



BROAD HORIZON
— TUITION CENTRE —

11+ Tuition – Year 5

Week 21

ANSWERS

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Starter Task

1. Calculate the following percentages of numbers.

a. 40% of 750 =

300

b. 35% of 200

70

c. 20% of 550

110

d. 65% of 300

195

2. Convert the following percentages into fractions (**Simplify**)

a. 75%

3/4

b. 54%

13/25

c. 62%

31/50

d. 44%

11/25

3. Convert the following fractions into percentages.

a. $\frac{24}{40}$

60%

b. $\frac{35}{50}$

70%

c. $\frac{12}{20}$

60%

4. Divide £300 in the ratio of 2:1:3

£100:£50:£150

(1 mark)

5. Divide 480 sweets in the ratio of 3:4:1

180:240:60

(1 mark)

6. One square has a length of 4cm.

- a. Calculate the perimeter of the whole shape =

24cm

- b. Calculate the area of the whole shape =

32cm²



Starter task – Vocabulary Homework Test

Exercise C

1. Belligerent
2. Aura
3. Drought
4. Tact
5. Derision
6. Exhaust
7. Texture
8. Assassin
9. Incandescent
10. Generalisation

Comprehension Practice

Test 7 - The Secret Garden, pages 49-56

Question	Answer	Explanation
1	E	Refer to line 1: 'The sun shone down for nearly a week on the secret garden.'
2	C	Refer to lines 1-4: 'The Secret Garden was what Mary called it when she was thinking of it. She liked the name, and she liked still more the feeling that when its beautiful old walls shut her in no one knew where she was.'
3	D	Refer to lines 8-10: '...every day which passed at Misselthwaite. She was beginning to like to be out of doors; she no longer hated the wind...'
4	C	Refer to line 10-11: '[Mary] could run faster, and longer, and she could skip up to a hundred.'
5	B	Knowledge of literary techniques required. Personification is attributing human characteristics to non-human things. We see this in the description, '...they barely peeped above the earth' (line 23).
6	D	'Mary' and 'person' are nouns. 'Was' is a verb. 'An' is a determiner. 'Odd', 'determined' and 'little' are adjectives. Therefore, four word classes are used in this sentence.
7	A	Reader's logical inference required. Refer to lines 20-25: '[Mary] found many more of the sprouting pale green points than she had ever hoped to find... There were so many that she remembered what Martha had said about...bulbs spreading and making new ones.'
8	B	Reader's personal judgement required. Refer to lines 32-36: '...she was afraid that he would pick up his tools and go away if he saw her coming, so she always walked toward him as silently as possible. But, in fact, he did not object to her as strongly as he had at first. Perhaps he was secretly rather flattered by her evident desire for his elderly company. Then, also, she was more civil than she had been.' This suggests that they have recently grown closer.
9	A	Reader's logical inference required. Ben clearly works in the garden and is referred to as 'pick[ing] up his tools' (line 32) and as 'rest[ing] one hobnailed boot on the top of his spade' (lines 47-48), which suggests he is a gardener.
10	E	Refer to lines 39-41: 'Tha'rt like th' robin... I never knows when I shall see thee or which side tha'll come from.'
11	A	Reader's personal judgement required. Refer to lines 60-61: '...he flirted his wings and tail and tilted his head and hopped about with all sorts of lively graces.' This suggests that he is plucky because he is venturing near Ben and cheeky because he is hopping about.
12	B	Refer to lines 65-67: 'I know what tha's up to. Tha's courtin' some bold young madam somewhere, tellin' thy lies to her about bein' th' finest cock robin on Missel Moor an' ready to fight all th' rest of 'em.'
13	D	Refer to lines 70-71: 'He flew on to the nearest currant bush and tilted his head and sang a little song right at him.'
14	E	Reader's logical inference required. Refer to lines 77-78: 'He stood still as if he were afraid to breathe...' This suggests he is feeling awe.
15	D	Ben is referred to as a 'Yorkshire man' (line 38), and the way in which his speech is written is suggestive of a Yorkshire accent.

