AUSTRALIAN

Signpost MATHS

Sample pages

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What is Australian Signpost Maths?

Australian Signpost Maths is a mathematics activity book series for students from Foundation to Year 6. The series has been written to meet the requirements of the Australian Curriculum.

The components of the series include Student Books, Teacher's Books, Mentals Books and an interactive Website. Teachers can select an appropriate program for every student from the rich and varied material provided.

The content has been carefully sequenced within each year level and across the series to take into account students' likely mathematical development.

Student Books

Teacher's Books

Mentals Books

Website

Structure of Australian Signpost Maths

Australian Signpost Maths emphasises the curriculum's syllabus content as well as problem-solving strategies, language development and the use of technology.

To maximise the benefits of the program, the Student Book, Teacher's Book, Mentals Book and Website should be used together.

The sequence of units in the **Student Book** forms a suggested program for the year. The **Teacher's Book** also provides lesson plans for each page of the Student Book, and blackline masters to assist teachers in implementing the program.

The Student Book presents lessons as a mix of content strands. However, the Contents and Contents Cross-reference pages in the Student Book allow teachers to construct programs based on the specific content strands (Number and Algebra, Measurement and Geometry, and Statistics and Probability). Progress Tests and remediation records are located in the Teacher's Book and on the website. These tests are also now included in the back of this book.

The **Mentals Book** for Years 1 to 6 mixes examples from all strands, reviewing the content of previous units of the Student Book.

The innovative **Website** help teachers to bring mathematics alive with technology. The website provides interactive maths tools, games and practice opportunities as well as relevant resource masters and worksheets for all year levels. These can be used for whole-class, small-group and individual learning.The website also includes **Concept Check-In**, a new diagnostic screener.

Sample pages

Special Features of Australian Signpost Maths

- **Traffic Light** system allows students to reflect on their work and highlight any units that they are having trouble understanding. They tick the red for units they feel they still don't understand, and green for those they feel they understand fully.
- Exercises are **well graded**. New work is reinforced in the Mentals Book.
- The **Progress Tests** (now also in the back of this book) allow the teacher to discover each student's strengths and weaknesses, and the cross-references direct students to the pages where that work is introduced.
- **Concept Check-In** diagnostic screener (on the Website) provides a snapshot of the class' conceptual understandings to aid in classroom management. It also allows teachers to measure progress over time.
- **Answers** are supplied in the Teacher's Book.
- The **Dictionary** at the beginning of this Student Book will help students to learn the language of mathematics.
- **ID Cards** (in the Mentals Book, Teacher's Book and Website) review the language of mathematics by asking students to identify common terms, shapes and symbols.
- Important **rules and concepts** are clearly highlighted.
- **Worked examples** and explanations are given throughout the Student Book where new ideas are introduced.
- The use of **colour** makes emphasis clear and is highly motivating.
- **Cartoons** give instruction and friendly advice.
- **Interactive Activities** are provided on the website for whole-class, small-group and individual learning.

Australian Signpost Icons

Signpost icons are used throughout the book as cues to the essential nature of exercises and activities, and as a guide to ways of engaging with them. These icons often indicate alternative or more concrete approaches to dealing with concepts.

Cutting and pasting.

Drawing, matching and colouring.

Circle Circling the best or correct answer.

This icon highlights **important rules and concepts** occurring throughout the book. It often appears with worked examples.

Activities provide **applications and enrichment**. These activities usually involve the use of concrete materials and partner or group work.

These enjoyable activities are used to **motivate and involve** students in mathematical pursuits. They usually involve games and puzzles.

Investigations allow students to **explore and discover** maths concepts.

This icon indicates the use of computers, calculators or other **information and communications technology**.

Australian Curriculum Proficiency Strands

The proficiency strands of the Australian Curriculum describe how content is explored or developed – that is, the 'thinking and doing' of mathematics.

Understanding

Learning the concepts

*Students build a robust knowledge of adaptable and transferable mathematical concepts. They make connections between related concepts and progressively apply the familiar to develop new ideas. They develop an understanding of the relationship between the 'why' and the 'how' of mathematics.**

Conceptual understanding of maths ideas includes the explanation of a concept using text and diagrams. This occurs throughout Australian Signpost Maths at the top of many pages and is indicated by the Concept icon.

Fluency

Using the concepts

*Students develop skills in choosing appropriate procedures, carrying out procedures flexibly, accurately, efficiently and appropriately, and recalling factual knowledge and concepts readily.**

The practice of maths skills to build fluency occurs on every page of Australian Signpost Maths.

