

Summary

Test Identification

Name	2022 MAT SW 1.4
Date Created	07 Jan 2022
Date Modified	06 Apr 2022
Subject	Mathematics
Status	SCORED
Sequence Number	1195259
Total Test Time	57 minutes
Delivery Method	Onscreen

Curriculum Strand

Number Sense & Operations	15	Number Knowledge	10
Statistics	10	Algebra	10

Curriculum Level

3B	0	3P	3	3A	2
4B	13	4P	7	4A	12
5B	2	5P	5	5A	1

Cognitive Processing

Surface	25	Deep	20
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Slider Settings

Strands		Level	
Number Knowledge	Most	Level 3	Few
Number Sense & Operations	Most	Level 4	Most
Algebra	Most	Level 5	Few
Statistics	Most		

Marking Guide : 2022 MAT SW 1.4

Q.No	Marking Key
<u>1</u>	B
<u>2</u>	d
<u>3</u>	a
<u>4</u>	One million, four hundred and eighty-three thousand, seven hundred and twenty-two
<u>5</u>	2, 3, 4, and 6 'Must have all four. Incorrect if answer includes 1 and/or 12.'
<u>6</u>	d
<u>7</u>	d
<u>8</u>	a
<u>9</u>	7 cm
<u>10</u>	c
<u>11</u>	c
<u>12</u>	c
<u>13</u>	Great/Nice, OK/Alright, Bad/Unpleasant, Nasty/Horrible, or similar. 'Must have similar progression through the categories, even if words not exactly same.'
<u>14</u>	d
<u>15</u>	c
<u>16</u>	b
<u>17</u>	a
<u>18</u>	c
<u>19</u>	b
<u>20</u>	c
<u>21</u>	1/5 (or equivalent fraction), 20% 'Both required for 1 mark.'
<u>22</u>	0.31, 31% 'Both required for 1 mark.'
<u>23</u>	1/4 (or equivalent fraction), 0.25 'Both required for 1 mark.'
<u>24</u>	c
<u>25</u>	c
<u>26</u>	a
<u>27</u>	d
<u>28</u>	d

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
29	c
30	c
31	b
32	b
33	d
34	d
35	b
36	d
37	b
38	c
39	c
40	C = 200 + 50h 'Or equivalent for 1 mark'
41	16 hours. (1000 = 200 + 50h) 'Only answer required for 1 mark'
42	b
43	Most bookings Fri and Sat. Low bookings Mon and Tues
44	(x + 2) years old
45	20

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.

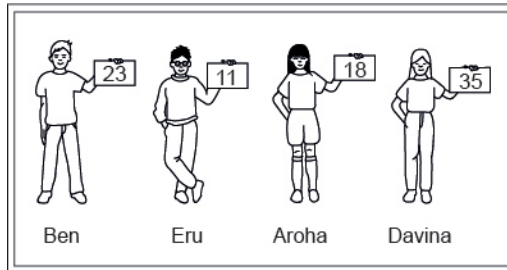
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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ADMINISTER ON SCREEN ONLY

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?

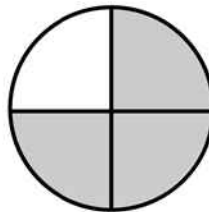


- Ben
- Eru
- Aroha
- Davina

P02. Complete this number pattern.

2, 4, _____, _____, 10

P03. What fraction of this circle is shaded?

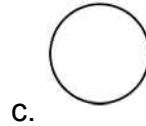
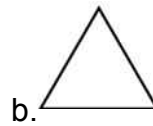




P04. Match the sentence with the correct shape.

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.

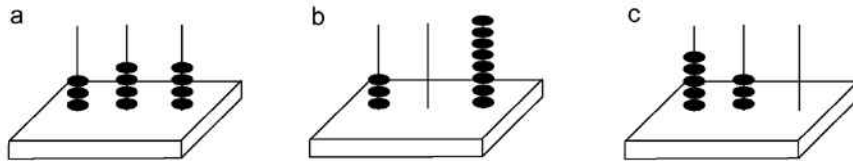
TRUE

FALSE

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

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ONLY

Use the three abacuses shown to answer the question01..



