Introduction

Purpose of the Busy Ant Maths Year 2 Test Pack

1. To assist teachers in assessing the overall level of mastery achieved by pupils in the mathematics programme of study for Year 2, and in determining pupils' readiness to deal with the expectations of the Year 3 programme of study.
2. To provide parents, teachers and school leaders with information on how pupils are performing in comparison with national standards, by assigning one of the following:
   - working below national standard
   - working towards national standard
   - working at national standard
   - working at greater depth within the national standard.
3. To enable teachers and school leaders to monitor the performance of pupil cohorts, to identify where interventions may be required and to ensure that pupils are supported to achieve sufficient progress and expected attainment.

The Busy Ant Maths Test Packs are intended to be used as summative assessments towards the end of the academic year. They are not designed to assess pupils' level of mastery in each of the individual National Curriculum attainment targets and domains. For guidance on making formative assessments regarding pupils' strengths and weaknesses and level of mastery in specific attainment targets and domains, teachers should refer to the Assessment Tasks and Assessment Exercises in the Busy Ant Maths Assessment Guides.

Structure of the Busy Ant Maths Year 2 Test Pack

Paper	Paper 1: arithmetic	Paper 2: reasoning
Total marks	25 marks	35 marks
Recommended timing	20 minutes	35 minutes
National Curriculum domain coverage	Number – Number and place value Number – Addition and subtraction Number – Multiplication and division Number – Fractions	
		Measurement Geometry – Properties of shapes Geometry – Position and direction Statistics

The papers should be administered in order.

Pupils can have a break between the papers.

Administering Paper 1: arithmetic

Recommended timing

Pupils have 20 minutes to complete the paper.

Resources

Pupils will need the following resources:

- a sharp, dark pencil
- a rubber (optional). If rubbers are not provided, tell pupils that they may cross out any answer they wish to change.

Pupils may also use the following resources, if this is normal classroom practice, provided they only give word-for-word translations:

- bilingual dictionaries or electronic translators
- bilingual word lists
- monolingual English electronic spell checkers.

Pupils are not allowed:

- calculators
- rulers
- number apparatus, e.g. ten base materials, number square, number lines, etc.

Assistance

Teachers should ensure that nothing they do or say during the test could be interpreted as giving pupils an advantage.

If a pupil requests it, teachers may read a question out loud on a one-to-one basis.

If reading to a pupil, teachers should read words and numbers but not mathematical symbols. This is to ensure that pupils are not given an unfair advantage by having the operation/function inadvertently explained by reading its name.

Before the test begins

- Review the list of pupils with any particular individual needs and ensure that their requirements are met.
- Ensure that pupils are able to work undisturbed and that the classroom layout and seating arrangements are suitable.
- Ensure that any wall displays do not give pupils an unfair advantage.
- Provide each pupil with the resources they require.

What to say at the start of the test

- *This is the arithmetic paper.*
- *You will need a sharp, dark pencil. You may use a rubber for this test.* (If rubbers are not provided, tell the pupils that they may cross out any answer they wish to change.)
- *You must not use a calculator.*
- *Write your name and class name/number on the front of your test paper.*

Practice question

- *Look at page 1.*
- *This is a practice question for us to do together.*
- *The practice question says: 7 – 4 =*
- *Write your answer in the box.*

Give pupils the opportunity to answer the question in their booklet. If any pupil is not sure what to do, explain what they need to do to answer the question. Allow pupils to change their answers to the correct one by crossing out or rubbing out, to make sure they know the way to correct errors.

- *You have 20 minutes for this paper.*
- *Work as quickly and as carefully as you can.*
- *If you cannot do one of the questions, go on to the next one. You can come back to it later if you have time.*
- *If you finish before the end, go back and check your work.*
- *Put your answer in the box for each question.*
- *If you want to change your answer, put a line through the answer you don't want, or use a rubber.*
- *Remember to check your work carefully.*
- *If you have any questions during the test, put up your hand and wait for someone to come to you. Remember, I can't help you answer any of the test questions.*
- *You must work on your own and you may not talk to each other.*
- *Are there any questions you want to ask me now?*
- *I will tell you when you have 5 minutes left.*
- *I will tell you when the test is over and to stop writing.*
- *You may now start the test.* (Write the start and finish times of the test on the board.)

