Thinking Skills

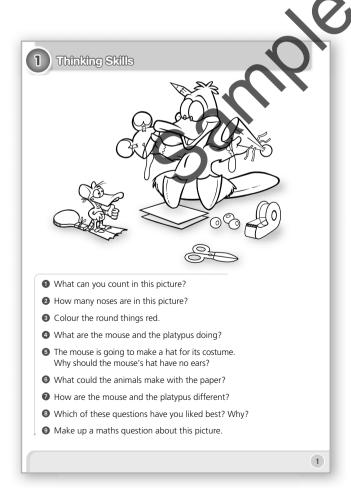
- Understanding
- Fluency
- Problem Solving
- Reasoning

Teaching Suggestions

- This test can be administered to each student individually or it can be discussed and completed as a class group.
- Discuss the picture. 'Which animal is larger?'
 'What are they doing?' 'Why do you think they are
 doing this?'
- Consider each question in turn. After all questions have been asked, sum up.

Proficiencies Tested

- Understanding and Fluency: counting, finding circular shapes and discrimination between shapes are covered.
- **Problem Solving** and **Reasoning**: students explain what the animals are doing, why one hat will have ears and the other will not; students are invited to surmise what might be made with the paper and asked how the animals are different; students must explain their ideas and are asked to make up a question of their own.



1A Number Revision

Content strand: Number and Algebra **Sub-strand**: Number and place value

Content description:

 Recognise, model, read, write and order numbers to at least 100. Locate these numbers on a number line.

Teaching Suggestions

- 1A Number Revision (p. 2) and 1B Number Revision (p. 3) could be treated in the same lesson, as they are both revisions of the previous year's work.
- Count forwards from 1 to 20.
- Count backwards from 20 to 0.
- Count, match and sort objects to make groups up to 5. Match groups with numeral cards (BLM 1, p. 151) and word labels (BLM 2, p. 152).
- Use a number line (BLM 13, p. 163) or number chart (BLM 9, p. 159) to locate numbers, and have the class 'count off' (each student stands as they call a number counting forwards, then sits when counting back).
- Hold up a numeral card (BLM 1, p. 151) and ask students to clap, stamp or jump that number of times.

Fun Spot

 Revise number names and numerals up to 5, and have students match number names and numerals.

Extension Work

Issue students with a numeral card (BLM 1, p. 151) or a word label card (BLM 2, p. 152) and ask them to keep it hidden. Ask a student to go out the front and call other students' names to see their cards. Count the number of turns it takes to match all of the numerals with their word names.

Language

one, two, three, four, five, count, counting numbers, numerals, number line, forwards, backwards, match

Resources

- any classroom objects that can be counted, e.g. counters, books, place-value ones
- numeral cards (BLM 1, p. 151)
- word labels (BLM 2, p. 152)
- number charts (BLM 9, p. 159)
- number lines (BLM 13, p. 163)

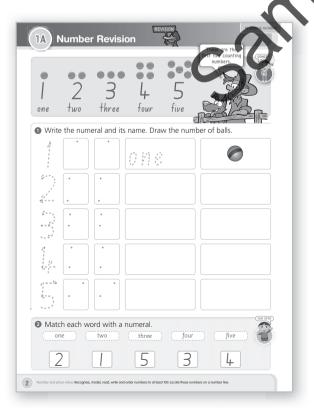
Cross-reference

See also: pp. 3, 4, 5, 8, 9, 14, 15, 22 Foundation p. 14 Year 2 p. 18

Evaluation

Is the student able to do the following?

- read and represent the numbers 1 to 5
- count forwards and backwards from 1 to 5
- order groups of up to 5 objects



- Numerals and names will be written and the appropriate number of balls will be drawn.
- 2 Number names and numerals will be matched.

1B Number Revision

Content strand: Number and Algebra **Sub-strand**: Number and place value **Content description**:

 Recognise, model, read, write and order numbers to at least 100. Locate these numbers on a number line.

Teaching Suggestions

- Count forwards from 1 to 20.
- Count backwards from 20 to 0.
- Count, match and sort objects to make groups up to 10.
 Match groups with numeral cards (BLM 1, p. 151) and word labels (BLM 2, p. 152).
- Use a number line (BLM 13, p. 163) or number chart (BLM 9, p. 159) to locate numbers, and have the class 'count off' (each student stands as they call a number counting forwards, then sits when counting back).
- Hold up a numeral card (BLM 1, p. 151) and ask students to clap, stamp or jump that number of times.
- Recognise odd and even numbers by grouping counters into two rows.

