Grade 3 NAPLAN preparation pack:

Below is a guide with example questions to use with students preparing for NAPLAN for three weeks prior to the test. By this stage students are expected to have spent a term working with *Back-to-Front Maths* in order to help find and correct their misconceptions, particularly with regard to fractions and place value, and to develop deep understandings of mathematical concepts. The questions in this pack will help you work out where students still have problems and will give students some practice at answering non-standard questions before the test. They are not intended as a complete package and do not cover every aspect of numeracy that could be on the NAPLAN tests.

How to use the pack:
Allow students to try the problems for each day first, and then talk them through as a class. Make sure that you try to have students self-correct their own misconceptions rather than telling them the answers. Misconceptions are often present in the multiple choice NAPLAN questions and help determine if students have deep understanding or just routine, procedural skills.

Below is a suggested sequence for using the questions. The questions for each day are nominally drawn from a particular strand, but often contain questions that could be used for another strand. Each day's questions are not expected to take the same amount of time or be a complete lesson.

Week 1: Consolidating Number Concepts

1. Basic place value with two digit numbers
2. Addition and subtraction with two digit numbers, including money
3. Multiplication and division in context
4. Money and multistep questions
5. Number patterns and equations

Week 2: Extending number concepts and chance and data

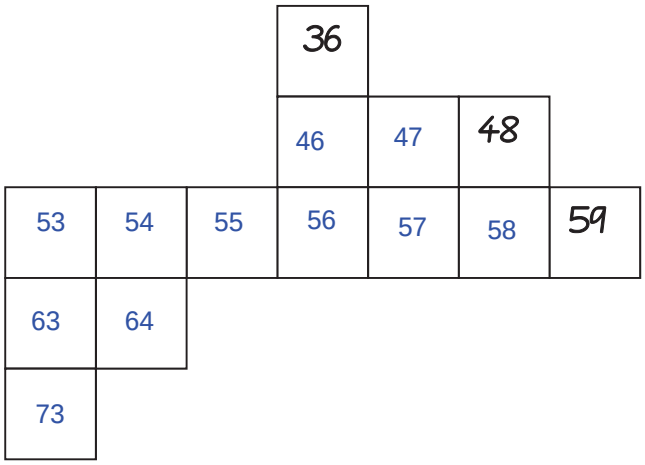
6. Fractions: halves and quarters, Fractions of a group
7. Place value with three digit numbers
8. Chance
9. Data
10. *Catch up on anything that you have missed.*

Week 3: Measurement and Space

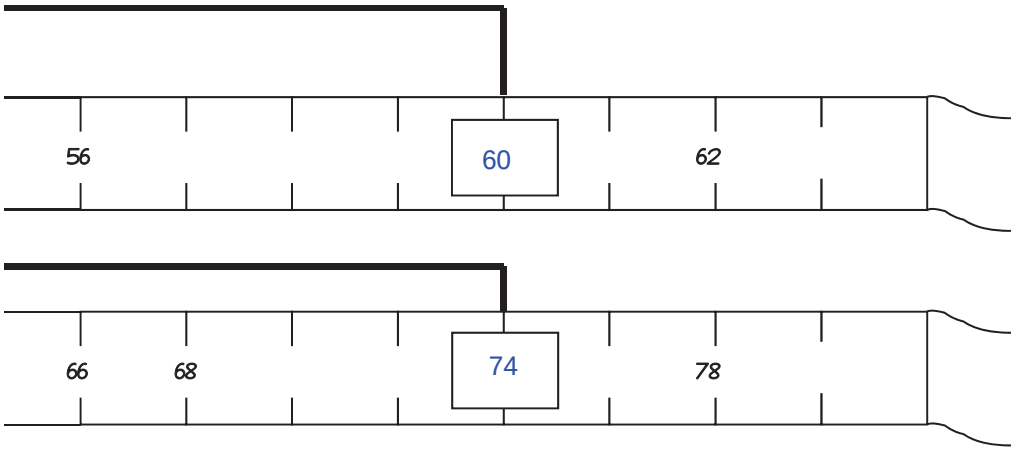
11. Measuring length, area and volume
12. Time
13. 2D shapes and transformations
14. 3D shapes and transformations
15. Maps and directions

Day 1: Basic place value with two digit numbers

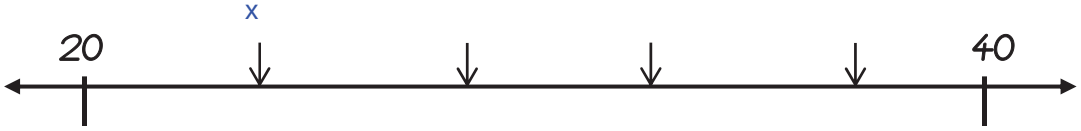
1. This is part of a hundreds board that has been cut out and some numbers have been lost. What numbers are missing? Write the numbers that are missing in the squares.



2. Jacob is using a tape measure to measure the furniture in his room. Use the tape measure to write on the missing numbers.



3. Which mark is closest to 25? Circle it.



4. Choose 2 of these numerals to make the smallest 2-digit number and the largest 2-digit number you can. Write them on the number line.

Write the smallest number here.

Write the largest number here.

What 2-digit numbers could you make that would go between the smallest and largest numbers. Write the numbers you have made onto the number line in order from smallest to largest.