Administering Paper 2: reasoning

Recommended timing

Pupils have 35 minutes to complete the paper.

Resources

Pupils will need the following resources:

- a sharp, dark pencil
- a ruler showing centimetres and millimetres
- a rubber (optional). If rubbers are not provided, tell the pupils that they may cross out any answer they wish to change.

Pupils may also use the following resources, if this is normal classroom practice, provided they only give word-for-word translations:

- bilingual dictionaries or electronic translators
- bilingual word lists
- monolingual English electronic spell checkers.

Pupils are not allowed:

- calculators
- number apparatus, e.g. ten base materials, number square, number lines, etc.

Assistance

Teachers should ensure that nothing they do or say during the test could be interpreted as giving pupils an advantage.

If a pupil requests it, teachers may read out a question on a one-to-one basis.

If reading to a pupil, teachers should read words and numbers but not mathematical symbols. This is to ensure that pupils are not given an unfair advantage by having the operation/function inadvertently explained by reading its name.

At a pupil's request, teachers can point to parts of the test paper such as charts, diagrams, statements and equations, but they should not explain the information or help the pupil by interpreting it.

If any everyday contexts or words related to a question are unfamiliar to a pupil, teachers may show them related objects or pictures, or describe the related context.

Before the test begins

- Review the list of pupils with any particular individual needs and ensure that their requirements are met.
- Ensure that pupils are able to work undisturbed and that the classroom layout and seating arrangements are suitable.
- Ensure that any wall displays do not give pupils an unfair advantage.
- Provide each pupil with the resources they require.

What to say at the start of the test

- *This is the reasoning paper.*
- *You will need a sharp, dark pencil, and a ruler. You may use a rubber for this test.* (If rubbers are not provided, you should tell the pupils that they may cross out any answer they wish to change.)
- *You must not use a calculator.*
- *Write your name and class name/number on the front of your test paper.*

- *Now look at the characters on page 1. Tom and Simi are two children who are in some of the questions in this paper. Other children are also mentioned in this paper. Their names are Anna, Jack and Ahmed.*
- *I'm going to read some questions for you to answer.*
- *I'm going to read each question twice only.*
- *You must listen very carefully as I read you each question.*
- *I will tell you how to write the answer to each question and you will have plenty of time to work out the answers.*
- *You must work on your own and you may not talk to each other and you mustn't call out the answers.*
- *Some questions will have boxes for you to write your answers in.*
- *If you need to do any working out, you can use any white space around the boxes.*
- *For some of the questions you will need to draw a tick.* (If necessary, on the board, show the children how to draw a tick.)
- *If you want to change your answer, put a line through the answer you don't want, or use a rubber.*

Practice question

- *Look at page 2.*
- *This is a practice question for us to do together.*
- ***Look at the cars.***
- ***How many cars are there?***
- *Write your answer in the box.*

Give pupils the opportunity to answer the question in their booklet. If any pupil is not sure what to do, explain what they need to do to answer the question. Allow pupils to change their answers to the correct one by crossing out or rubbing out, to make sure they know the way to correct errors.

NOTE: When reading out the aural questions to pupils, remember to repeat the question. Repeat the **bold** text only.