Fun Spot

 Revise number names and numerals up to 10, and have students match number names and numerals.

Extension Work

 Play a game of Concentration matching numeral cards (BLM 1, p. 151) with word labels (BLM 2, p. 152).

Language

one, two, three, four, five, six, seven, eight, nine, ten, count, counting numbers, numerals, number line, forwards, backwards, match, even, odd

Resources

- any classroom objects that can be counted, e.g. counters, books, place-value ones
- numeral cards (BLM 1, p. 151)
- word labels (BLM 2, p. 152)
- number charts (BLM 9, p. 159)
- number lines (**BLM 13**, p. 163)

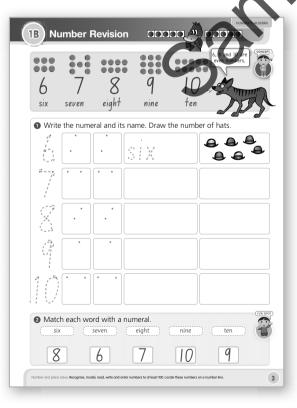
Cross-reference

See also: pp. 2, 4, 5, 8, 9, 14, 15, 22 Foundation p. 35 Year 2 p. 18

Evaluation

Is the student able to do the following?

- read and represent the numbers 1 to 10
- count forwards and backwards from 1 to 10
- order groups of up to 10 objects



- Numerals and names will be written and the appropriate number of hats will be drawn.
- 2 Number names and numerals will be matched.

10 Numbers 11 and 12

Content strand: Number and Algebra **Sub-strand**: Number and place value

Content description:

- Recognise, model, read, write and order numbers to at least 100. Locate these numbers on a number line.
- Develop confidence with number sequences to and from 100 by ones from any starting point. Skip count by twos, fives and tens starting from zero.

Teaching Suggestions

- Count, match and sort objects to make groups of up to 12. Match groups with numeral cards (BLM 1, p. 151) and word labels (BLM 2, p. 152). Use concrete materials to develop one-to-one correspondence when counting.
- Provide counting experiences up to 20 that involve circle counting, rhythmic counting and body percussion (e.g. clapping, nodding, stamping). Use number charts (BLM 9, p. 159) and number lines (BLM 13, p. 163) and have the class 'count off' (each student stands as they call a number counting forwards, then sits when counting back).
- Provide activities with two ten frames (BLM 8, p. 158) and counters to model numbers up to 12.
- Make numeral strips, 0 to 12. Ask: 'What number comes after 2? Before 8?' etc. Have flaps to cover the numerals.
- Have students use a finger to trace the words and numerals before writing them.
- Ask volunteers to write the numerals that come before after or between the given numerals on the board

Extension Work

- Investigation: Can 11 students fit in a hoop? Around a hoop? Can 12 students fit along a skipping rope?
- Locate numbers on a number line.

Language

eleven, twelve...twenty, count, number, before, after, between, forwards, backwards, next, second, even

Resources

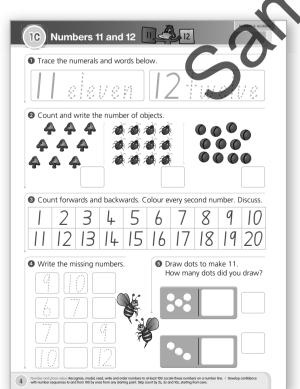
- any classroom objects that can be counted, e.g. counters, blocks, beads, buttons, place-value ones, toys
- hoop, skipping rope
- numeral strips
- numeral cards (**BLM 1**, p. 151)
- word labels (BLM 2, p. 152)
- ten frames (BLM 8, p. 158)
- number charts (BLM 9, p. 159)
- number lines (**BLM 13**, p. 163)

Cross-reference

See also: pp. 2, 3, 5, 8, 9, 14, 15, 22 Foundation p. 99 Year 2 p. 18

Evaluation

- s the student able to do the following?
 - read and represent the numbers 11 and 12
 - count forwards to 20
 - order groups of up to 12 objects



- Numerals and names will be traced.
- **2** 9, 12, 11

•										
3	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20

- 4 Numbers will be traced and the missing numbers written: 11, 8, 8, 11
- **5 6**, **6**

Numbers 11 to 16

Content strand: Number and Algebra **Sub-strand**: Number and place value

Content description:

- Recognise, model, read, write and order numbers to at least 100. Locate these numbers on a number line.
- Develop confidence with number sequences to and from 100 by ones from any starting point. Skip count by twos, fives and tens starting from zero.