18, 51, 58, 81

Day 2: Addition and Subtraction with two-digit numbers

1. Ryan and Ben have decided to use their savings to buy a new game for their computer that costs $78. Ryan has saved $35 and Ben has saved $32. How much more do they need to buy the game? 78 - 67 = $11 more

2. Ryan has 38 computer games. He has 17 more than Ben has. How many computer games does Ben have? 38 - 17 = 21

3. 45 - [22] = 23

4. [37] - 22 = 15

5. Lauren and Daniel are playing cards. Lauren made 17 pairs with her cards and Daniel made 5 pairs. How many cards have they made altogether? 44

6. Nick and Jeremy scored 27 baskets when they played basketball. Nick scored 12 of the baskets. How many baskets did Jeremy score? 15

7. At the end of the mini sports day, the students had a picnic lunch. There were 21 girls and 35 boys at the picnic. How many more boys were there than girls? 14

8. At the picnic, there were 43 mats to sit on. 13 students missed out on mats. How many students were at the picnic? 56

9. Rohan bought pairs of shoes. They cost $75. Which pairs did he buy?

x x

10. If I ended up with 36 lollies after I had given away 17, how many did I have to start with?

53

11.

$$\begin{array}{r} 2\,\boxed{3} \\ +\ 3\ \ 4 \\ \hline 5\ \ 7 \\ \hline \end{array}$$

$$\begin{array}{r} 5\,\boxed{6} \\ -\ 3\ \ 4 \\ \hline 2\ \ 2 \\ \hline \end{array}$$

$$\begin{array}{r} 6\,\boxed{3} \\ -\ 3\ \ 7 \\ \hline \\ \hline 2\ \ 6 \\ \hline \end{array}$$

Day 3: Multiplication and Division in context

1. Anna is making party bags to give to her friends. She has 24 lollies to put in the bags. Each party bag is going to have 3 lollies. How many party bags can she make?

   8

2. When Anna made 8 groups of 5 lollies she had 3 lollies left over. How many lollies did she start with?

   43

3. Jared was saving money to buy a tennis racket. He saved two dollars every week. Work out how many weeks it would take to buy the racket.

   14

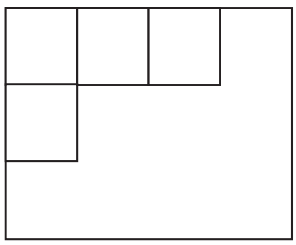
4. If I had 24 muffins, how many different arrays could I make? Draw them below and write number sentences for each of them: 24 x 1 12 x 2 8 x 3 6 x 4 (and their turn arounds)

5. I had 6 people coming to visit. Each person would need 2 drinks. I bought 3 bottles of drink. Each bottle holds 4 drinks. Do I have enough? yes... 6 x 2 = 12 drinks needed. 3 x 4 = 12 drinks bought

6. If the distance around a square measured 40cm, how long would one of the sides be? Explain your answer: 10cm

7. The weight of one apple was 250g. If a 2kg bag costs $8, how much does it cost per apple?
   $1 per apple..... 2 kg holds 8 apples, and that is $1 each to make $8

8. One tile is 10 centimetres long and 10 centimetres wide. This shows how the desk looks when it has been partly tiled. How big is the desk? How many tiles would be needed?



   40cm x 30cm = 1200 square cm
   12 tiles needed

Day 4: Money and Multistep Questions

1. Liam has 4 coins in his pocket. They made $1.65 in total. What coins were they?

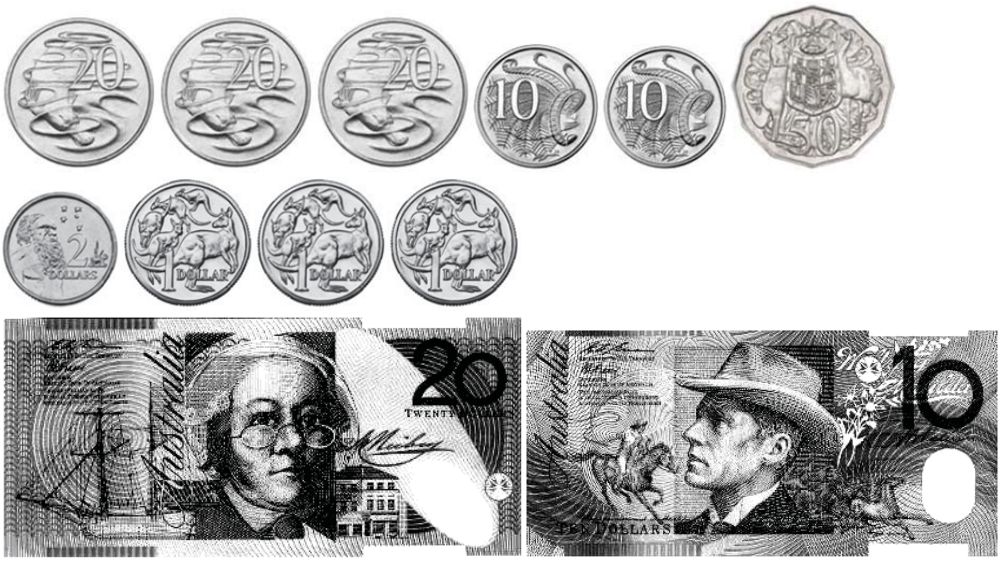
   $1 50c 10c 5c

2. Annie has $265. The money below is only some of what she has. Draw what is missing.

This is $140
She needs another $125

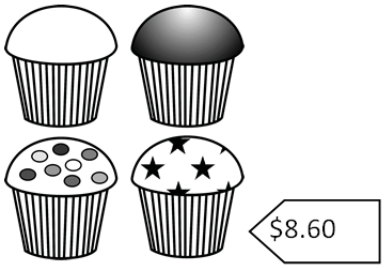
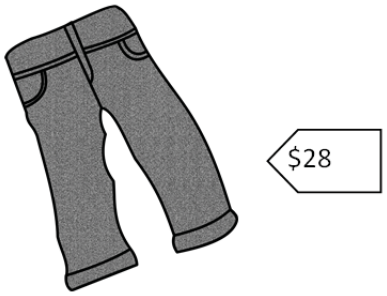
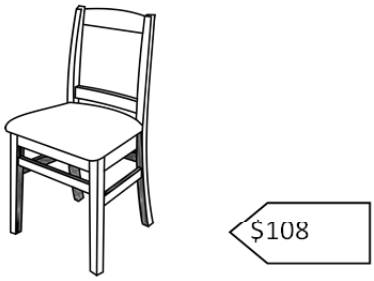
3. I was trying to buy a shirt that cost $24.75. The money in my wallet is shown below. What are three different ways that I could pay for the shirt? How much change would I get from each?