Problem Solving

Applying concepts and strategies to develop solutions to problems

*Students develop the ability to make choices, interpret, formulate, model and investigate problem situations, and communicate solutions effectively.**

Problem solving provides opportunities for students to use strategies and skills such as investigating and questioning, to collaborate with others and to communicate their findings to different audiences. Such activities are often indicated throughout Australian Signpost Maths by the Activity and Investigation icons.

Reasoning

Coherent and logical thought

*Students develop an increasingly sophisticated capacity for logical thought and actions, such as analysing, proving, evaluating, explaining, inferring, justifying and generalising.**

Students require opportunities to explain their mathematical thinking and can do so through both diagrams and written explanations. Reasoning questions are located throughout Australian Signpost Maths.

*The Australian Curriculum: Mathematics, v1.2 – Content structure

Sample pages

F Contents and Syllabus Overview

Contents Cross-reference viii
Dictionary xii
Dagnostic Tests. 118

KEY

- Number & Algebra
- Measurement & Geometry
- Statistics & Probability

Page	Unit	Title	Strand	Number and Algebra	Measurement and Geometry	Statistics and Probability	Sub-strand	Number and place value	Patterns and algebra	Using units of measurement	Shape	Location and transformation	Data representation and interpretation	Suggested progress
1		Thinking Skills												Term 1
2	1A	The Number One		■				●						
3	1B	The Number Two		■				●						
4	1C	Comparing Groups		■					●				●	
5	1D	Long, Short and Tall			■					●				
6	2A	The Number Three		■				●						
7	2B	The Number Four		■				●						
8	2C	Matching		■				●						
9	2D	Looking For Patterns		■					●					
10	3A	The Number Five		■				●						
11	3B	Numbers to 5		■				●						
12	3C	Curved and Straight			■						●			
13	3D	Position			■							●		
14	4A	Counting to Five		■				●						
15	4B	The Number Six		■				●						
16	4C	Circles			■						●			
17	4D	Heavy or Light			■					●				
18	5A	The Number Seven		■				●						
19	5B	Squares			■						●			
20	5C	Full, Empty and Half Full			■					●				
21	5D	Making Patterns		■					●					T1*
22	6A	The Number Eight		■				●						
23	6B	One-to-one Correspondence		■				●						
24	6C	Length			■					●				
25	6D	Triangles			■						●			
26	7A	The Number Nine		■				●						
27	7B	Comparing Groups		■				●					●	
28	7C	Matching Equal Groups		■				●						Term 2
29	7D	Rectangles			■						●			
30	8A	The Number Ten		■				●						
31	8B	Combining Groups		■				●						
32	8C	Cutting Shapes			■						●			
33	8D	Longer and Shorter			■					●				
34	9A	Zero		■				●						
35	9B	Numbers to Ten		■				●						
36	9C	Reading Graphs				■							●	

