

Summary

Test Identification

Name	2021 MAT SW 3.4
Date Created	16 Sep 2021
Date Modified	05 Nov 2021
Subject	Mathematics
Status	ACCEPTED
Sequence Number	1164867
Total Test Time	59 minutes
Delivery Method	Onscreen

Curriculum Strand

Number Sense & Operations	13	Number Knowledge	9
Statistics	12	Algebra	12

Curriculum Level

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

Cognitive Processing

Surface	25	Deep	21
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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 : 2021 MAT SW 3.4

Q.No	Marking Key
1	c
2	158, 185, 518, 581, 815, 851 'No mark if other than these six'
3	185, 815 'Only these two for one mark'
4	185
5	700
6	a
7	c
8	b
9	c
10	d
11	b
12	Any number greater than 11
13	d
14	a
15	\$20 of free calls
16	Estimate of difference is $13,000 + \frac{1}{2}(13,000) + \frac{1}{5}(13,000) = 22,100$ 'Accept any value between 22,000 and 23,000'
17	c
18	b
19	d
20	a
21	John, Liam, Mary, Sesoh 'Must be in order stated in Answer Key.'
22	c
23	3, 2, 4, 1 'all in order for one mark'
24	b
25	c
26	c
27	d
28	c
29	b

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
30	b
31	b
32	c
33	d
34	a
35	b
36	a
37	c
38	c
39	b
40	b
41	Thursday
42	33
43	c
44	524 metres
45	b
46	Both width and height have been doubled OR 1980 can holds much more than twice the amount of the 1960 can OR Ratio of amount in 1960 can to amount in 1980 can is less than 1/2. 'Must have comment on both height and diameter/width and the effect for 1 mark'

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. I like maths at school.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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02. I am good at maths.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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03. My teacher thinks I am good at maths.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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04. My family/whānau think I am good at maths.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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05. I enjoy doing maths in my own time (not at school).

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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06. I enjoy doing things in maths that I haven't tried before.

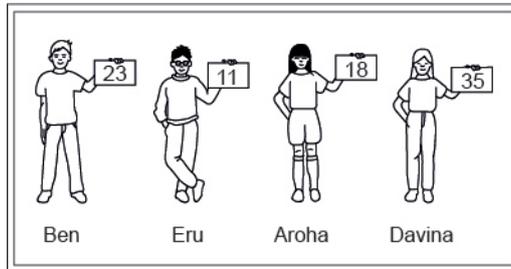
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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ADMINISTER ON SCREEN ONLY

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?

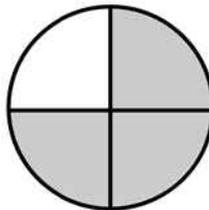


- Ben
- Eru
- Aroha
- Davina

P02. Complete this number pattern.

2, 4, _____, _____, 10

P03. What fraction of this circle is shaded?

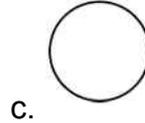
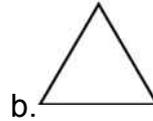




P04. Match the sentence with the correct shape.

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.

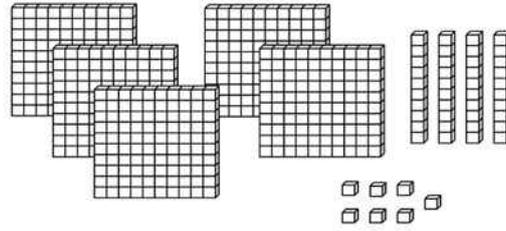
TRUE

FALSE

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

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01. Look at the model of a whole number below.
Each cube in the model has a value of 1.
Which number does the model represent?



Each  in the model has a value of 1.

- 447
- 475
- 547
- 557

Use the following information to answer questions 02 to 04.

Nadine was playing a 'Guess My Number' game with her mother.
The first clue she told her mother was, "I am thinking of a three-digit whole number that has the digits 1, 5, and 8."

02. List all of the numbers that Nadine could be thinking of.

03. Nadine's next clue was this: "My number is also a multiple of 5."

List all of the numbers that Nadine could be thinking of now.

04. Finally Nadine told her mother the last clue: "When my number is rounded to the nearest hundred, it is 200."

What is Nadine's number?

End of Section

05. Write the total value of the 7 in this number.

6 7 3 4 _____

06. Which of the following statements is **TRUE**?

$2 > -2$

$2 < -4$

$-2 < -4$

$-4 > 4$

Use the following information to answer question 07.

A group is planning to go to an amusement park.

There will be 237 people going on the trip.

Only 46 people can ride the rollercoaster at one time.

No one will be allowed a second ride until everyone has had a turn.

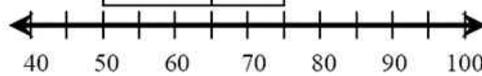
07.