01. Which abacus shows the smallest number?

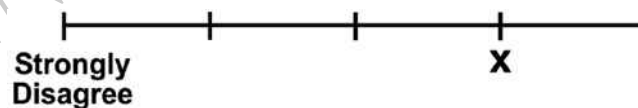
End of Section

02. Which number is five hundred and three thousand, four hundred and seventy?

- 500 347
- 530 470
- 503 407
- 503 470

03. This is part of an opinion scale. The opinions Agree, Strongly Agree, Undecided and Disagree are missing.

Which opinion would be **BEST** located at **X**?

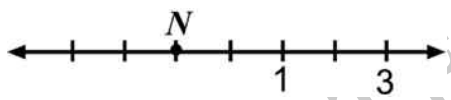
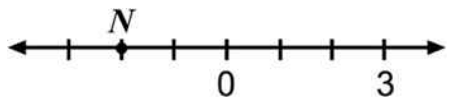
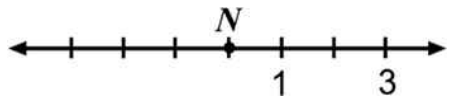
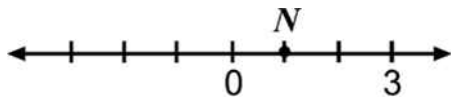


- Agree
- Strongly Agree
- Undecided
- Disagree

04. Write 1 483 722 in words.

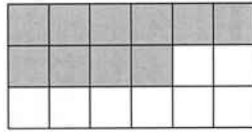
05. If 12 divides a whole number n without a remainder, list all whole numbers greater than 1 and less than 12 that must also divide n without a remainder.

06. On which number line does the letter N represent the integer -1?



ADMINISTRATOR ONLY

07. Which circle has approximately the same fraction shaded as that of the rectangle below?



-
-
-
-
-

08. Two-thirds of the people present at the beginning of a meeting are men. Nobody leaves but 10 more men and 10 more women arrive at the meeting. Which of the following statements is **TRUE**?

- There would then be more men than women at the meeting.
- There would then be the same number of men as there are women at the meeting.
- There would then be more women than men at the meeting.
- From the information given, you cannot tell whether there would then be more women or men.

09. A slug begins to climb up the side of a wall. It climbs 7cm and slips back 3cm, then climbs 5cm and slips back 2cm.

How far is the slug from the bottom of the wall?

10. How many factors does a prime number have?

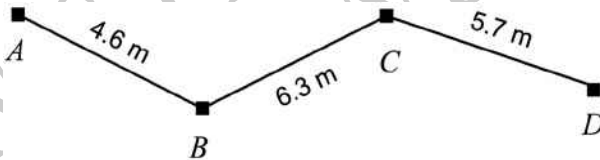
- 0
- 1
- 2
- 3

11. What is the value of the expression $3(2 - 4)^2 + 3$?

- 33
- 9
- 15
- 39

12. Carol wanted to estimate the distance from *A* to *D* along the path shown on the map below. She correctly rounded each of the given distances to the nearest kilometre and then added them.

Which of the following sums could be hers?



- $4 + 6 + 5 = 15$
- $5 + 6 + 5 = 16$
- $5 + 6 + 6 = 17$
- $5 + 7 + 6 = 18$

13. A tuckshop wanted to investigate the popularity of a new energy drink. They asked a student to conduct a survey.

Complete the values below with key words that could be used if 5 different categories are required for the questionnaire.



Awesome









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14. Estela wants to buy 2 notebooks that cost \$2.79 each.

If she has one-dollar coins and no other coins, how many one-dollar coins does she need?