Teaching Suggestions

- Count, match and sort objects to make groups of up to 16. Match groups with numeral cards (BLM 1, p. 151) and word labels (BLM 2, p. 152). Use concrete materials to develop one-to-one correspondence when counting.
- Students count beads, buttons and so on into suitably cut egg cartons to show 10, 10 and 1, 10 and 2, etc. Discuss the language of '-teen' numbers.
- Provide activities with two ten frames (BLM 8, p. 158) and counters to model numbers up to 16 using ten as a reference, e.g. 'Fourteen is four more than ten'. Practise writing numerals 11 to 16.
- Provide counting experiences up to 20 that involve circle counting, rhythmic counting and body percussion, e.g. clapping, nodding, stamping.
- Use number charts (BLM 9, p. 159) and number lines (BLM 13, p. 163), and have the class 'cou (each student stands as they call a number counting forwards, then sits when counting back)

1D Numbers 11 to 16 1 Trace over the numerals Count and write the number of objects. *ಜೀಜೀಜೀ* みみみ born-s born-s born-s born-s みみみ 윤윤윤윤윤 Write the missing numbers 4 Trace the numerals and write 6 Colour the counting path from 10 11 12 13 14 15 16 16 7 8 9 10 13 15 8 5 13 14 15 16 9 14 7 | 10 | 11 | 12 | 5 | 11 | 12 | 13 4 4 5 6 2 10 7 4 2 3 1 7 8 9 6 3 4 5 8 7 5 ace value. Recognise, model, read, write and order numbers to at least 100. Locate these numbers on a number line. | Devices to and from 100 by ones from any starting point. Skip count by 2s, 5s and 10s, starting from zero.

 Make numeral strips, 0 to 16. Ask: 'What number comes after 2? Before 8?' etc. Have flaps to cover the numerals.

Extension Work

- Provide cards numbered 10 to 16. Deal the cards to students and have them match each card with the correct number of beads
- Students choose five numbers from 1–16 and use number names to play Bingo.
- Students complete BLM 3 Naming Numbers, p. 153.

Language

eleven, twelve, thirteen, fourteen, fifteen, sixteen, count, number, numeral

Resources

- any classroom objects that can be counted, e.g. counters, blocks, beads, buttons, place-value ones
- egg cartons
- numeral strip
- cards (BLM 1, p. 151)
- word labels (BLM 2, p. 152)
- naming numbers (BLM 3, p. 153)
- ten frames (**BLM 8**, p. 158)
- number charts (BLM 9, p. 159)
- number lines (BLM 13, p. 163)

Cross-reference

See also: pp. 2, 3, 4, 8, 9, 14, 15, 22 Foundation p. 99 Year 2 p. 18

Evaluation

Is the student able to do the following?

read and represent the numbers 11 to 16

6

- count forwards to 20
- order groups of up to 16 objects

Answers

- Numerals will be traced.
- **2** 12, 16, 15
- **3** 10, <u>11</u>, <u>12</u>, <u>13</u>, 14, <u>15</u>, <u>16</u>
- 4 Numerals will be traced and written.

13, 14, 16.

)	10	11	12	13	14	15	16	16
	9	6	7	8	9	10	13	15
	8	5	13	14	15	16	9	14
	7	10	11	12	5	11	12	13
	4	4	5	6	2	10	7	4
	2	3	1	7	8	9	6	3
	1	3	4	5	8	7	5	2

2A Adding Two Groups

Content strand: Number and Algebra **Sub-strand**: Number and place value

Content description:

 Represent and solve simple addition and subtraction problems using a range of strategies including counting on, partitioning and rearranging parts.