- *I'm now going to read out questions 1 to 5.*
- *Try to answer each question.*
- *If you can't answer a question, move onto the next question. You might be able to go back to a question later on.*
- *Remember, I can't help you answer these next questions. You must try to work them out on your own.*
- *Are there any questions you want to ask me now?*

Aural question 1

- *Question 1.*
- ***What number is one more than twenty-nine?***
- *Write your answer in the box.*

Aural *question 2*

- *Question 2.*
- ***What is the value of the digit 5 in this number?***
- *Write your answer in the box.*

Aural question 3

- *Look at page 4 and find question 3.*
- *Look at the clocks.*
- ***Tick the clock showing the time quarter past ten.***

Aural question 4

- *Look at the picture of the cake in question 4.*
- ***Simi has a cake.***
- ***She cuts the cake into quarters.***
- ***How many pieces of cake does she have now?***
- *Write your answer in the box.*

Aural question 5

- *Look at the picture of the cat and the dog in question 5.*
- **The cat has a mass of 10 kg.**
- **The dog has a mass of 18 kg.**
- **How much heavier is the dog than the cat?**
- *Write your answer in the box.*

- *That was the last question I'm going to read to you.*
- *You will need to read the rest of the questions in the booklet yourself.*
- *In some places there will be an answer box for you to write the answer. In other places, you may need to write your answer on a diagram or picture.*
- *Remember that you can use the white spaces on the page to do any working out, if you need to.*
- *Work as quickly and as carefully as you can.*
- *If you cannot do one of the questions, go on to the next one. You can come back to it later if you have time.*
- *If you finish before the end, go back and check your work.*
- *If you have any questions during the test, put your hand up and wait for someone to come to you. Remember, I can't help you answer any of the test questions.*
- *You have about 30 minutes to finish the rest of this paper.*
- *I will tell you when you have 5 minutes left.*
- *I will tell you when the test is over and to stop writing.*
- *Look at page 6 and start working.* (Write the start and finish times of the test on the board.)

What to do at the end of the test

- Use the mark schemes to mark the two papers, following the '**General marking guidance**', the '**Requirements**', and any '**Additional guidance**' for each question.
- Write the total score for each paper on the front of the test paper.
- Calculate the total marks allocated for both papers to determine the pupil's overall score out of 60. Record their results.
- If you wish to compare pupils' achievements with national standards, refer to the **Assigning a national standard** table at the end of this introduction.

Explanation of the mark schemes

The marking information for each question is set out in the form of tables which start on page xi.

The '**Qu**.' column on the left-hand side of each table provides a quick reference to the question number and, where applicable, the question part.

The '**Requirement**' column may include two types of information:

- a statement of the requirements for the award of each mark, with an indication of whether credit can be given for a correct method
- examples of some different types of correct response.

The '**Mark**' column indicates the total number of marks available for each question part.

The '**Additional guidance**' column (Paper 2 only) indicates alternative acceptable responses, and provides details of specific types of response that are unacceptable. Other guidance, such as the range of acceptable answers, is provided as necessary.

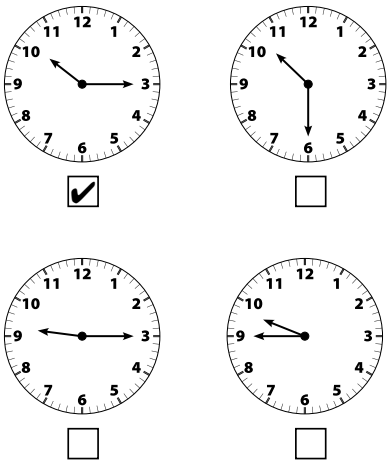
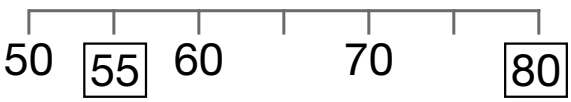
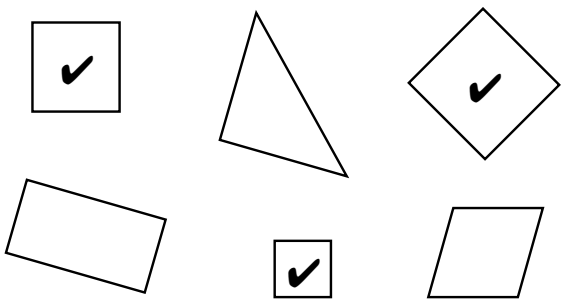
General marking guidance