Sample pages

Page	Unit	Title	Strand	Sub-strand	Suggested progress
37	9D	Language of Location	Measurement and Geometry	Location and transformation	
38	10A	Numbers to Ten	Number and Algebra	Number and place value	
39	10B	Numbers to 10	Number and Algebra	Number and place value	
40	10C	Adding Two Groups	Number and Algebra	Number and place value	
41	10D	Sorting Objects	Measurement and Geometry	Patterns and algebra; Shape	
42	11A	Numbers 11 and 12	Number and Algebra	Number and place value	
43	11B	Numbers 13 to 20	Number and Algebra	Number and place value	
44	11C	Comparing Capacities	Measurement and Geometry	Using units of measurement	
45	11D	Shapes	Measurement and Geometry	Patterns and algebra; Shape	
46	12A	Adding Two Groups	Number and Algebra	Number and place value	
47	12B	Adding Two Groups	Number and Algebra	Number and place value	T2*
48	12C	Clocks	Measurement and Geometry	Using units of measurement	
49	12D	Day and Night	Measurement and Geometry	Using units of measurement	
50	13A	Taking Objects Away	Number and Algebra	Number and place value	
51	13B	Ordinal Numbers	Number and Algebra	Number and place value	
52	13C	Rolling and Sliding	Measurement and Geometry	Shape; Location and transformation	
53	13D	Drawing Graphs	Statistics and Probability	Data representation and interpretation	
54	14A	Same and Not the Same	Number and Algebra	Number and place value	
55	14B	Sharing	Number and Algebra	Number and place value	
56	14C	Days of the Week	Measurement and Geometry	Using units of measurement	
57	14D	Comparing Two Lengths	Measurement and Geometry	Using units of measurement	
58	15A	Adding Two Groups	Number and Algebra	Number and place value	
59	15B	Taking Away	Number and Algebra	Number and place value	
60	15C	Morning and Afternoon	Measurement and Geometry	Using units of measurement	
61	15D	3D Objects	Measurement and Geometry	Shape	
62	16A	Ordering Collections	Number and Algebra	Number and place value	Term 3
63	16B	Groups of Equal Size	Number and Algebra	Number and place value	
64	16C	Sequencing Events in a Day	Measurement and Geometry	Using units of measurement	
65	16D	Sorting Objects	Measurement and Geometry	Patterns and algebra; Shape	
66	17A	Adding Two Groups	Number and Algebra	Number and place value	
67	17B	Taking Away	Number and Algebra	Number and place value	
68	17C	Days of the Week	Measurement and Geometry	Using units of measurement	
69	17D	Telling the Time	Measurement and Geometry	Using units of measurement	
70	18A	Taking Away	Number and Algebra	Number and place value	
71	18B	Pathways	Measurement and Geometry	Location and transformation	
72	18C	Completing Patterns	Number and Algebra	Patterns and algebra	
73	18D	Ball-shaped Objects	Measurement and Geometry	Shape	
74	19A	Partitioning	Number and Algebra	Number and place value	
75	19B	Taking Away	Number and Algebra	Number and place value	
76	19C	Drawing Graphs	Statistics and Probability	Data representation and interpretation	
77	19D	Comparison of Mass	Measurement and Geometry	Using units of measurement	
78	20A	Adding Two Groups	Number and Algebra	Number and place value	
79	20B	Partitioning	Number and Algebra	Number and place value	

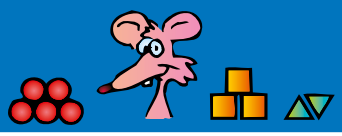
Sample pages

Page	Unit	Title	Strand	Sub-strand	Suggested progress
80	20C	Indirect Comparison	Measurement and Geometry	Using units of measurement	
81	20D	Location	Measurement and Geometry	Location and transformation	
82	21A	Comparing Groups	Number and Algebra	Number and place value	
83	21B	Using O'Clock	Measurement and Geometry	Using units of measurement	T3*
84	21C	Reading Graphs	Statistics and Probability	Data representation and interpretation	
85	21D	Cone-shaped Objects	Measurement and Geometry	Shape	
86	22A	Sharing	Number and Algebra	Number and place value	
87	22B	Counting to 20	Number and Algebra	Number and place value	
88	22C	Box-shaped Objects	Measurement and Geometry	Shape	
89	22D	Comparison of Mass	Measurement and Geometry	Using units of measurement	
90	23A	Taking Away	Number and Algebra	Number and place value	
91	23B	Sharing	Number and Algebra	Number and place value	
92	23C	Sequencing Events	Measurement and Geometry	Using units of measurement	
93	23D	Shapes	Measurement and Geometry	Shape	
94	24A	Adding On	Number and Algebra	Number and place value	
95	24B	Number Patterns	Number and Algebra	Number and place value, Patterns and algebra	
96	24C	Graphing the Weather	Statistics and Probability	Data representation and interpretation	
97	24D	Finding Shapes in Our World	Measurement and Geometry	Shape	
98	25A	Adding Groups	Number and Algebra	Number and place value	Term 4
99	25B	Counting to 30	Number and Algebra	Number and place value	
100	25C	Classifying 2D Shapes	Measurement and Geometry	Shape	
101	25D	Comparing Capacity	Measurement and Geometry	Using units of measurement	
102	26A	How Many More?	Number and Algebra	Number and place value	
103	26B	More Patterns	Number and Algebra	Patterns and algebra	
104	26C	Comparing Lengths	Measurement and Geometry	Using units of measurement	
105	26D	Pattern Blocks	Number and Algebra, Measurement and Geometry	Patterns and algebra, Shape	
106	27A	Sharing	Number and Algebra	Number and place value	
107	27B	Following Simple Directions	Measurement and Geometry	Location and transformation	
108	27C	Using Graphs	Statistics and Probability	Data representation and interpretation	T4*
109	27D	Can-shaped Objects	Measurement and Geometry	Shape	
110	28A	Comparing Collections	Number and Algebra	Number and place value	
111	28B	Rearranging Groups	Number and Algebra	Number and place value	
112	28C	Faces on 3D Objects	Measurement and Geometry	Shape	
113	28D	Comparing the Mass of Objects	Measurement and Geometry	Using units of measurement	
114	29A	The Number Line	Number and Algebra	Number and place value	
115	29B	Shape Pictures	Measurement and Geometry	Shape	
116	29C	2D Shapes	Measurement and Geometry	Shape	
117	29D	Comparing Distances	Measurement and Geometry	Using units of measurement, Location and transformation	