Money in my wallet:



4. If I didn't have one of the one dollar coins, how would your answers change?

5. Alan has the amount of money shown below. Which of the following items could he buy? Tick the circle to show if he has enough money or not enough money.

He could buy it x He could not buy it  	He could buy it x He could not buy it  	He could buy it He could not buy it x 
He could buy it x He could not buy it  	He could buy it He could not buy it x  	He could buy it x He could not buy it 

6. Judy spent all of her pocket money on buying things. She spent $40 altogether by buying some fruit salad, a shirt and a plant. How much did the plant cost?

Day 5: Number patterns and equations

1. What is missing from this counting pattern? __0__, __3__, 6, __9__, 12, __15__

2. How many answers can you find for this question?

$$6 + 3 = 7 - \square + \square$$

As long as the first number is 2 less than the second number it will work (and both numbers are positive)

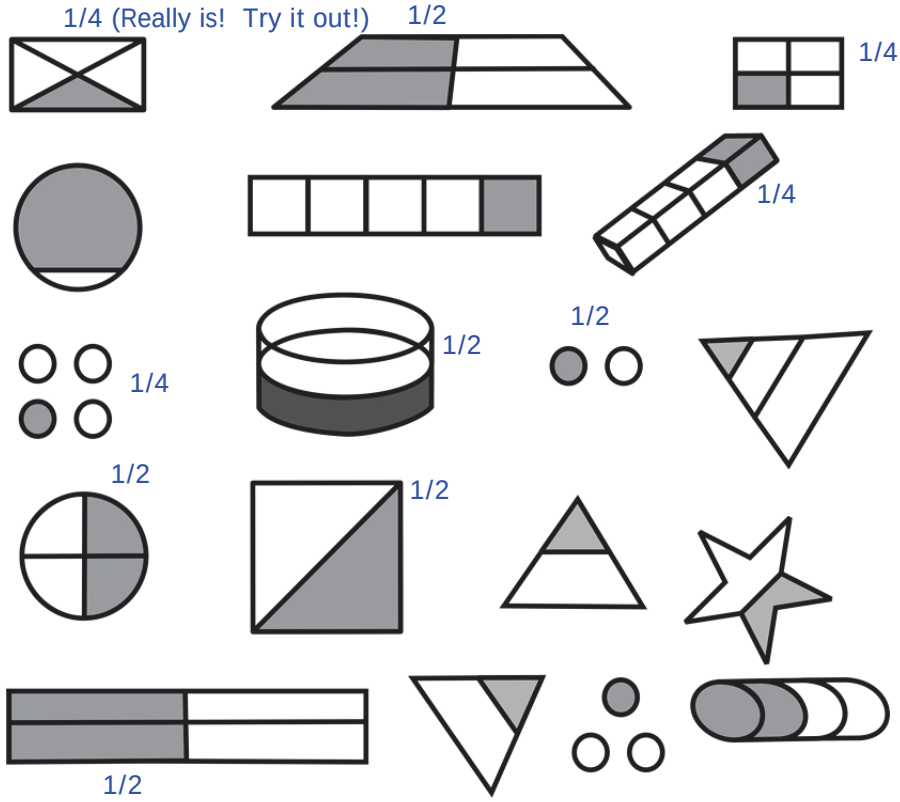
3. Starting with my mystery number, I double it, then add two, and am left with 12. What is the mystery number? 5

4. I had some money. I spent $8, then got out another $10 from the bank. I now have $12. How much did I start with? Prove it with a number sentence:
   $10 started with 10 - 8 + 10 = 12

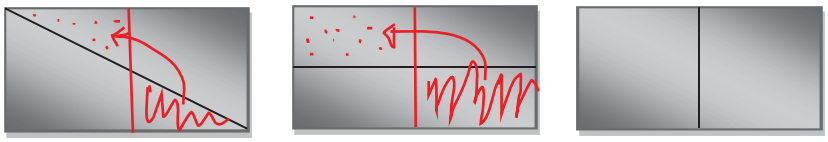
5. If I ended with a 5 and my pattern had been 'take away 2', what would the previous two numbers have been?
   7 and 9

Day 6: Fractions – halves, quarters and fractions of a group

1. Draw a circle around the pictures that show halves. Tick the pictures that show quarters.

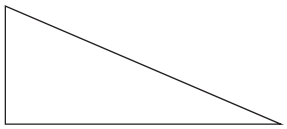


2. These cakes are all cut in half. They are the same size as each other. Which half is the biggest?



None, they are all exactly the same. See the cutting and imagine moving the bits

3. This is one half of a shape. What could the original shape have looked like?



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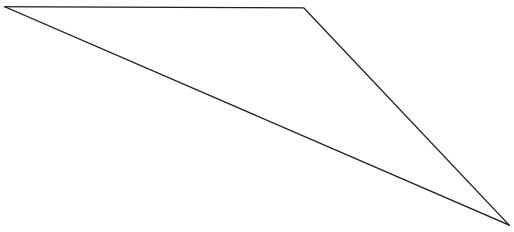

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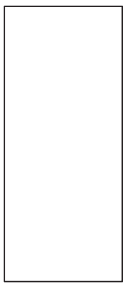

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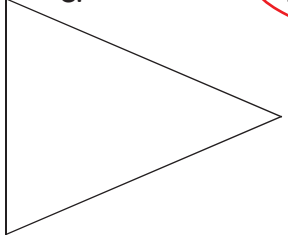


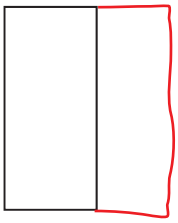
D. all of them

4. Half of a collection of shells was four shells. How many were in the collection?

   A. 1 B. 2 C. 4 D. 8

5. The following pictures show one half. Draw the whole.

Rectangle



Line

Lollies

add another 4 lollies

6. Is it possible to have three halves? Explain and draw a picture:

   Yes. 3 x 1/2 = one and a half (e.g. one and a half pizzas)