- 3
- 4
- 5
- 6

15. Which is **TRUE**?

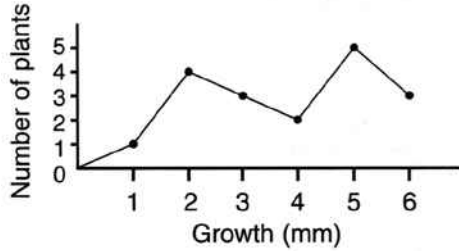
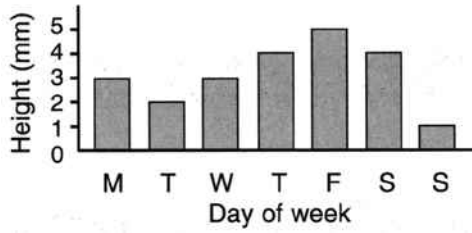
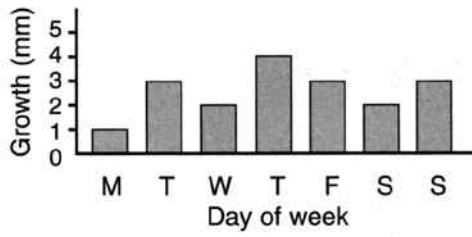
- 1.3749 < 1.0399
- 1.526 < 1.2605
- 1.7908 < 1.879
- 1.463 < 1.3902

16. An Olympic-sized swimming pool is 50m long.
In order to swim 1km, how many laps would you have to swim?



- 2 laps
- 20 laps
- 200 laps
- 2000 laps

17. Which of the following shows the amount a plant grows each day over a week?



Growth (mm)	Tally	Frequency
1	###	5
2	III	3
3	IIII	4
4	### II	7
5	II	2

18. There are 48 newborn girls in a hospital nursery. For every 3 girls there are 2 boys. How many newborn boys are in the nursery?

72

48

32

24

19. What is the prime factorisation of 45?

- $2^3 \times 5$
- $3^2 \times 5$
- $5^2 \times 3$
- $5^2 \times 9$

20. Which of the following is both a multiple of 3 and a multiple of 7?

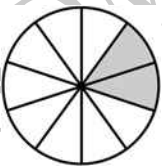
- 7007
- 8192
- 21 567
- 22 287
- 44 040

Use the following information to answer questions 21 to 23.

Complete the chart to show equivalence.

21.

Diagram



Fraction

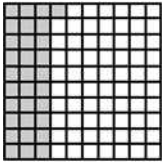
Decimal

0.2

Percentage

22.

Diagram



Fraction

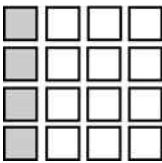
$$\frac{31}{100}$$

Decimal

Percentage

23.

Diagram



Fraction

Decimal

Percentage

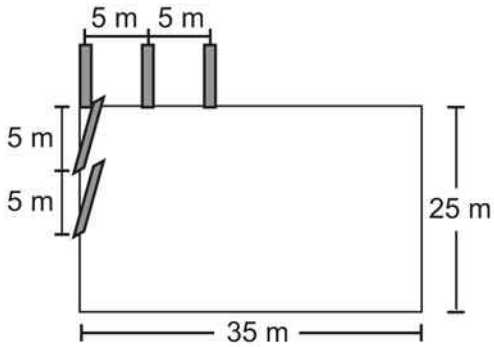
25%

End of Section

24. In which list of fractions are all of the fractions equivalent?

- $\frac{3}{4}, \frac{6}{8}, \frac{12}{14}$
- $\frac{3}{5}, \frac{5}{7}, \frac{9}{15}$
- $\frac{3}{8}, \frac{6}{16}, \frac{12}{32}$
- $\frac{5}{10}, \frac{10}{15}, \frac{1}{2}$

25. Andy is building a fence around a rectangular garden 35 m long and 25 m wide.

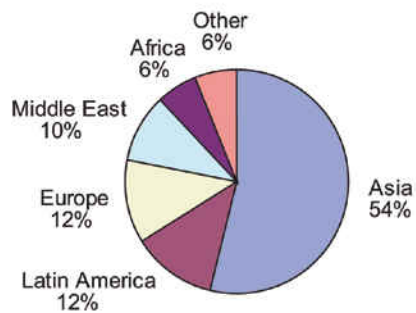


If he sets the posts 5 m apart, how many posts will be need for the fence?