Verbal Reasoning

Verbal Reasoning Tests

Paper 4

- 1 wise
- 2 cancel
- 3 hostile
- 4 gentle
- 5 flawed
- 6 solution
- 7 record
- 8 matter
- 9 grate
- 10 snappy
- 11 HEM
- 12 RED
- 13 ARE
- 14 BIT
- 15 RAT
- 16 sh
- 17 me
- 18 de
- 19 ee
- 20 in
- 21 respond
- 22 ordinary
- 23 difficulty
- 24 discover
- 25 divide
- 26 FORE
- 27 CHILD
- 28 HEAD
- 29 FREE
- 30 NEWS
- 31 children, who, computer
- 32 by, match, week
- 33 sight, right, eye
- 34 town, friends, school
- 35 use, calculator, sums
- 36 immature
- 37 worthy
- 38 see
- 39 changeable
- 40 leisurely
- 41 PEACH
- 42 STREAM
- 43 STRAIN
- 44 RIVAL
- 45 TOAST
- 46 evergreen
- 47 tailor
- 48 halfway
- 49 payslip
- 50 notable
- 51 kidney
- 52 kinetic
- 53 e
- 54 i
- 55 kettle, kidney, kindle, kinetic, knuckle

56–57

U		E		P	
N	U	M	B	E	R
U		B		O	
S	L	E	E	P	Y
E		R		L	
D	I	S	P	E	L

58–59

	L		B		A
R	E	W	I	N	D
	A		K		H
B	R	A	I	S	E
	N		N		R
A	S	P	I	R	E

- 60 21, 25
- 61 47, 50
- 62 18, 12
- 63 81, 49
- 64 16, 32
- 65 WXUS
- 66 PSUCX
- 67 WUGX
- 68 FEAR
- 69 TAME
- 70 RAFT
- 71 E
- 72 D
- 73 B
- 74 C
- 75 A
- 76 our
- 77 hare
- 78 tale
- 79 toil
- 80 peel
- 81 2633
- 82 2534
- 83 3641
- 84 3527
- 85 4653
- 86 1634
- 87 Children find certain sums hard.
- 88 The bus will have arrived by 11:40 a.m.
- 89 Sarah can now learn to drive.
- 90 Sprouts are green vegetables.
- 91 B
- 92 E
- 93 C
- 94 D
- 95 QH
- 96 IN
- 97 HR
- 98 AB or GD
- 99 LD
- 100 YA

Paper 5

- 1 defend, shield
- 2 remote, distant
- 3 hint, trace

- 4 stationary, immobile
- 5 fine, thin
- 6 dislike, prefer
- 7 splendid, drab
- 8 interest, boredom
- 9 provide, remove
- 10 primitive, developed
- 11 ART
- 12 HER
- 13 RAG
- 14 WHO
- 15 USE
- 16 WINK
- 17 DAZE
- 18 SAID
- 19 DOVE
- 20 TOAD
- 21 marked, answer, tick
- 22 trained, sit, quietly
- 23 left, sweater, library
- 24 plastic, in, heat
- 25 get, coat, winter
- 26 echo
- 27 than
- 28 dove
- 29 idea
- 30 rind
- 31 SITE
- 32 NONE
- 33 RAFT
- 34 PEAR
- 35 FAWN
- 36 RARE
- 37 d
- 38 e
- 39 l
- 40 p
- 41 r
- 42 cape, reel
- 43 nice, shift
- 44 tag, teen
- 45 rat, frail
- 46 side, play
- 47 pork
- 48 went
- 49 road
- 50 indispensable
- 51 straight
- 52 palm
- 53 solemn
- 54 dispute
- 55 sunset
- 56 welcome
- 57 cheap, loved
- 58 type, lower
- 59 question, number
- 60 wind, damage
- 61 poem, sketch

- 62 polish, you
- 63 just, out
- 64 now, far
- 65 add, remove
- 66 one, two
- 67 restore
- 68 sandpit
- 69 barrow
- 70 written
- 71 reddish
- 72 r
- 73 s
- 74 p
- 75 h
- 76 b

77–78

M	O	R	S	E	L
A		I		N	
R	A	V	A	G	E
G		A		I	
I	S	L	A	N	D
N		S		E	

79–80

	P		T		S
M	A	R	R	O	W
	N		A		E
A	D	V	I	S	E
	E		N		T
W	R	I	S	T	S

- 81 RV, US
- 82 NR, SW
- 83 CYRX
- 84 UE, KO
- 85 QR, TU
- 86 +×!£
- 87 =£O!
- 88 !@£=
- 89 =@O£
- 90 NUT
- 91 COME
- 92 DUNE
- 93 NOTE
- 94 12
- 95 8
- 96 9
- 97 13
- 98 21
- 99 7
- 100 13