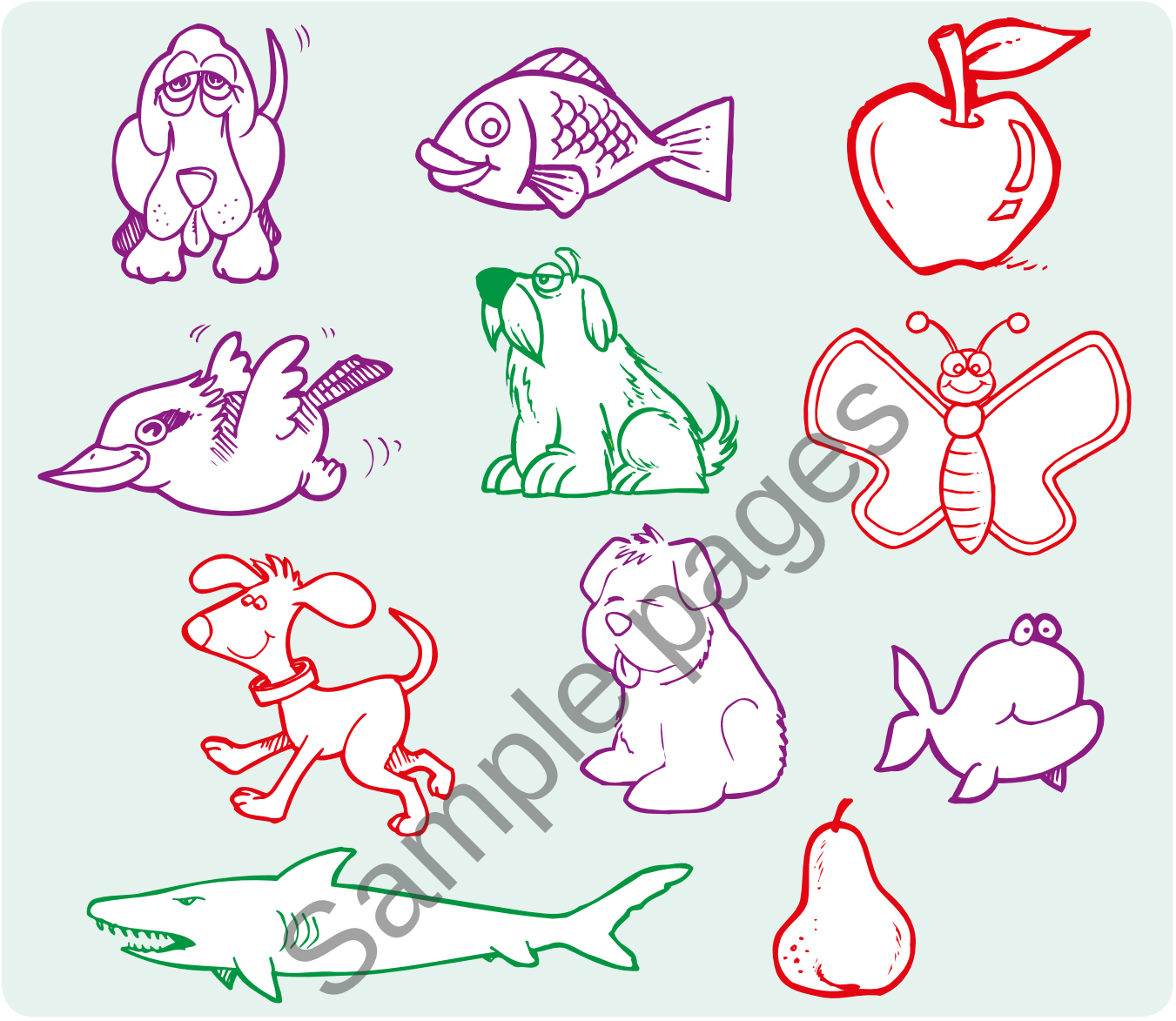
Sample pages

*Suggested program for Progress Tests 1 to 4 (see the Teacher's Book).