- 20
- 22
- 24
- 28

26. Of the 50 000 overseas students who attended school in New Zealand in 2000, how many were from either Europe OR Asia?

Origin of Overseas Students in New Zealand Schools.



- 33 000
- 27 000
- 21 000
- 6000

27. Which of these is **closest** to $11^2 + 9^2$?

- 20 + 20
- 20 + 80
- 120 + 20
- 120 + 80

28. Ron wanted to find a rule for finding the terms in this sequence of numbers.

1, 2, 6, 24, . . .

He rewrote the first four terms this way.

1, 1×2 , $1 \times 2 \times 3$, $1 \times 2 \times 3 \times 4$

If Ron continues to write terms this way, what will be the sixth term in the sequence?

- 216
- 480
- 600
- 720

29. The percent scores for 5 tests are listed below.

45, 62, 76, 78, 99

Which statement about the data is **MOST** reasonable?

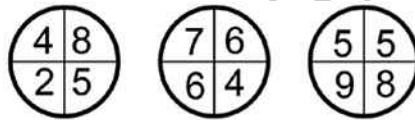
- The mean is close to 50
- The mean is close to 54
- The mean is close to 70
- The mean is close to 80

30. The table below shows the scores of 10 students on a final examination. What is the range of these scores?

Student	Score
A	88
B	65
C	91
D	36
E	72
F	57
G	50
H	85
I	62
J	48

- 33
- 40
- 55
- 88

31. The following number disks show an increasing pattern for the sums of their diagonals. Which disk should be next in the increasing pattern?



-
-
-
-

32. The temperatures for 5 days in London are in the table below.
The day with the biggest difference between the *max* and *min* temperatures is

	Mon	Tues	Wed	Thurs	Fri
Max	12°	15°	12°	13°	16°
Min	-3°	-1°	-0°	-2°	1°

- Monday
- Tuesday
- Wednesday
- Friday

33. Assuming this pattern continues, what will be the seventh term in the sequence?

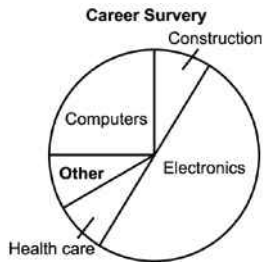
-3, 6, -12, 24, _____, _____, _____

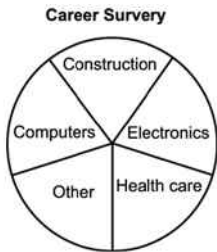
- 192
- 96
- 96
- 192

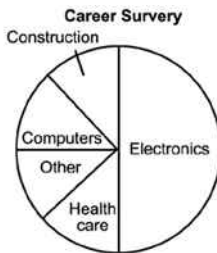
ADMINISTER ON SCREEN ONLY

34. A high school counsellor surveyed some students to find out which careers they were most interested in. The chart below shows the results of the survey. Which graph **BEST** represents these data?

Career Survey	
Field	Number of Students
Computer	150
Construction	75
Electronics	225
Health care	75
Other	75



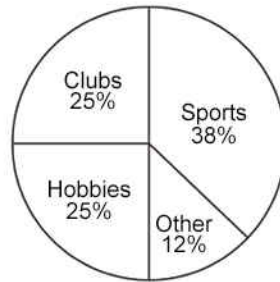






35. There are 1200 students enrolled in Arapawa Intermediate School. According to the graph below, how many of these students participate in sports?

STUDENT PARTICIPATION IN
ACTIVITIES AT ARAPAWA INTERMEDIATE SCHOOL



- 380
- 456
- 760
- 820
- 1162

36. Mark reads 14 pages per hour and Jesse reads 8 pages per half an hour. Which of the following statements compares these rates?