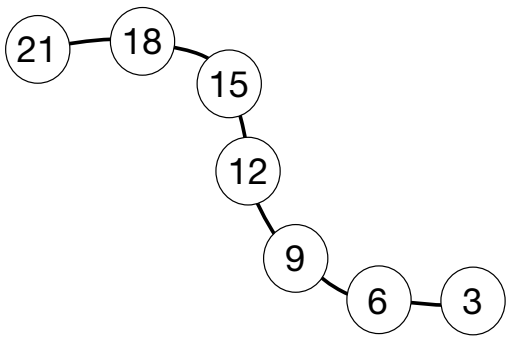
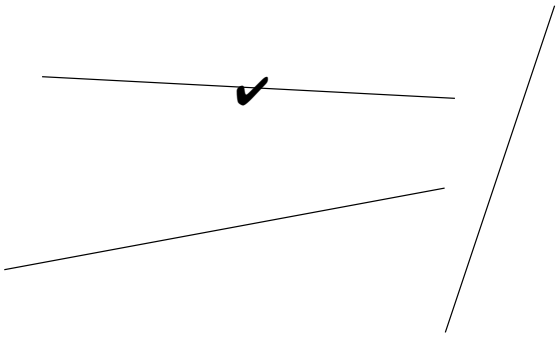
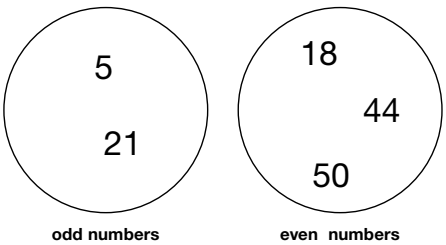
What if …	Marking procedure
The pupil reverses a digit when recording.	A reversed digit is acceptable if it is clearly recognisable as the digit intended; e.g. a reversed 2 must clearly show the characteristics of a 2 rather than a 5.
The pupil writes a transposed number as the answer.	Transposed numbers should not be awarded the mark, e.g. an answer of '18' when the correct answer is '81' should not be marked as correct.
The pupil's response is numerically equivalent to the answer in the mark scheme.	Award the mark unless the mark scheme states otherwise.
The pupil's response does not match closely any of the examples given.	Teachers should use their professional judgement in deciding whether the response corresponds with the statement of the requirements given in the 'Requirement' column in the mark scheme. Consideration should also be given to the 'Additional guidance' column.
The pupil has responded in a non-standard way.	Pupils may provide evidence in any form as long as its meaning can be understood. Diagrams, symbols or words are acceptable for explanations or for indicating a response.
There appears to be a misreading affecting the working.	If the original intention or difficulty level of the question is not reduced, deduct 1 mark only. In 1-mark questions – 0 marks are awarded. In 2-mark questions that have a method mark – 1 mark should be awarded if the correct method is correctly implemented with the misread number. If the original intention or difficulty level of the question is reduced, do not award any mark for the question part.
No answer is given in the expected place, but the correct answer is given elsewhere.	Where a pupil has shown understanding of the question, the mark(s) should be given.
The pupil's answer is correct but the wrong working is shown.	A correct response should always be marked as correct unless the mark scheme states otherwise.
The pupil has worked out the answer correctly and then written an incorrect answer in the answer box.	Precedence should be given to the answer given in the answer box over any other workings. There may be cases where the incorrect answer is due to a transcription error. In such cases check the pupil's intention and decide whether to award the mark.
The correct response has been crossed (or rubbed) out and not replaced.	Any legible crossed-out work that has not been replaced should be marked according to the mark schemes. If the work is replaced, then crossed-out work should not be considered.
More than one answer is given.	If all answers are correct (or a range of answers is given, all of which are correct), the mark should be awarded unless prohibited by the mark schemes. If both correct and incorrect responses are given, no mark should be awarded unless the mark scheme states otherwise.
The answer is correct but, in a later part of the question, the pupil has contradicted this response.	A mark given for one part should not be disallowed for working or answers given in a different part, unless the mark scheme specifically states otherwise.

