $p$ ). Susan has a 4 metre pipe and she added on twice the length that Wayne cut off. Wayne's pipe and Susan's pipe are now the same length.

Write down an equation using the length  $p$  information.

\_\_\_\_\_

**40.** The ordered pairs below should lie on a straight line, but one has been typed incorrectly.

( -2 , -5 ) ( -1 , -2 ) ( 0 , 1 ) ( 1 , 2 ) ( 2 , 7 )

Write down the correct co-ordinates for this point, so all of the points do form a straight line.

( \_\_\_\_\_ , \_\_\_\_\_ )

**41.** Dan baked some cookies. Sam took half of the cookies. Then Sue took half of the remaining cookies. Later, Lisa took half of the cookies that were left. When Dan came home, he saw only three cookies.

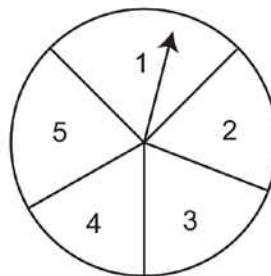
How many cookies did Dan bake altogether?

\_\_\_\_\_

**Use the following information to answer question 42..**

The diagram shows a spinning wheel where the arrow can point to one of the five numbers 1, 2, 3, 4, 5. The results from 100 spins are shown in the table.

Number	1	2	3	4	5
Frequency	15	18	24	24	19



**42.** Explain why this data is either continuous or discrete.

\_\_\_\_\_

Please provide these instructions to all staff involved with administering e-asTTle online.

## Before the testing session

### 1. Make sure students have the right devices and browsers installed

Unsupported devices may result in the test not displaying correctly and affect students' scores.

#### Desktop/Laptop

- Windows, Mac or Chromebook
- Minimum window width: 1280 pixels
- Windows devices need up-to-date Edge, Chrome, Firefox or IE11
- Windows tablets/hybrids e.g., Surface Pro must have a keyboard attached
- Mac devices need recent Chrome or Safari

#### Tablet (9"+)

- iPads: iOS10+ with Safari
- Androids: Large tablet e.g., Samsung Galaxy Tab 4. Must have Android 5+ and latest Chrome
- Minimum window width: 768 pixels

iPad Minis and small Androids must not be used.

More information on device requirements and the underlying rationale is available on the [help site](#).

### 2. Sit the Practice Test

[A practice test for each subject](#) is available. These are also available in the Student Portal (no login required). Practice tests are designed to familiarise you and your students with e-asTTle online before sitting a real test. Each practice test contains attitude questions, look-over time and 5-8 questions designed to be relatively simple to answer. [Teacher scripts](#) are available for practice tests.

### 3. Ensure you have student login information

More information on accessing student logins and resetting passwords is available on the [help site](#).

### 4. Check if calculators are required (Maths/Pāngarau)

Tests with questions at mostly Level 5 and 6 require the use of calculators. Tests with questions at mostly Levels 2 to 4 do NOT require a calculator.

## During the testing session

### 1. Check equipment

- Make sure students' devices are charged.
- Make sure students have scrap paper and a pen/pencil for working, calculators (if needed) and a quiet activity they can continue with if they finish early.

### 2. Read the Test Details to students

Once students select a test, they will see the test details page (example shown on right).

Read through this page aloud with your students.





Other reminders to discuss with students:

- Once they choose 'Yes', the timer starts. Once the timer is counting down, there is no way to pause the test. If students close the test accidentally, they can re-open it again, provided the timer hasn't finished.
- Ask students to raise their hand if something seems wrong.
- Fullscreen mode is recommended.

For students on iPad or Android tablet devices: remind them to lock their device in portrait mode.

For students on Windows hybrid devices (such as the Surface Pro): remind them to keep the keyboard attached during the test.

### 3. Supervising the test

Make sure you walk around and monitor students during the test. Students tend to continue with their test even if something has gone wrong – for example, a question does not display correctly. For this reason, check that pages are loading correctly, and students are scrolling to see all the content and options. It's a good idea to have a paper booklet of the test available during the testing session.

Students are generally expected to read the test content without assistance. Information on accommodations (e.g., reader-writers) is available on the [help site](#).

### 4. Know what to do if things go wrong


#### Internet disconnected

If student answers aren't saving, e-asTTle will show a yellow banner at the top of the page. The banner will turn red when there has been disconnection for 2 minutes or more. Students can keep answering whatever they can, and e-asTTle will try and save answers. Don't refresh or close the window if a coloured banner is showing.



If the Internet has been down, use your professional judgement to decide if students' results should be [excluded](#).

#### Images not loading

If an image is missing, students will see an icon they can click to try and reload the image. 

#### A question doesn't load fully or looks strange

If something has loaded incorrectly, it can sometimes be corrected by selecting the 'Next' button then the 'Previous' button to reload the question.

Detailed troubleshooting information is available on the [help site](#). To report issues with online testing or for additional assistance, please contact the Education Service Desk: 0800 225 5428.