What is the **least** number of rollercoaster rides needed for everyone to have a turn?

- 10
- 8
- 6
- 3

End of Section

08. Which number is **closest** to the median of the data set represented by the box-and-whisker plot below?



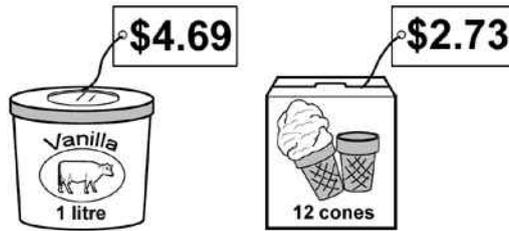
- 75
- 65
- 60
- 50

09. John had to multiply 79 by 6.

Which one of these would be **closest** to his answer?

- 420
- 460
- 480
- 500

10. What would be the cost of 2 litres of ice cream and two boxes of ice cream cones?



- \$12.64
- \$12.84
- \$14.64
- \$14.84

11. $82 \times 69 =$

- 5558
- 5658
- 6238
- 12 030

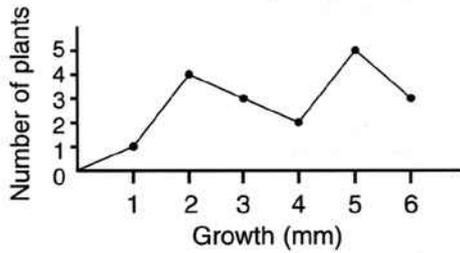
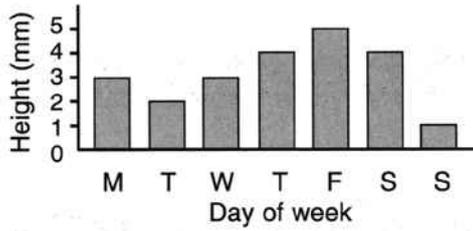
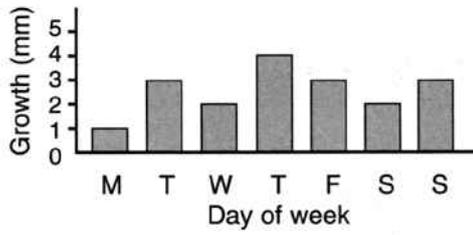
12. Fill in the box to make this number sentence **TRUE**.

- 5 > 6

13. If you change the digit 6 to a 9 in the number 56 870, what will be the difference?

- Three hundred
- Nine hundred
- Nine thousand
- Three thousand

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

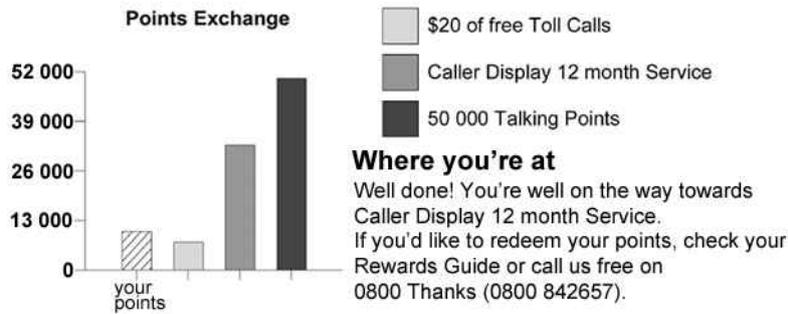


Growth (mm)	Tally	Frequency
1	###	5
2	III	3
3	IIII	4
4	### II	7
5	II	2

Use the following information to answer questions 15 to 16.

Here is a graph of Mrs Grant's reward points from her telephone company.

She can exchange her points for rewards as shown below.



15. What reward could Mrs Grant exchange her points for now?

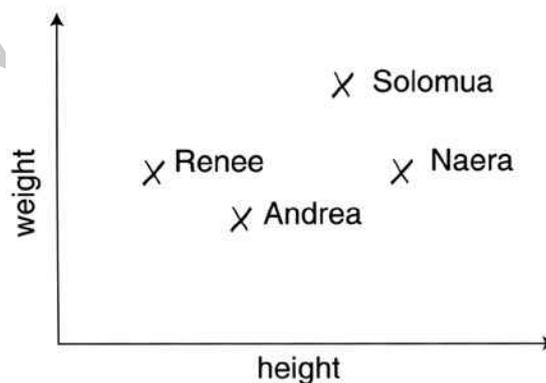
16. The bill says she is "well on her way" to a Caller Display 12 month Service.

How many more points does she need for this?

End of Section

17. Davida measured the height and weight of four girls in the soccer team. She graphed the results.

Who was the shortest?