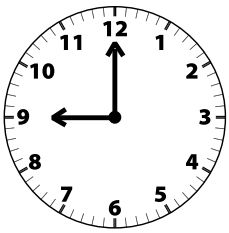
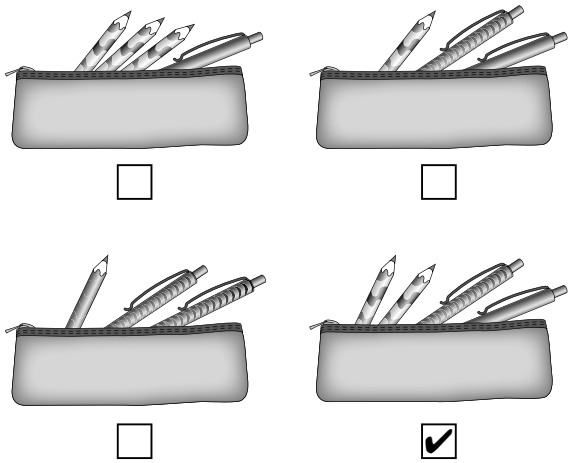
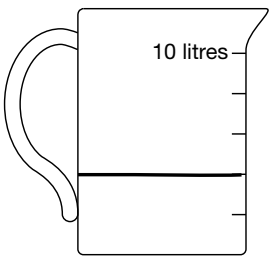
Mark schemes for Paper 1: arithmetic

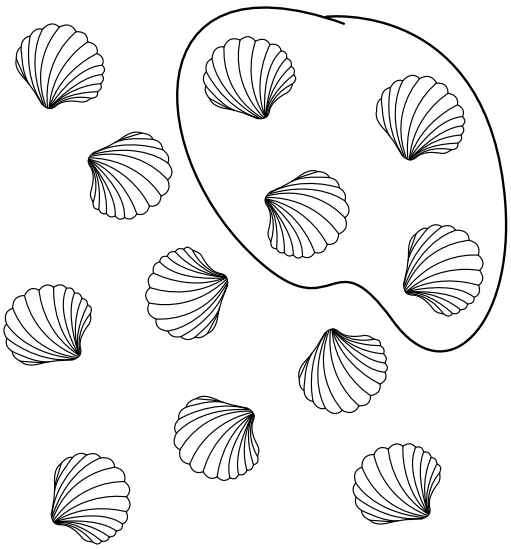
Qu.	Requirement	Mark
P	**3**	**0**
1	11	**1**
2	10	**1**
3	78	**1**
4	19	**1**
5	15	**1**
6	51	**1**
7	3	**1**
8	53	**1**
9	14	**1**
10	60	**1**
11	36	**1**
12	44	**1**
13	20	**1**
14	50	**1**
15	10	**1**
16	9	**1**
17	2	**1**
18	8	**1**
19	2	**1**
20	65	**1**
21	12	**1**
22	82	**1**
23	27	**1**
24	6	**1**
25	15	**1**

Mark schemes for Paper 2: reasoning

Qu.	Requirement	Mark	Additional guidance
P	**7**	**0**	**Practice question**
1	30	**1**	
2	50	**1**	Accept 5 tens.
3		**1**	Accept any other clear way of indicating the correct response.
4	4	**1**	
5	8 (kg)	**1**	
6	25 (marbles)	**1**	
7		**1**	Both numbers correct for award of one mark.
8	fifty 29	**1**	Both parts must be correct for the award of the mark. Accept any reasonable spelling for ‘fifty’, e.g. fifte, fiftee, fift, fifti. **Do not** accept words that might indicate ‘fiftteen’, e.g. fiftin, or ‘five’, e.g. fiv, fif. Accept reversed digits for ‘29’, e.g. ‘2P’ provided that the order of the digits is not swapped. **Do not** accept 92, P2 etc.
9		**1**	All three correct for award of the mark. Accept any other clear way of indicating the correct response. **Do not** award the mark if other shapes are also indicated, unless it is clear that the correct shapes are the pupil’s final choice.