Mixed Verbal Reasoning Types

Test 20

Test 20 — pages 72-74

1. **native** — 'its **native** animals'
2. **adapted** — '**adapted** to the cold'
3. **possess** — 'The birds **possess**'
4. **dense** — 'a **dense** coat of oily, overlapping feathers'
5. **effective** — '**providing effective** insulation'
6. **layer** — 'a **thick layer** of fat'
7. **practice** — 'an important **practice**'
8. **cluster** — 'groups of penguins **cluster** together'
9. **shield** — 'to **shield** each other'
10. **constantly** — 'The huddle is **constantly** moving'
11. **alternate** — 'penguins **alternate** between'
12. **outer** — 'on the **outer edge**'
13. **kettle**
The words can be rearranged into the sentence 'I have my coffee with milk and two sugars.'
14. **lakes**
The words can be rearranged into the sentence 'The pool was much too cold to swim in.'
15. **too**
The words can be rearranged into the sentence 'She couldn't get to work because her car broke down.'
16. **collars**
The words can be rearranged into the sentence 'His dog nearly escaped from the park yesterday afternoon.'
17. **accident**
The words can be rearranged into the sentence 'Two ambulances and a police car went speeding past.'
18. **precise**
Both words mean 'exact'.
19. **dutiful**
Both words mean 'compliant'.
20. **aspiration**
Both words mean 'desire for success'.
21. **expertise**
Both words mean 'proficiency'.
22. **profit**
Both words mean 'benefit'.
23. **aloof**
'friendly' means 'approachable', whereas 'aloof' means 'distant'.
24. **decisive**
'hesitant' means 'uncertain', whereas 'decisive' means 'resolute'.
25. **discourteous**
'polite' means 'well-mannered', whereas 'discourteous' means 'rude'.
26. **diverse**
'similar' means 'alike', whereas 'diverse' means 'different'.

Test 21 — pages 76-79

1. **A**
Lines 8-9 state 'Consent came in the form of the Franco-British Channel Tunnel Treaty'. 'Consent' refers to the approval granted for 'a cross-Channel connection', which is another way of saying 'a tunnel between France and England'.
2. **D**
Lines 12-13 state that 'since the British had made greater progress, their meeting was not equidistant from Folkestone and Coquelles.' 'not equidistant from' means 'not an equal distance from'. Since the British tunnelled more quickly than the French, the breakthrough took place closer to Calais than Kent.
3. **C**
Line 11 states that construction began in 1988. Line 17 states 'After six years of excavation work, the tunnel was declared officially open'. Therefore, the Channel Tunnel was officially opened in 1994.
4. **B**
Lines 17-18 state that 'the tunnel was declared officially open by Queen Elizabeth II'. 'Sovereign' is another word for 'monarch', and Queen Elizabeth II is a British monarch.
5. **D**
Lines 25-26 state that 'five fires have occurred inside the tunnel leading on occasion to closures'. Therefore, it must be false that since it opened, the tunnel has never had to close.
6. **B**
Lines 14-15 state that Fagg and Cozette were 'Brandishing blue, red and white flags', but the passage does not mention which countries these flags represented.
7. **B**
Line 21 states, 'up to 400 trains make the trip every 24 hours'. Therefore, it must be true that Channel Tunnel trains run seven days a week.
8. **vigilance**
Both words mean 'care'.
9. **misconduct**
Both words mean 'unacceptable behaviour'.
10. **indistinct**
Both words mean 'not clear'.
11. **annoy**
Both words mean 'to make someone angry'.
12. **volatile**
Both words mean 'unpredictable'.
13. **goodwill**
Both words mean 'generosity'.
14. **learn**
The other three are words to describe how someone might share their knowledge.
15. **file**
The other three describe how food is prepared.
16. **protest**
The other three mean 'to annoy'.
17. **realist**
The other three describe people who are likely to doubt something.
18. **cleanse**
The other three mean 'to get wet', without any reference to cleaning.
19. **torment**
The other three mean 'to tell off'.
20. **exercise**
The other three mean 'talent'.

Test 22 — pages 80-83

1. B

Lines 3-4 state "Something that for lack of any other name might be called friendship existed and always had existed between Marilla Cuthbert and Mrs Rachel", which shows that their relationship is only described as a friendship because there isn't another suitable word.

2. C

Marilla's "narrow experience" suggests she is naive. Her "rigid conscience" suggests she is virtuous.

3. A

Lines 9-10 state "there was a saving something about her mouth". "saving something" is another way of saying "a redeeming feature".

4. B

Lines 15-17 state that Marilla knew that Matthew's departure "would be too much for her neighbour's curiosity." "Inquisitiveness" is another word for 'curiosity'.

5. C

Lines 15-17 state "she had known that the sight of Matthew jaunting off so unaccountably would be too much for her neighbour's curiosity". Therefore, Rachel visits Marilla to satisfy her curiosity about Matthew's departure.

6. D

Lines 19-20 state "We're getting a little boy from an orphan asylum in Nova Scotia and he's coming on the train tonight".