Teaching Suggestions

- Arrange two groups of objects horizontally and have students count how many there are altogether.
- Students represent problems with concrete materials and then word and numeral cards (BLM 1, p. 151 and BLM 10, p. 160) to show the number sentence.
- For the first question, ensure that the students can distinguish the two groups in each row.
- Discuss other words that could be used instead of 'makes', e.g. equals, gives, is.
- Model addition using colourful materials, e.g. counters, picture cards.
- Practise addition using dominoes.
- Ask students to recall addition facts to 5, using the fingers of two hands if necessary.
- Review words for the numerals 0 to 10 (BLM 2, p. 152).

Activity

 Emphasise that students should draw pictures that match the number sentence.

Extension Work

Put out numeral and word cards and have students find objects to match, using + and =,
 e.q. 4 + 2 =.

Language

join, add, and, plus, together, makes, equals, is equal to, the same as, more than, less than, greater than

Resources

- any classroom objects that can be counted, e.g. counters, blocks, beads, place-value ones, shells, toys
- other concrete counting materials, e.g. Centicubes, Cuisenaire rods, craft sticks, Lego, Unifix cubes
- numeral and symbol cards (BLM 1, p. 151)
- word labels (BLM 2, p. 152)
- word cards (BLM 10, p. 160)

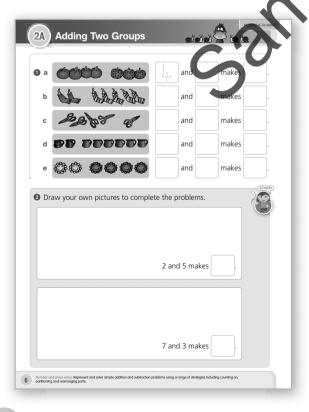
Cross-reference

See also: pp. 4, 7, 18, 19, 26, 30, 31, 50 Foundation p. 98 Year 2 p. 2

Evaluation

Is the student able to do the following?

- model addition
- apply a range of mental strategies and informal recording methods for addition



Australian Signpost Maths 1 Teacher's Book

Answers

- **1 a** 4 and 3 makes 7
 - c 4 and 1 makes 5
 - e 2 and 4 makes 6
- **a** Pictures will vary. 2 and 5 makes 7
- **b** Pictures will vary. 7 and 3 makes 10

b 2 and 5 makes 7

d 2 and 6 makes 8

2B Addition Sentences

Content strand: Number and Algebra **Sub-strand**: Number and place value **Content description**:

 Represent and solve simple addition and subtraction problems using a range of strategies including counting on, partitioning and rearranging parts.

Teaching Suggestions

- Introduce the symbol cards + and = (BLM 1, p. 151).
- Give concrete examples using objects with numeral and symbol cards (BLM 1, p. 151). Students can make individual number sentences.
- Discuss the first question and complete the missing numerals. Repeat for the remaining rows.
- Provide groups of students with 12 counters. In turn, each student takes some or all of the counters and separates them into two groups, and the other students write a number sentence to show the joining of the groups.

Activity

 Encourage students to use pictures to show the number sentences. Note that the number sentence displayed is made up of three numbers.

Extension Work

- Students throw a dice twice and build the matching number sentence using numeral and symbol cards (BLM 1, p. 151).
- Ask students to recall addition facts to 10, using the fingers of two hands if necessary. Discuss other solutions also.

Language

join, add, and, plus, together, makes, equals, is equal to, same as, more than, less than, greater than

Resources

- any classroom objects that can be counted, e.g. counters, beads, fruit, pattern blocks, picture cards, shells
- dice
- numeral and symbol cards (**BLM 1**, p. 151)

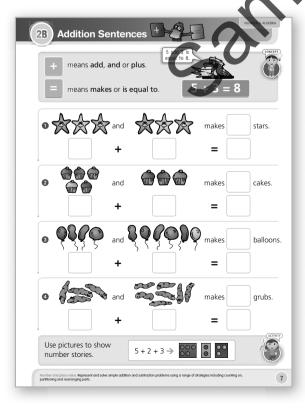
Cross-reference

See also: pp. 4, 6, 18, 19, 26, 30, 31, 50 Foundation p. 98 Year 2 p. 2

Evaluation

Is the student able to do the following? model addition

- apply a range of mental strategies and informal recording methods for addition
- record number sentences



Answers

- $\mathbf{1}$ 6, 3 + 3 = 6
- 28,5+3=6
- $\mathbf{3}$ 10. 4 + 6 = 10
- 4 11, 4 + 7 = 11

Activity

Answers will vary.