- Mark reads 6 pages per hour faster than Jesse.
- Mark reads 2 pages per hour faster than Jesse.
- Jesse reads 6 pages per hour faster than Mark.
- Jesse reads 2 pages per hour faster than Mark.

37. Mari's allowance increases by \$1.00 each week. She receives \$4.00 the first week. How much money will she receive the fourth week?

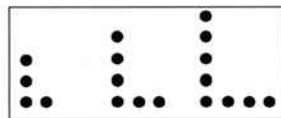
- \$6.00
- \$7.00
- \$8.00
- \$9.00

38. Which of the following sets of numbers represents an infinite set?

- {Natural numbers between 0 and 10}
- $\{\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}\}$
- {Whole numbers}
- {10, 9, 8}

39. Eleitino is playing with counters, making the letter "L" as shown in the diagram below. She records this information on a table.

Which rule describes the relationship between the height of the letter "L" and the number of counters that Eleitino uses?



Height of letter "L" (h)	3	4	5	6	7	8
Number of counters (n)	4	6	8	10	12	14

- $n = h + 1$
- $n = h + 2$
- $n = 2h - 2$
- $n = 3h + 1$

Use the following information to answer questions 40 to 41

A Web page designer charges a \$200 base fee plus \$50 per hour.

40. Write an equation to find the total cost, C , if the designer works h hours.

41. How many hours did this web page designer work if the total cost was \$1000?

End of Section

Use the following information to answer question 42..

Sales staff at a home appliance store are paid by their employer in different ways. Kiri is paid \$200 a week and \$50 for each appliance sold. Ngaire is paid \$60 for each appliance sold.

Kiri's pay can be calculated by the equation

$$y = 50x + 200 \text{ and}$$

Ngaire's pay by the equation

$$y = 60x$$

where y represents the pay and x represents the number of appliances sold.

42. Use the information below to answer the question.

If both of these equations are graphed, the point of intersection of the 2 lines shows the value where:

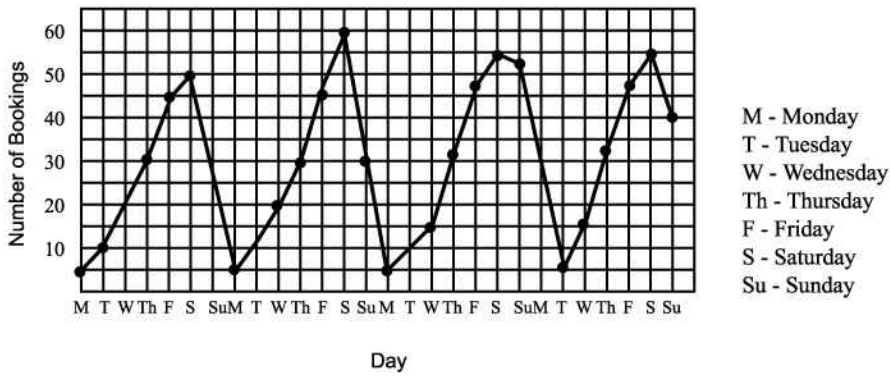
- i They have sold the same number of appliances.
- ii They have earned the same amount of money.
- iii They have finished for the day.
- iv Some of the appliances will break down and need repair.

What is the **BEST** conclusion about the point of intersection?

- ii and iii
- i and ii
- i and iii
- i and iv

End of Section

43. The graph shows the number of bookings for a restaurant each day over a four-week period.



What can you tell from the graph about seasonal variation?

44. Logan is two years older than Clinton.
Clinton is now x years old.

How old is Logan?

_____ years old.

45. The stem-and-leaf plot below shows the ages of the people who bought skateboards at a store during a sale.

Ages of People

Stem	Leaf
1	1 3 4 5 5 6 6 6 8
2	0 1 7 8
3	9
4	3 6
6	5 5
7	1

What is the median age of the people who bought skateboards during the sale?

Median age _____

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.