7. A

Line 22 states that Rachel is "astonished", which shows that the news has come as a surprise. Because it's a surprise, we can infer that Marilla has never discussed adopting a child with her before.

8. at

The words can be rearranged into the sentence 'The children were convinced that the snowman had winked.'

9. said

The words can be rearranged into the sentence 'December was a successful month for toy manufacturers.'

10. across

The words can be rearranged into the sentence 'Summer holidays are best spent relaxing by the beach.'

11. it

The words can be rearranged into the sentence 'Bolts of lightning illuminated the whole of the night sky.'

12. lips

The words can be rearranged into the sentence 'Lisa makes a slurping sound when she sips her tea.'

13. are

The words can be rearranged into the sentence 'Cycling, swimming and running usually make up a triathlon.'

14. is

The words can be rearranged into the sentence 'James looked up and decided the hill was too high.'

15. vault

'Vault' can mean 'to jump over something' or 'a room used for storage'.

16. project

'Project' can mean 'a plan of action' or 'to stick out'.

17. brand

'Brand' can mean 'a variety of something' or 'to stamp with a branding iron'.

18. start

'Start' can mean 'to embark on something' or 'to move suddenly'.

19. sanction

'Sanction' can mean 'authorization' or 'punishment'.

20. peer

'Peer' can mean 'a person of the same age, status or ability as another person' or 'to look closely at something'.

Maths Practice Questions

Test 10

Question	Answer		Explanation
1a	E	8	1 person only owned a bicycle and a van, while 7 more owned a bicycle and a van, as well as a car. Therefore, $1 + 7 = 8$ owned a bicycle and a van.
1b	E	7	7 people owned a bicycle, a van and a car.
1c	C	10%	7 people out of the 70 only owned a car, which as a percentage is $7/70 \times 100 = 10\%$.
1d	C	32/35	$7 + 7 + 15 + 35 = 64$ people own a car. This is $64/70 = 32/35$ as a fraction of all people surveyed.
1e	B	12	2 bicycles have $2 \times 2 = 4$ tyres. A van and a car have 4 tyres each. Therefore, the 4 vehicles have $4 + 4 + 4 = 12$ tyres.
2a	D	41 mins	The weekday bus leaves Westover at 08:31 and arrives at Bearwood at 09:12. Therefore, its journey time is 41 minutes.
2b	A	35 mins	The weekend bus leaves Westover at 08:31 and arrives at Bearwood at 09:06. Therefore, its journey time is 35 minutes.
2c	C	West Moors	30 minutes after the weekday bus leaves Westover it is 09:01. This means the next bus stop is West Moors at 09:04.
2d	E	Kinson	30 minutes after the weekend bus leaves Westover it is 09:01. This means the next bus stop is Kinson at 09:03.
2e	C	2 : 11	Since there are 55 adults and 10 children, the ratio of children to adults is $10 : 55 = 2 : 11$.
3a	C	13/8	$3/4 + 1 - 1/8 = 1\% = ((1 \times 8) + 5)/8 = (8 + 5)/8 = 13/8$
3b	E	1%	$13/8 = 1\%$ as a mixed number.
3c	D	39	$13/8 \times 24 = 13 \times 3 = 39$
3d	D	45°	Angle P = $360^\circ/8 = 45^\circ$
3e	B	10m	The radius is 5000mm. The diameter is $2 \times 5000 = 10000\text{mm} = 1000\text{cm} = 10\text{m}$.

Question	Answer		Explanation
4a	C	2.2kg	The scales show 2.2kg.
4b	A	1.6kg	$3.8\text{kg} - 2.2\text{kg} = 1.6\text{kg}$
4c	E	2.2kg	The range is the highest value minus the lowest value = $3.7\text{kg} - 1.5\text{kg} = 2.2\text{kg}$.
4d	A	11.0kg	$5 \times 2.2\text{kg} = 11.0\text{kg}$
4e	B	2550g	To calculate the median weight we need to reorder the six weights in ascending numerical order: 1.5, 2.2, 2.3, 2.8, 3.3, 3.7. The median is the middle term, which is halfway between the 3rd term of 2.3 and the 4th term of 2.8 = $2.55\text{kg} = 2550\text{g}$.
5a	B	64m^3	A cube has equal dimensions of length, width and height. If the length is a whole number then so are the width and height. Therefore, the volume must be a cube number. The only cube number of the five is $64 = 4 \times 4 \times 4$.
5b	A	16m^2	The area of a face of cube C is $4 \times 4 = 16\text{m}^2$.
5c	D	16	The sequence is made up of descending square numbers. The next term is $4^2 = 16$.
5d	A	XXV	25 in Roman numerals is XXV.
5e	C	80	81 rounded to the nearest 10 is 80.
6a	B	106	Working forwards from the input: $10/2 = 5$, $5 + 101 = 106$, which is the output.
6b	A	48	Working backwards from the output: $6 \times 5 = 30$, $30 + 18 = 48$, which is the input.
6c	C	3	Writing number machine 3 as an equation gives $(100 - 60) \times ? = 120$. Therefore, $40 \times ? = 120$ and dividing both sides by 40 gives $? = 120/40 = 3$.
6d	D	1	$120/100 = 1.2$. The quotient here is 1.
6e	E	20	$80\% \text{ of } 25 = 80/100 \times 25 = 20$