- Andrea
- Naera
- Renee
- Solomua

18. Which of these could be solved by using the open sentence $A - 5 = ?$

- Janis is 5 years older than Seth. If A is Seth's age in years, how old is Janis?
- Todd is 5 years younger than Amelia. If A is Amelia's age in years, how old is Todd?
- Isaac is 5 times as old as Bert. If A is Bert's age in years, how old is Isaac?
- Nathan is one-fifth as old as Leslie. If A is Nathan's age, how old is Leslie?

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20. $9000 - 3782 =$

- 5218
- 5328
- 6782
- 12,782

21. Use the information below to answer the question.

At a sports day four children competed in the long jump. These were the results.

John	2.36 m
Sesoh	2.5 m
Mary	2.48 m
Liam	2.41 m

List the children from shortest to longest jump.

Shortest

Longest

22. This is a stem-and-leaf plot of a group of test scores.
What is the median score?

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

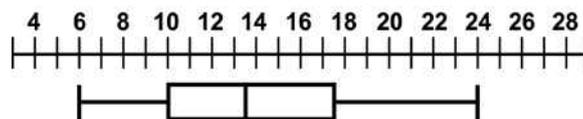
- 73
- 76
- 77
- 77.5

23. Put the numbers 1, 2, 3, and 4 in the boxes to order these numbers from smallest (1) to largest (4).

- 2.107
- 2.077
- 2.7
- 2.017

24. Scott made a box-and-whisker graph of the soccer goals made by the players in his district.

What is the range of the goals made by the players?



- 24
- 18
- 6
- 4

25. If 50% of a number is 20, what is 75% of the number?

- 8
- 15
- 30
- 45

26. A flight engineer for an airline flies an average of 2 923 kilometres per week. Which is the **BEST** estimate of the number of kilometres she flies in 3 years?

- 150 000
- 300 000
- 450 000
- 600 000

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27. The list shows the number of cans each student in Angelo' s class collected for recycling.

Which stem-and-leaf plot below shows this same information?

30	21	12	17	25	18
35	30	26	31	14	29
27	42	35	20	17	34
20	31	21	35	44	17



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



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



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

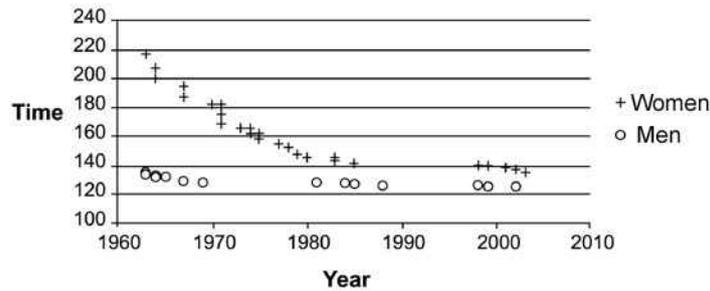


Stem	Leaf
1	2, 4, 7, 7, 7, 8
2	0, 0, 1, 1, 5, 6, 7, 9
3	0, 0, 1, 1, 4, 5, 5, 5
4	2, 4

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28. The world record time (in minutes) in the marathon is plotted against the year in which the record was set for men and women separately.

Which of the following statements would be a valid conclusion from this graph?



- By the year 2010, the world record time for men will reach a plateau beyond which no improvement will be possible.
- We can expect the world record time for women to be lower than that for men sometime before the year 2010.
- The world record times for women show a greater rate of improvement (decreased more rapidly) than the world record times for men.
- The world record time for men has decreased more in the last twenty years than the world record time for women.

29. The table shows p , the charge in cents, for a long-distance phone call that lasts t minutes.

What describes this relationship?

t	p
1	20
2	28
3	36
4	44

- $p = 20t + 12$
- $p = 8t + 12$
- $p = 11t$
- $p = 20t$

30. Which value is missing in the table?

n	0	4	6
$2(n+3)$	6	14	?

- 15
- 18
- 21
- 36

31. Which of the following ratios is equivalent to the ratio of 6 to 4?

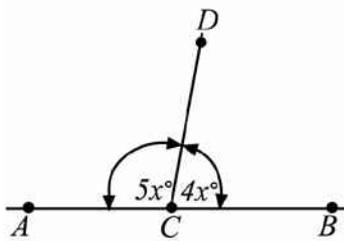
- 12 to 18
- 12 to 8
- 8 to 6
- 4 to 6
- 2 to 3

32. Marti wants to buy a dress priced at \$89.75.

If the tax is 8%, what is the total amount she must pay for the dress?

- \$71.80
- \$82.57
- \$96.93
- \$97.75

33. In this figure AB is a straight line.
What is the measure, in degrees, of angle BCD ?



- 20
- 40
- 50
- 80
- 100

34. What is the value of $n^2(m + s)$ if $m = 3$, $n = 2$, and $s = 4$?

- 28
- 16
- 14
- 9

35. What is 4 hundredths written in decimal notation?

- 0.004
- 0.04
- 0.400
- 4.00
- 400.0

39. A family of five went out to dinner. Their bill was \$70.00. They left a 15% tip on the total cost of their bill.

Which amount is **closest** to the total cost of the dinner, including tip?