7. Rohan was four and a half. How old will he be on his next birthday?

   A. 8 B. 4 C. 5 D. 9

8. One quarter of a collection of shells was two shells. How many were in the collection?

   A. 8 B. 4 C. 6 D. 10

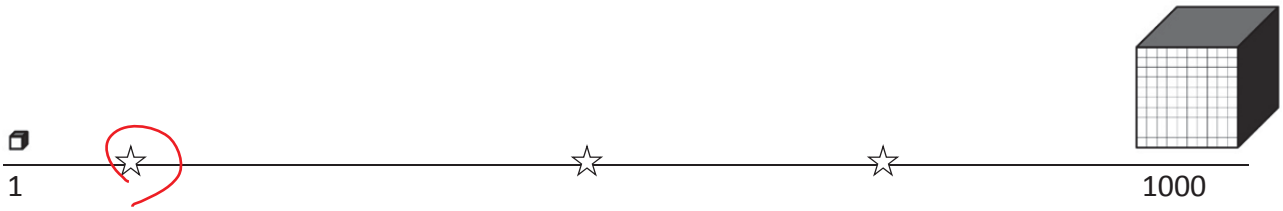
9. Some chocolate is shown below. Colour one quarter of the chocolate.

Day 7: Place value and three digit numbers:

1. Which of the following numbers is not the same as 284?

Hundreds blocks	Tens blocks	Ones blocks
2	8	4
1	18	4
1	17	14
2	0	84
2	1	74
2	80	4

2. These blocks are MAB. The numbers that represent them are written below. Colour the star that shows where the number 100 should go.



3. Circle which number each of the following is closest to:

A.	678	600	650	700
B.	345	300	350	400
C.	309	300	350	400
D.	271	200	250	300

4. I have 4 hundreds, 39 tens and 16 ones. What should I do to it to make it close to 500?
   A. Take off 300
   B. Add 100
   C. Take off 250
   D. Halve it

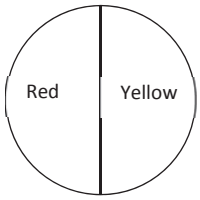
5. Use the following digits to make the biggest number that you can: 0, 3, 4 430

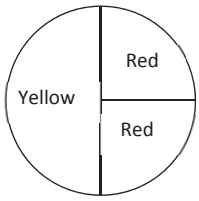
6. Now use the same three digits to make the smallest number that you can: 304

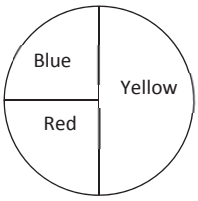
Day 8: Chance

1. Charlie rolled a six, then another six and then a four. Liam rolled a 2 and then a 4 and then a 5. Who should roll next if they want a high number?
   A. Charlie
   B. Liam
   C. Either of them

2. The spinners below were used by players in a game. Which colour has the best chance of winning altogether?



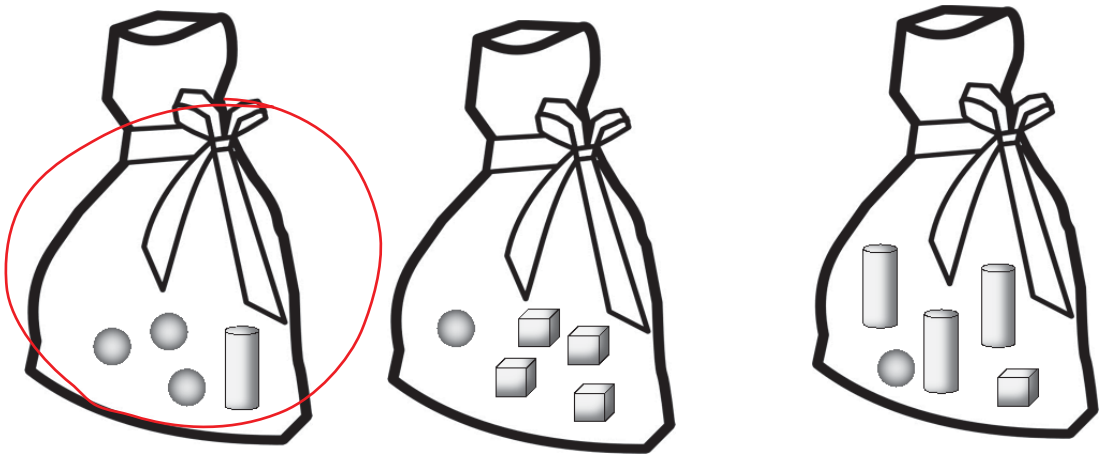




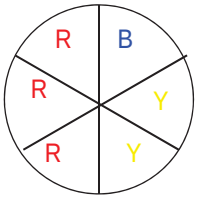
A. Blue B. Red C. Yellow D. They are equal

3. Jenny drew out one shape from a bag, noted its colour, and then replaced it before drawing another. Here are her results:

Which of the following bags could NOT be the bag she was using?



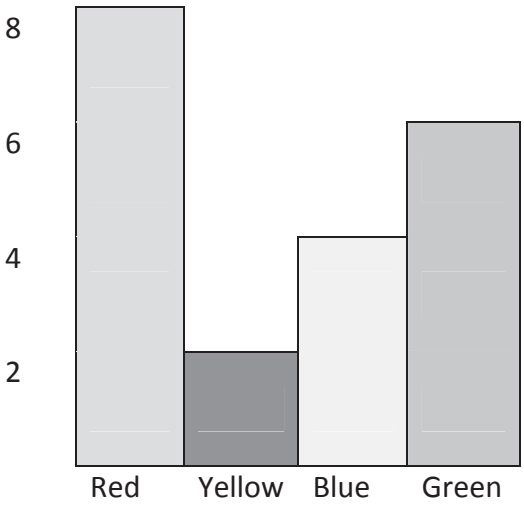
4. Draw the colours Red, Yellow and Blue on the spinner so that Red has the greatest chance of winning and blue has the least chance of winning.