31B Calculators

Content strand: Number and Algebra

Sub-strand: Number and place value, Patterns and algebra

Content description:

- Number and place value: Represent and solve simple addition and subtraction problems using a range of strategies including counting on, partitioning and rearranging parts.
- Patterns and algebra: Investigate and describe number patterns formed by skip counting and patterns with objects.

Teaching Suggestions

- Review the positions of the important keys on the calculator.
- Practise addition and subtraction questions and record the number sentences.
- Demonstrate the constant addition function on the calculator. An overhead transparency of a simple calculator can be used to direct the class,
 e.g. 10 + + 3 = = = gives 13, 16, 19.
- Students practise using the constant addition function on a calculator. Discuss findings.

Extension Work

 Use the constant operator function on a calculator to count forwards and backwards.

Language

on, off, clear, buttons, calculator sentence, plus, add, subtract, minus, constant addition, constant operator, makes, equals, is equal to, number sentence

Resources

- calculators
- transparency of calculator, overhead projector or IWB

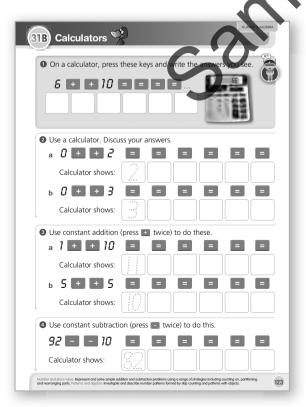
Cross-reference

See also: p. 83 Year 2 p. 138

Evaluation

Is the student able to do the following?

record number sentences on a calculator



- **1** (6,) 16, 26, 36, 46, 56, 66
- **2 a** (2,) 4, 6, 8, 10, 12 **b** (3,) 6, 9, 12, 15, 18
- **3 a** (11,) 21, 31, 41, 51, 61 **b** (10,) 15, 20, 25, 30, 35
- **4** (82,) 92, 102, 112, 122, 132



Content strand: Measurement and Geometry **Sub-strand**: Using units of measurement **Content description**:

 Use direct and indirect comparisons to decide which is longer, heavier or holds more, and explain reasoning in everyday language. [Progression]

Teaching Suggestions

- Provide frequent opportunities for students to use balance scales to compare and order the mass of two objects.
- Discuss the movement of balance scales: the side that goes down holds the heavier object, while the side that goes up holds the lighter object. When the scales are level, the objects have the same weight (i.e. mass).
- Students use informal units to estimate and measure the mass of an object on balance scales,
 e.g. 'The ball weighs the same as 10 sticks of chalk'.
- Students record the mass of an object by referring to the number and type of informal unit used, e.g. 'The book weighs 20 place-value ones'.

Activity

 Ensure students place items on either sides of the scales for accurate comparison. Students could heft items first to estimate.

Extension Work

 Use computer games or other software that simulate the use of a balance.

Language

light, lighter, heavy, heavier, not as heavy, heft, hefting, balance scales, balance, balanced, level, even, same, lopsided, mass, weight

Resources

- balance scales
- various classroom objects to weigh, e.g. blocks, chalk, macaroni, nails, nuts and bolts, place-value ones
- access to computers, software that simulates balance

Cross-reference

See also: p. 36 Foundation p. 113 Year 2 p. 16

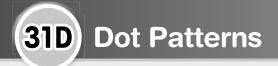
Evaluation

Is the student able to do the following?

- compare the mass of two objects using balance scales compare and order two or more objects according to mass
- estimate the heavier of two objects

The lighter one goes up. The bottle is heavier. The bottle is heavier. The scales are balanced. The scales are balanced. The bottle is heavier object. Circle objects that are balanced. The bottle is heavier object. The bottle is heavier object.

- a The truck will be crossed out.
 - **b** Both objects will be circled.
 - **c** The orange will be crossed out.
 - **d** Both objects will be circled.
 - e The larger frog will be crossed out.
 - **f** The cat will be crossed out.
 - g The bucket will be crossed out.
 - **h** The bear will be crossed out.
 - Both objects will be circled.
- 2 Answers will vary.