- \$90.00
- \$80.00
- \$75.00
- \$11.00

40. The solution of the equation $3(4x - 3) = 15$ is

- 5
- 2
- 2
- 4

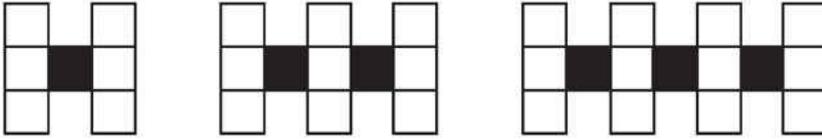
41. This chart shows temperature readings made at different times on four days.

Temperatures

	6 a.m.	9 a.m.	Noon	3 p.m.	8 p.m.
Monday	15°	17°	20°	21°	19°
Tuesday	15°	15°	15°	10°	9°
Wednesday	8°	10°	14°	13°	15°
Thursday	8°	11°	14°	17°	20°

Which day recorded the greatest change in temperatures?

42. Rebecca is making a pattern using white tiles and black tiles. The first three designs in Rebecca's pattern are shown below. The tenth design in Rebecca's pattern uses ten black tiles.



How many white tiles will Rebecca need for the tenth design?

43. Keith uses this formula to calculate the monthly profit of his bicycle store.

$$P = 400n - 7200$$

In the formula, P is the monthly profit and n is the number of bicycles sold in a month.

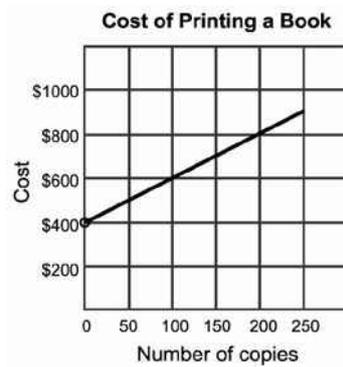
How many bicycles must he sell to make a profit of exactly \$2000 in a month?

- 13 bicycles
- 17 bicycles
- 23 bicycles
- 25 bicycles

44. 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.

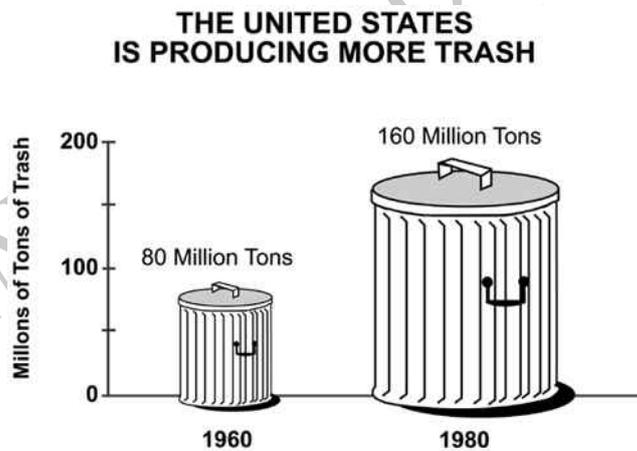
How many metres higher is the top of Mt Jacques Cartier than the lowest point of the St Lawrence River?

45. The cost of printing different numbers of copies of a book is shown on the graph below. Which equation represents the cost, C , of printing n copies of the book?



- $C = 400 + n$
- $C = 400 + 2n$
- $C = 400 + 50n$
- $C = 400 + 250n$

46. The pictograph shown below is misleading. Explain why.



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

Large Tablets (9" +)

- iPads: iOS 10+ 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

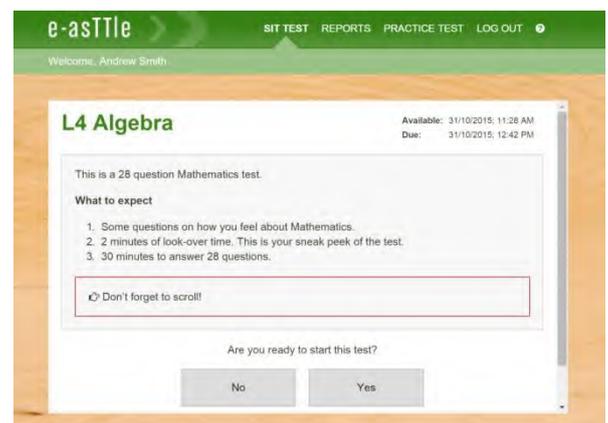
1. Check equipment

- 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.  **INFO MISSING**
[Click to reload](#)

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.