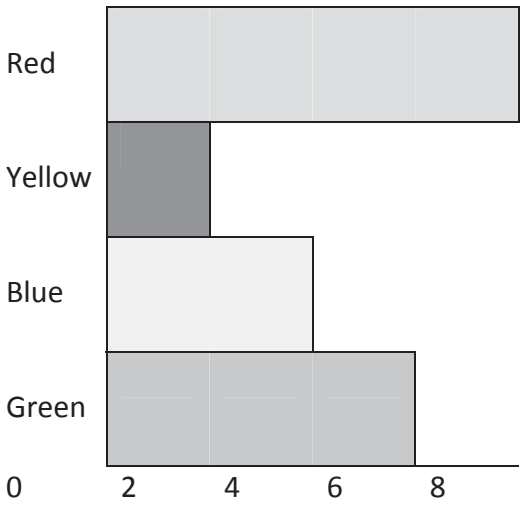


Red has to have 3 parts and Blue 1

Day 9: Data

Our favourite colours:





Which colour is your favourite?	Tally marks	Total
Red	𝍸 III	8
Yellow	II	2
Blue	IIII	4
Green	𝍸 I	6

Questions:

1. Which colour was most popular? Red

2. How many children chose this colour altogether? 8

3. How many children were surveyed altogether? 20

4. How many children chose blue or green? 10

5. What colours did half the children choose?

   Red and yellow, or Blue and Green

The following data was collected by a grade 4 class about what pets students had. Use the tally chart to work out which picture graph is the right one to include.

Our pets: Which of the following pets do you have?

Cats: 𝍸 𝍸 III 13

Dogs: 𝍸 𝍸 𝍸 𝍸 20

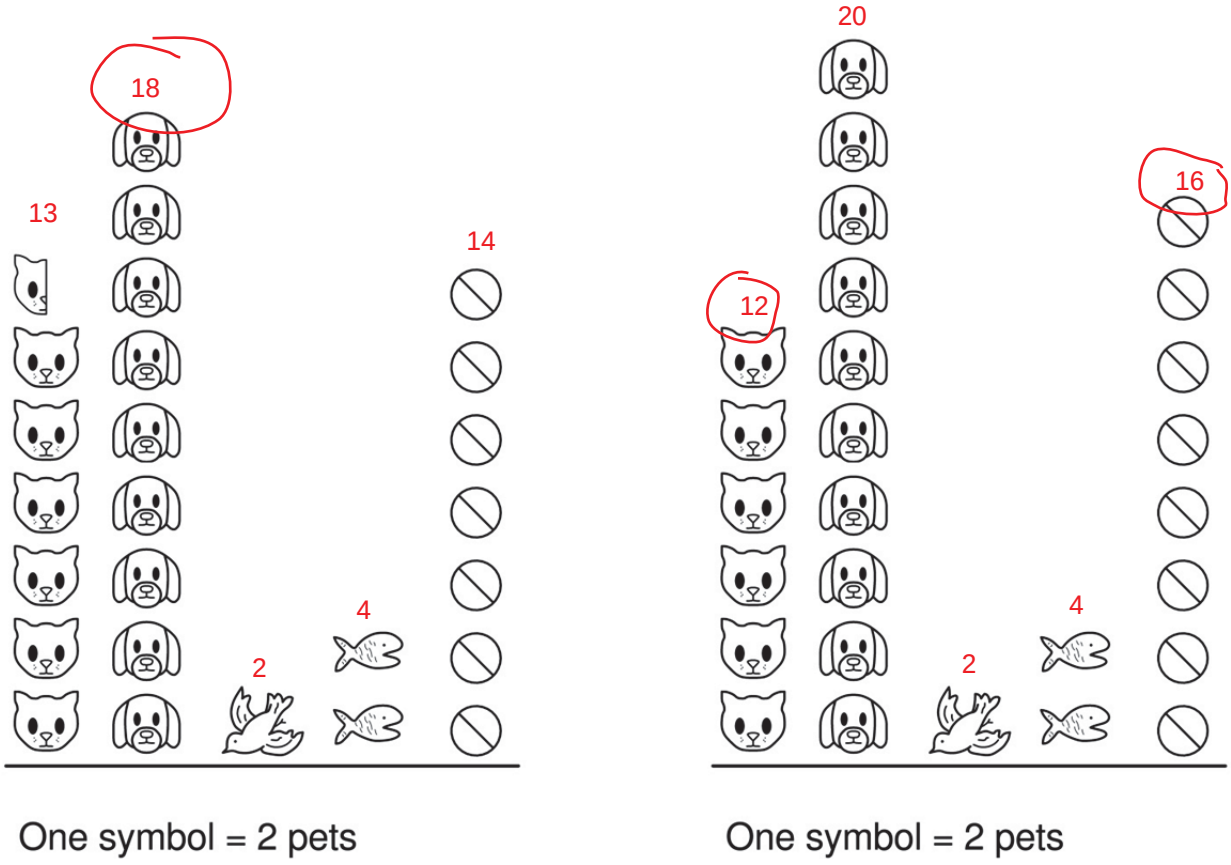
Birds: II 2

Fish: IIII 4

None: 𝍸 𝍸 IIII 14

Both graphs are incorrect.

Which of the following picture graphs is correct?



One symbol = 2 pets

One symbol = 2 pets

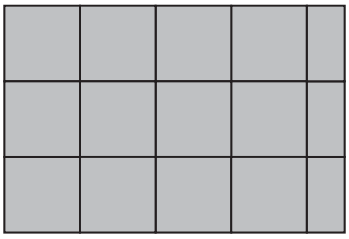
1. Which do you think is correct? Explain your answer:

2. 47 children took the survey. What problem do you find? How might you explain the results?