1C Comparing Groups



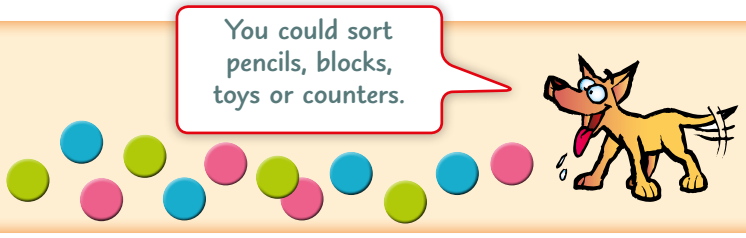
1 Colour each group differently.



How have you sorted the objects?

Which group has the most?

Sort groups of objects in your classroom. Talk about how you sorted the objects.



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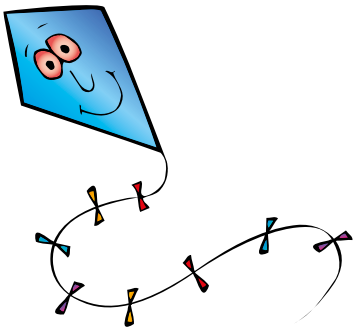
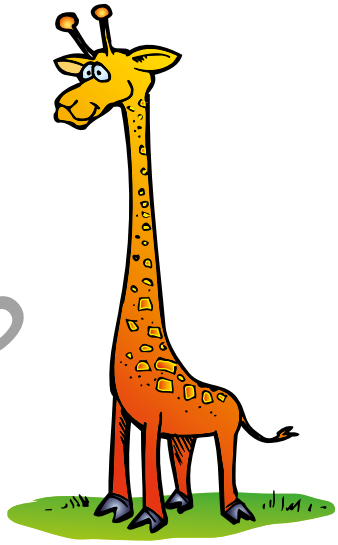
1D Long, Short and Tall