Qu.	Requirement	Mark	Additional guidance
10	E	1	Accept an arrow drawn to clearly indicate position E.
11		1	Both numbers must be correct for the award of the mark.
12		1	Accept any other clear way of indicating the correct response.
13		2	a) Award **ONE** mark for all numbers correctly placed. b) Award **ONE** mark for any odd number apart from those already given. The number may be written inside the group or clearly indicated elsewhere.
14	65 (pence)	1	
15	Number of faces: 6 Number of edges: 12 Number of vertices: 8	1	Both numbers must be correct for the award of the mark.
16	$\frac{3}{4}$	1	Also accept fraction written as words 'three quarters'.
17	30 (points)	1	
18	a) 14 (children) b) 3 (children)	2	a) **ONE** mark b) **ONE** mark. **Do not** accept 7 – 4.

Qu.	Requirement	Mark	Additional guidance
19		1	Accept minute hand drawn between 2 minutes to the hour and 2 minutes past (inclusive). Accept an hour hand that clearly points more to 9 than to 8 or 10 Accept any length clock hands drawn as long as it is within the range given above and it is clear which hand is the minute hand and which is the hour hand. **Do not** accept the minute hand being shorter than the hour hand.
20		1	Accept any other clear way of indicating the correct response.
21	3 + $\boxed{5}$ + 5 = 13 2 + $\boxed{8}$ = 15 – 5 $\boxed{4}$ + 10 = 20 – 6	1	All numbers must be correct for the award of the mark.
22		1	Accept any other clear way of indicating 4 litres. Accept slight inaccuracies as long as the intention is clear. (As a guide, a value between 3.75 litres and 4.25 litres.)
23	17 (stickers)	2	Award **TWO** marks for the correct answer of 17 (stickers) or, if the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. 4 × 5 = 20 20 – 3 = or 5 + 5 + 5 + 5 = 20 20 – 3 =

Qu.	Requirement	Mark	Additional guidance
24	65 + 41 = 24 ☐ 24 – 65 = 41 ☐ 41 + 24 = 65 ☑ 41 – 24 = 65 ☐	**1**	Accept any other clear way of indicating 41 + 24 = 65
25		**1**	Accept any other clear way of indicating 4 shells.
26	25 ÷ 5 = 5 ☑ 25 – 5 = 20 ☐ 25 + 5 = 30 ☐ 25 × 5 = 125 ☐	**1**	Accept any other clear way of indicating the correct response. Do not award the mark if other calculations are indicated unless it is clear that the correct calculation is the pupil's final choice.
27	Simi, Tom, Anna	**1**	Accept 69 cm, 78 cm, 87 cm.
28	$\frac{2}{4}$	**1**	Also accept fraction written as words 'two quarters'.
29	19 (counters)	**2**	Award **TWO** marks for the correct answer of 19 (counters) or, if the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. 60 – 24 = 36 36 – 17 = or 24 + 17 = 41 60 – 41 =

Qu.	Requirement	Mark	Additional guidance
30	4 + 6 — 3 ÷ 6 8 – 3 — 6 + 4 6 ÷ 3 — 5 × 2 2 × 5 — 3 – 8	1	Accept any other clear way of indicating 2 × 5 and 2 × 5. Do not award the mark if other pairs are also matched, unless it is clear that 5 × 2 and 2 × 5 are the pupil's final choice.
31	6 × 3 = [9] × 2	1	

Assigning a national standard

A total of 60 marks are available for the Year 2 Test:

- Paper 1: arithmetic (25 marks)
- Paper 2: reasoning (35 marks)

The sum of the marks allocated from these two papers determines the pupil's overall raw score.

Schools that wish to compare their pupils' achievements with national standards should use the thresholds in the table below to convert raw scores into national standards.

Raw score (out of 60)	0–11	12–29	30–47	48–60
Scaled score	0%–19%	20%–49%	50%–79%	80%–100%
Standard	Working below national standard	Working towards national standard	Working at national standard	Working at greater depth within the national standard