Some kids had more than one pet

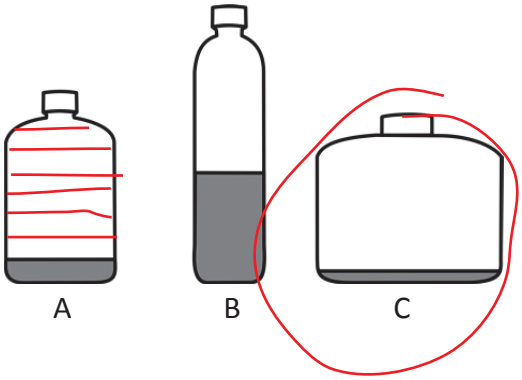
Day 11: Measuring length, area and volume:

1. Samantha put carpet squares on the floor of her bedroom like this. How many carpet squares did she have to buy to cover her bedroom floor?



13.5 squares (or could have bought 14 squares and had half a square free)

2. These containers each have 1 cup of water in them. Which container will hold the most water?

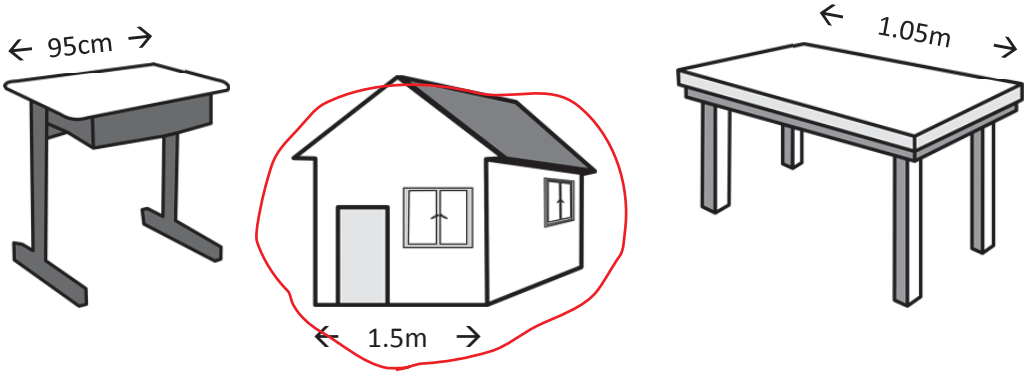


3. How many cups of water do you think the container on the left (A) will hold?

7-8 cups

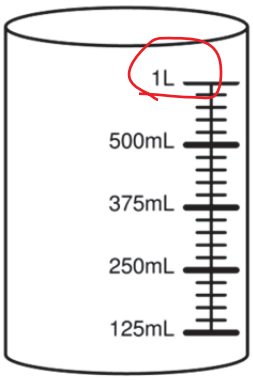
4. If you found that the length of your curtain was about as long as your arm, which measurement below would it be closest to?
   a. 10cm
   b. 50cm
   c. 1m

5. Look at the furniture below. Which would be the most difficult to fit through your classroom door?



6. For each of the measuring instruments below, which gradation is wrong? Why?

Both 5cm and 10cm



Day 12: Time

1. Fill in the blank calendar for this month. It starts with Friday the 1st of April.

April						
S	M	T	W	TH	F	S
					1	2
3	4	5	6	7	8	9
				14		
				21		
				28		

Finish at 28

2. I have a meeting on every second Tuesday. If one meeting is on Tuesday 6th December, what is the date of the next meeting? What is the date of my previous meeting?

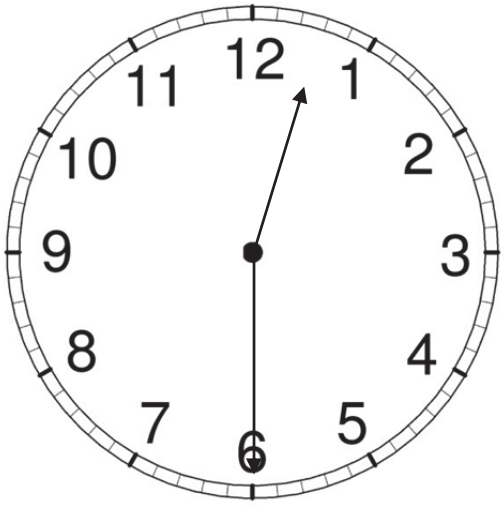
Next meeting - 20/12
Previous meeting - 22/11

3. Bella's school concert went for 2 hours and finished at half past 8. She arrived at the concert a quarter hour before the concert started. What time did Bella arrive at the concert?

6.15

4. If I needed to leave the house at 12:30, but wanted an alarm to go off 30 minutes before I left, what time would I set the alarm for? Draw it:

5. Paul's dad needs to leave home **45 minutes before** school ends so that he gets to school in time to pick Paul up. School ends at 3 : 00pm. Look at the time on the clock below. How long does Paul's dad have before he has to leave?

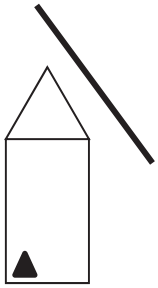


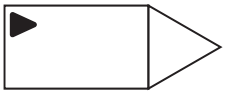
12:30 until 2: 15....
1 hour and 45 minutes

Day 13: 2D shapes and transformations

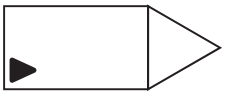
See also: fractions

1. Matthew made this shape then he flipped it over the line. What will his shape look like now?





A.