1 Draw lines to match.

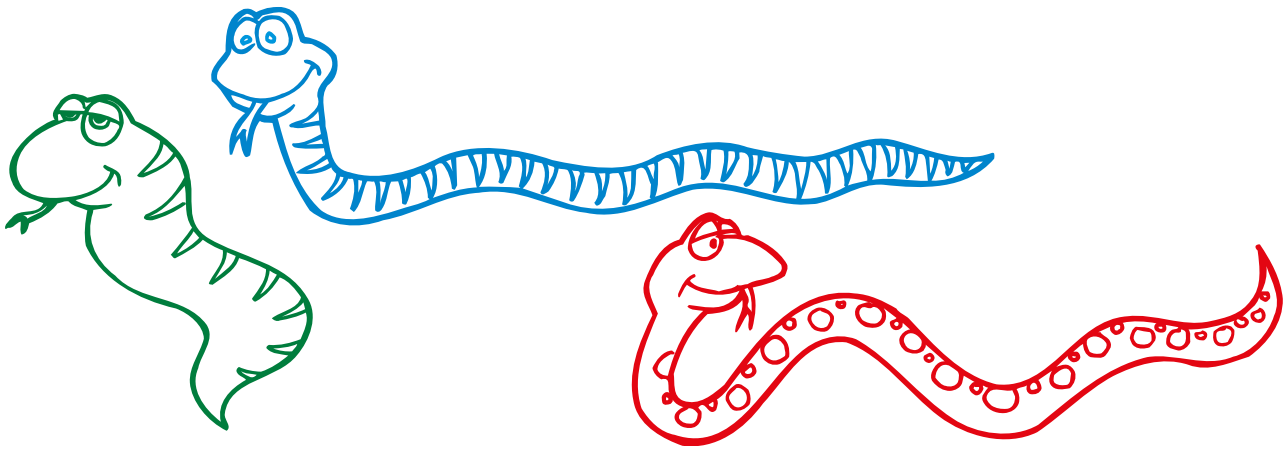
short | long | tall





2 Draw a tall tree. | Draw two short arrows. | Draw a long scarf.

3 Colour the long snakes. Draw two more short snakes.



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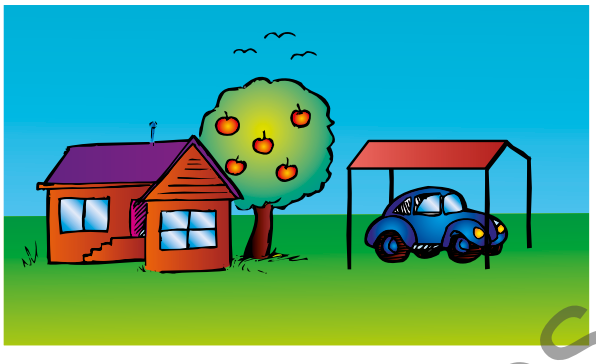
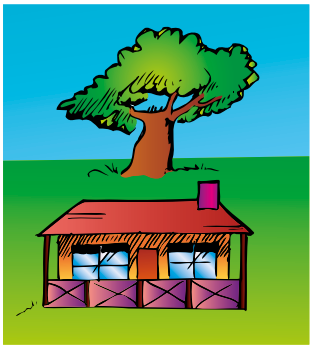
18B Pathways

Join the numbers in order to reach the shop.
Draw a shorter path.

● 1



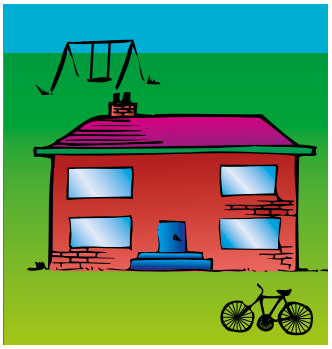
● 2



● 5

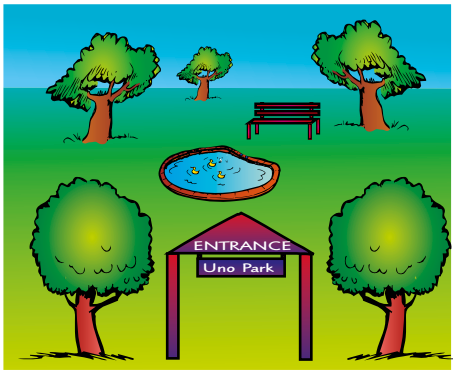
● 4

● 3



● 6

● 9



● 10

● 7

● 8

Tell a friend how to get to the park.

How many different paths can you find?

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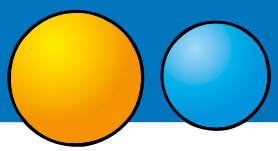
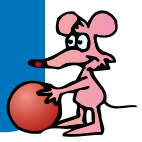
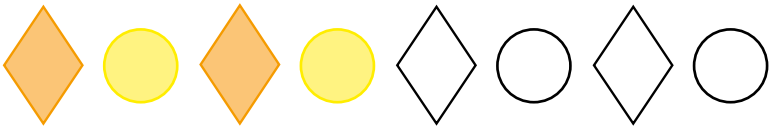
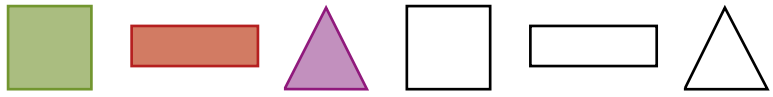
18C Completing Patterns

1 Complete and colour these patterns.

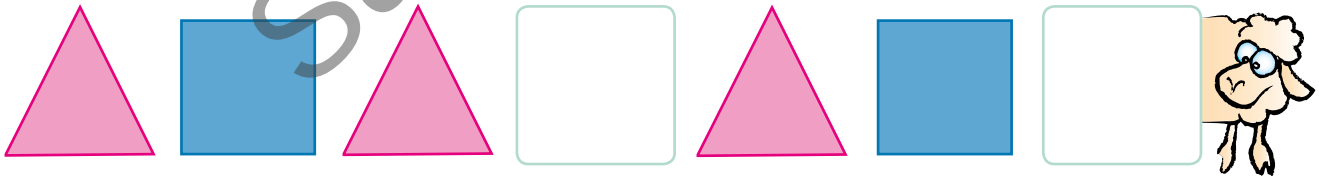


2 shapes make this pattern. This is a "2 pattern".



Talk about the rules in these patterns.