Content strand: Measurement and Geometry

Sub-strand: Shape **Content description**:

 Recognise and classify familiar two-dimensional shapes and three-dimensional objects using obvious features.

Teaching Suggestions

- Give students experience in using pegs and pegboards to make patterns and then direct them to make specific patterns.
- Provide square grid paper (BLM 18, p. 168) and have students create patterns by colouring squares.
- Discuss the first three patterns in turn before allowing the students to draw.
- Students use craft sticks or matches to copy each pattern and extend it.
- Allow students to experiment with patterns in the bottom grids.

Fun Spot

 Students should experiment with patterns in the bottom grid. Students could use a ruler to draw lines to make their own shape pattern.

Extension Work

- Use square dot paper (BLM 19, p. 169) to make more patterns.
- Allow students to use isometric dot paper (BLM 21, p. 171) to make patterns using shapes met so far.

Language

pattern, repeat, next to, beside, above, below, before, after, size, position, arrange, rectangle, triangle, hexagon, square

Resources

- pegboards, pegs
- craft sticks, matches
- pattern blocks, attribute blocks
- sticks, leaves
- square grid paper (BLM 18, p. 168)
- square dot paper (BLM 19, p. 169)
- isometric dot paper (BLM 21, p. 171)

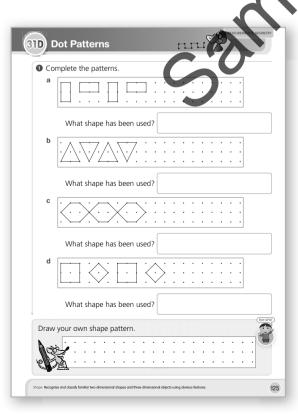
Cross-reference

See also, pp. 57, 69, 92, 93, 104, 105 Foundation p. 103 Year 2 p. 5

Evaluation

Is the student able to do the following?

- sort and describe two-dimensional shapes
- name circles, squares, triangles, rectangles and hexagons presented in different orientations in pictures and the environment
- represent two-dimensional shapes



Answers will vary. A shape pattern will be drawn.

Ordinal Numbers

Content strand: Number and Algebra **Sub-strand**: Number and place value

Content description:

 Recognise, model, read, write and order numbers to at least 100. Locate these numbers on a number line.

Teaching Suggestions

- Ask Questions 1 to 10 on ID Card 1, p. 149.
- Revise ordinal numbers.
- Students order two or more numbers. e.g. 15 comes before 16, 25 comes after 24.
- Students rank everyday events in order, e.g. 'Imogen was first and Rory was second in the race'.
- Discuss the relationship between ordinal numbers and counting numbers, e.g. six and sixth (6 and 6th).
- Match ordinal number labels (BLM 5, p. 155) and ordinal number word labels (BLM 6, p. 156).
- Examine a calendar and use ordinal numbers to read the dates, e.g. 5th April.

Extension Work

 Groups of students place ordinal number labels at the appropriate places along a string line.

Language

number, ordinal number, place, position, calendar, date, first, second ... thirty-first

Resources

- cards with ordinal number labels, string, pegs or sticky tape
- **ID Card 1**, p. 149
- ordinal number labels (1–10) (BLM 5, p. 155)
- ordinal number word labels (BLM 6, p. 156)

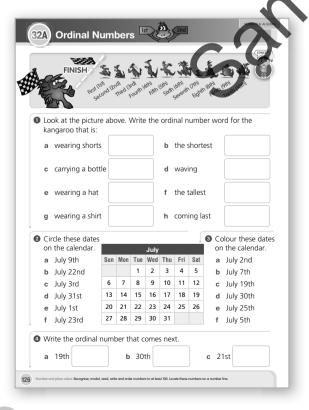
Cross-reference

See also: p. 10 Foundation p. 51 Year 2 p. 6

Evaluation

Is the student able to do the following?

rdinal numbers to thirty-first read and



Answers

a second (2nd)

С third (3rd) sixth (6th)

d fifth (5th) f

fourth (4th) h tenth (10th)

b seventh (7th)

- 2 The dates 1, 3, 9, 22, 23 and 31 July will be circled.
- **3** The dates 2, 5, 7, 19, 25 and 30 July will be coloured.
- a 20th (twentieth)
 - 31st (thirty-first)

eighth (8th)

c 22nd (twenty-second)