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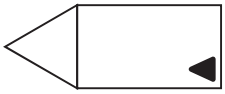

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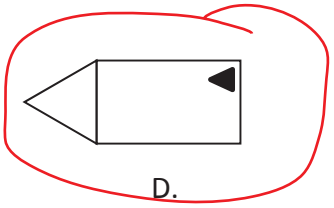
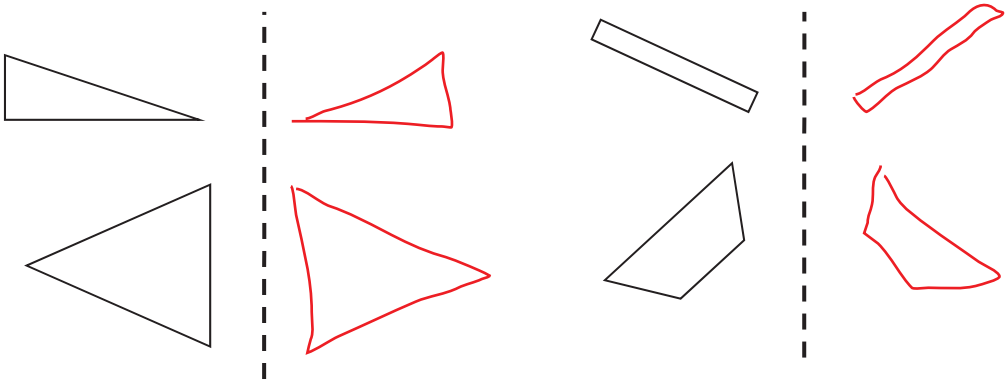
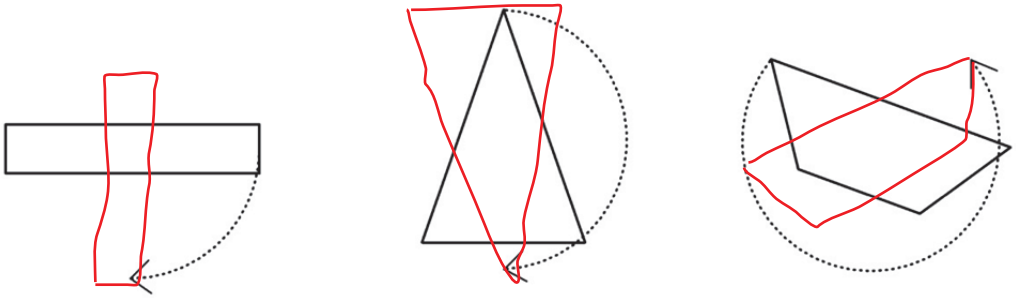


D.

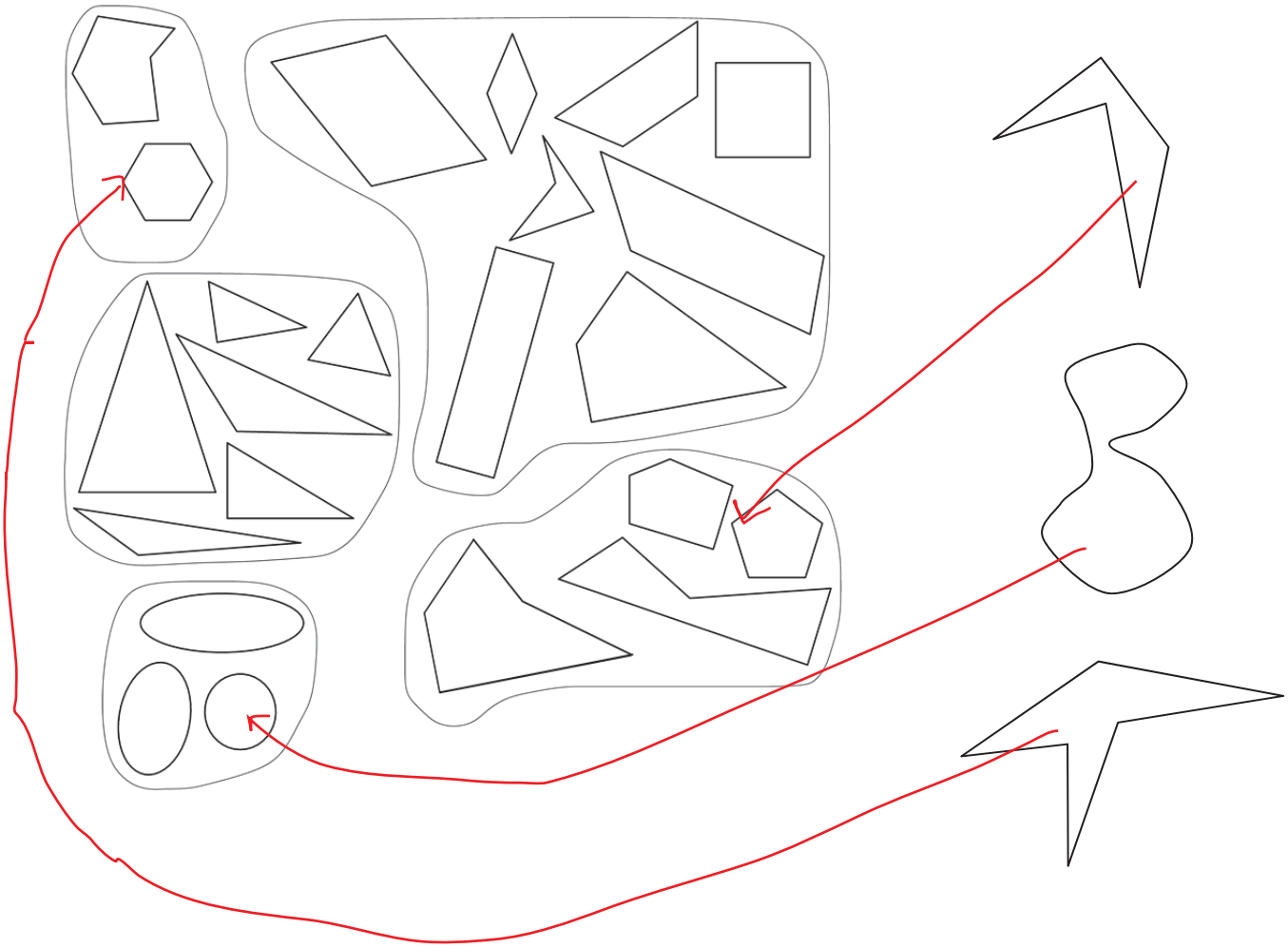
2. Draw what it would look like (roughly not exactly) if the following shapes were flipped over the dotted line. You can use a mirror to help if you are stuck.