2 Describe each pattern. Complete each pattern.



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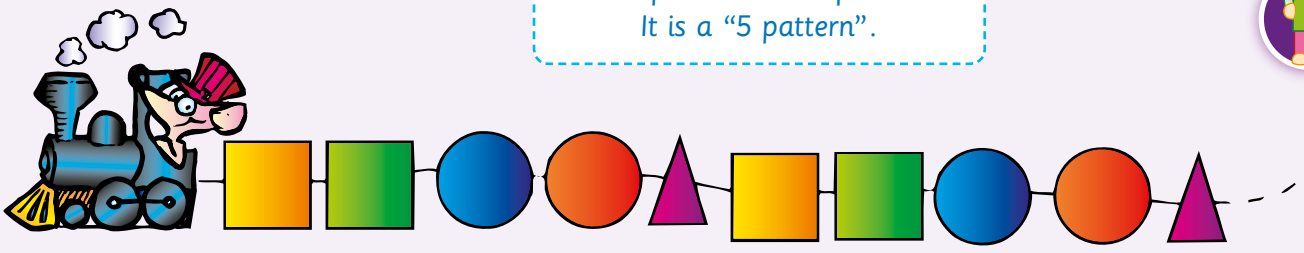
INVESTIGATION

Talk about this pattern.

5 shapes make this pattern. It is a "5 pattern".



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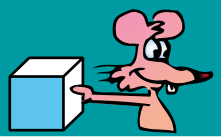
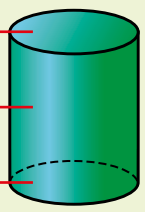
28C Faces on 3D Objects



CONCEPT

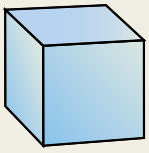
A face is a flat surface. Curved surfaces are not faces.

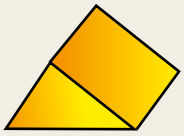
face
curved surface
face

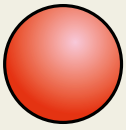


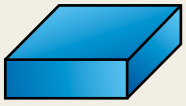
This object has 2 faces that are circles and 1 curved surface.

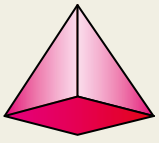
Which have faces?

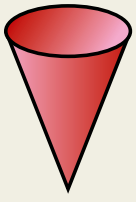
A 

B 

C 

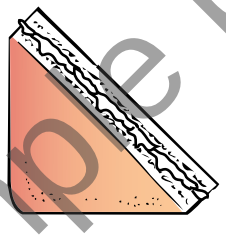
D 

E 

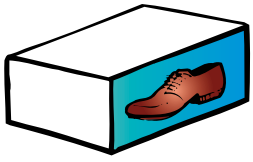
F 

1 Describe the coloured face on each object.

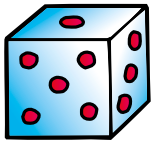
a This coloured face is a _____.



b This coloured face is a _____.



c This coloured face is a _____.



2 A dice has _____ faces.

INVESTIGATION

Handle objects and count the number of faces.

Object 1: _____ faces Object 2: _____ faces

Sample pages

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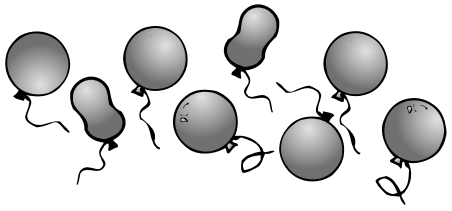
Progress Test 3

❶ Write how many are left.

a 6 birds, 4 fly away

left

b 8 balloons, 2 pop



left

❷ a Colour the 4th mouse.

b Tick the 1st mouse. (✓)

c Circle the 3rd mouse. (◯)

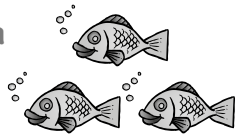
d Cross the 2nd mouse. (✗)

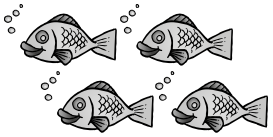
❸ a Draw lollies in each jar so that they are not the same.

b Draw balls in each row so that they are the same.

❹ Complete the number sentence.

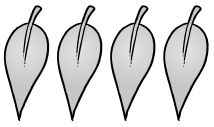
a

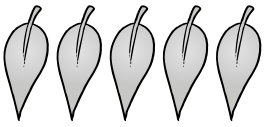




and makes

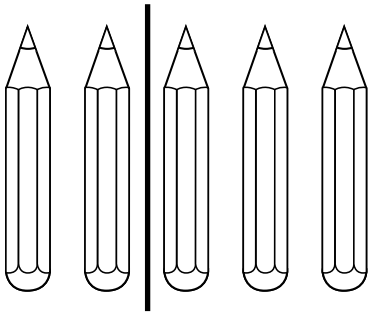
b



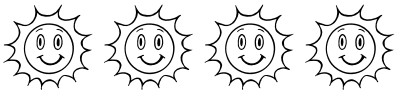


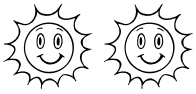
and makes

c Luke has five pencils. Two are green, the rest are blue. How many are blue?