Non-Verbal Reasoning

Test 1

Practice Questions

1 E

2 B

Test

1 C

2 D

3 A

4 C

5 D

6 E

7 B

8 D

9 D

10 B

11 E

12 C

Quick Revision

Workout the volume of the shapes with the following dimensions

	Length	Width	Height	Volume
1)	4cm	8cm	3.5cm	112cm ³
2)	11mm	5mm	2mm	110mm ³

(2 marks)

Workout the following:

		Mode	Range	Mean	Median
3)	3, 4, 8, 1	None	7	4	3.5
4)	14, 11, 11	11	3	12	11
5)	4, 3, 5, 9, 3	3	6	24	4

(12 marks)

6) Round 2.9952 to two decimal places **3.00**

7) Round 325,251 to the nearest hundred **325,300**

8) Add 117 minutes to 11:15am **1:12 pm**

9) Add 84 minutes to 5:22pm **6:46 pm**

(4 marks)

Homework – Vocabulary to memorise

Vocabulary 1

Exercise A

1. portray
2. curdle
3. affix
4. nuptial
5. secluded
6. spurious
7. feline
8. depression
9. disgruntled
10. infuriate

Exercise B

1. curdle
2. secluded
3. nuptial
4. portray
5. feline
6. depression
7. affix
8. infuriate
9. spurious
10. disgruntled

Anagrams

Test 21

1. j The juror listened intently to the judge.
2. t The meeting got rather tense yesterday.
3. l He has excellent social skills.
4. s I have a strong desire to succeed.
5. m They went out for a romantic meal.
6. b I can't believe that you betrayed me.
7. u I think peanut butter is delicious on toast.
8. c The crime scene was taped off.
9. s My uncle writes short stories.
10. i There is a spider in my office.

Related Words

Test 21

1 fleet

Solution: The words in the top row of the grid are all collective nouns relating to the modes of transport directly below (e.g. a 'fleet' of 'ships').

2 hostile

Solution: The words in the top row of the grid are all antonyms of the words directly below (e.g. 'hostile' and 'friendly' are antonyms).

3 moon

Solution: The words in the top row of the grid can be joined to the words directly to form new words (e.g. 'honey' + 'moon' = 'honeymoon').

4 advice

Solution: The words in the top row of the grid are all verbs. The word directly below each verb is the related noun (e.g. verb = 'advise' and noun = 'advice').

5 correct

Solution: The words in the top row of the grid are homophones. Each word in the bottom row is a synonym of the word directly above (e.g. 'right' and 'correct' are synonyms).

6 branch

Solution: In each row of the grid, the last four letters of the first word begin the second word, and the last four letters of the second word begin the third word.

7 over

Solution: The words in the top row of the grid can be joined to the words directly below to form new words (e.g. 'over' + 'all' = 'overall').

8 understanding

Solution: The words in the top row of the grid are all synonyms of each other ('insight', 'perception' and 'understanding') as are the three words in the bottom row.

9 well

Solution: Each word in the bottom row of the grid is the adverb that corresponds to the adjective directly above (e.g. 'good' is the adjective and 'well' is the adverb).

10 tested

Solution: The three prefixes in the top row of the grid can all be used with each of the words in the bottom row to form new words ('unposed', 'reposed', 'deposed', 'untested', 'retested' and 'detested', 'unserved', 'reserved' and 'deserved').

Rhyming Synonyms

Test 21

1. **A** **vulnerable**
 perceptible → susceptible → vulnerable
2. **A** **insipid**
 strand → bland → insipid
3. **A** **sloppy**
 backlash → slapdash → sloppy
4. **A** **obvious**
 patent → blatant → obvious
5. **A** **forbidden**
 exhibited → prohibited → forbidden
6. **D** **insinuate**
 supply → imply → insinuate
7. **D** **impediment**
 advantage → disadvantage → impediment
8. **B** **blemished**
 clawed → flawed → blemished
9. **B** **allay**
 balm → calm → allay
10. **E** **affable**
 pheasant → pleasant → affable