❺ Write how many are in each row.

A 

B 

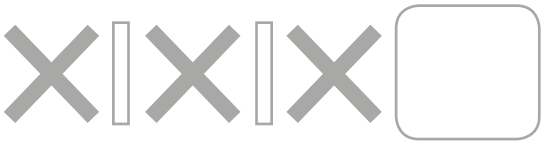
C

Order the rows from smallest to largest using the letters.

Sample pages

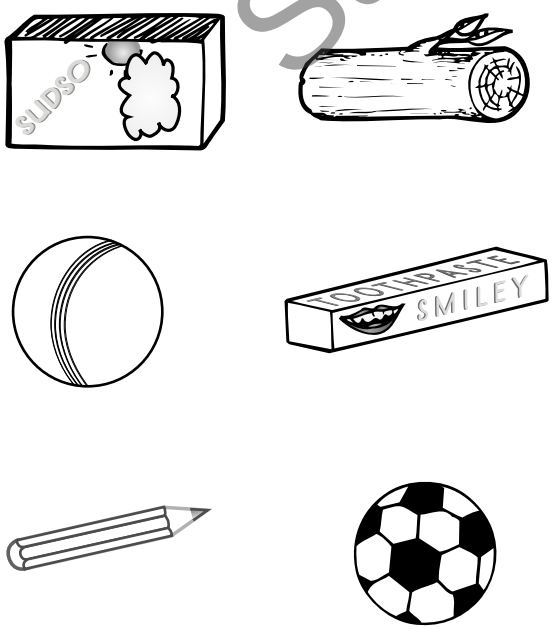
❻ Draw the next shape in each pattern.

a

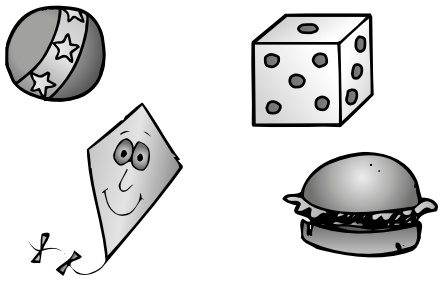
b 

❼ Draw an arrow to show the counter you would move to make these two groups the same.

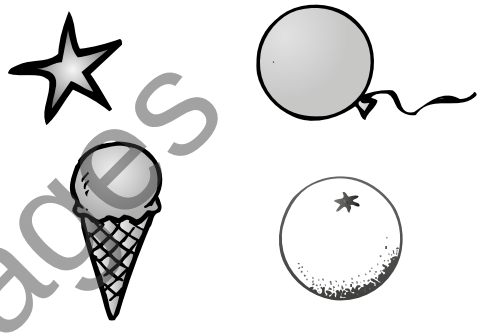
❽ Colour things that roll.
Circle things that slide.



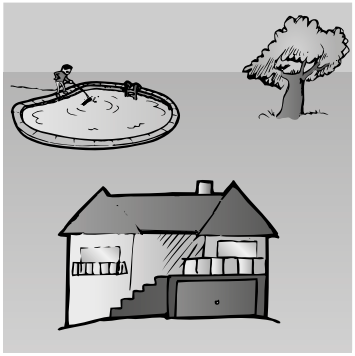
❾ a Circle objects that are curved.



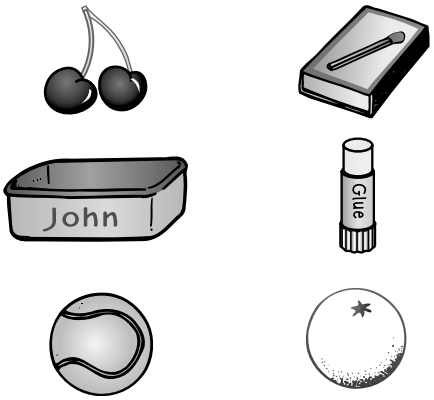
b Circle objects that are pointy.



❿ Draw a line from the tree to the house, then around the pool.



⓫ Circle the ball-shaped objects.



Sample pages

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