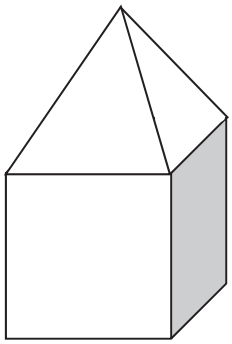
3. Draw what it would look like (roughly not exactly) if the following shapes were turned around along the dotted line:



4. Laura was making shape families. She left the following shapes out. Draw a line between each shape and its family.



Day 14: 3D shapes and transformations



1. Harrison made a new shape by gluing a pyramid onto a cube. How many faces does this new shape have?

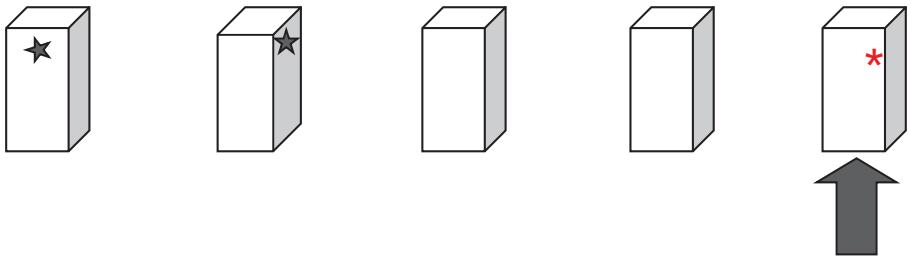
   9

2. How many edges does it have?

   12

3. Look at the pattern on the blocks below. The last block is missing its star. Where will the star go?

   Draw the star on the block.



4. Is it possible to make a cube with 5 faces?

   No

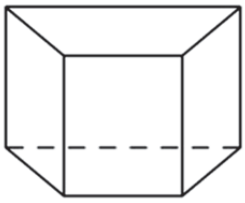
5. Is it possible to make a rectangular prism with all the faces the same?

   Yes - it's a cube

6. What 3D shape am I? I only have four faces, but they all the same.

   tetrahedron (all faces are equilateral triangles)

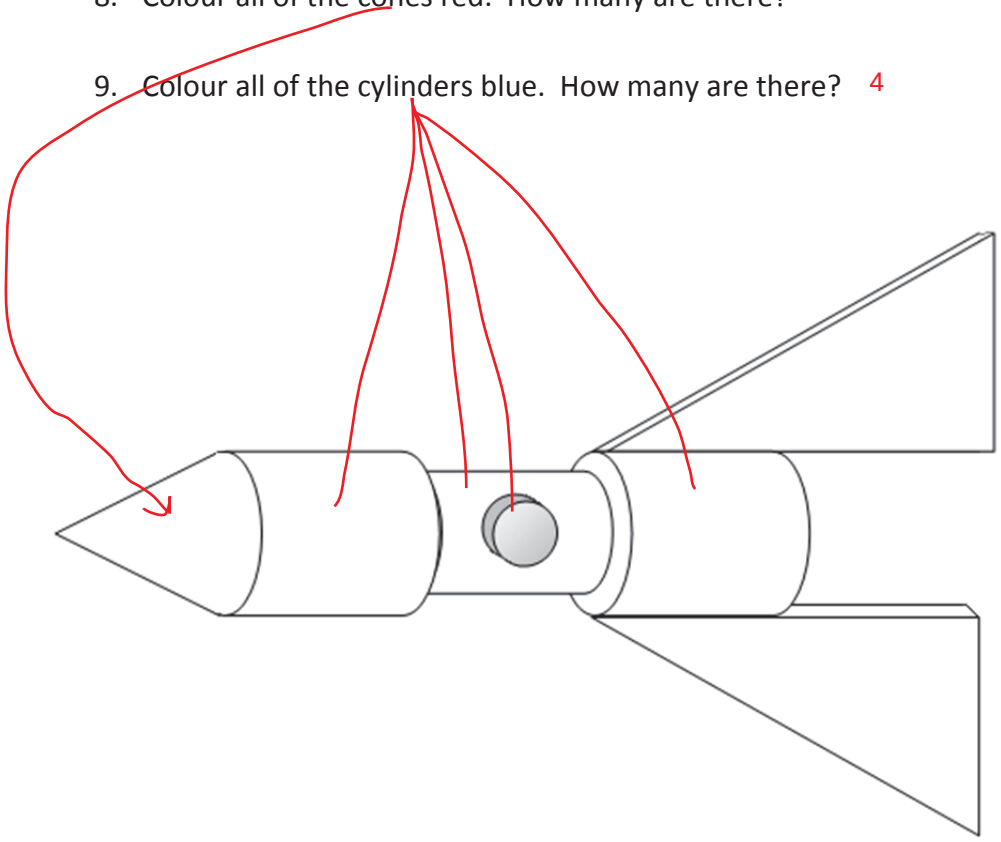
7. What type of shape is the following?



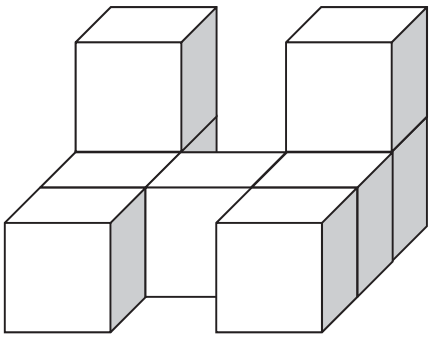
A. Pyramid B. Sphere C. Prism D. Trapezium

8. Colour all of the cones red. How many are there? 1

9. Colour all of the cylinders blue. How many are there? 4



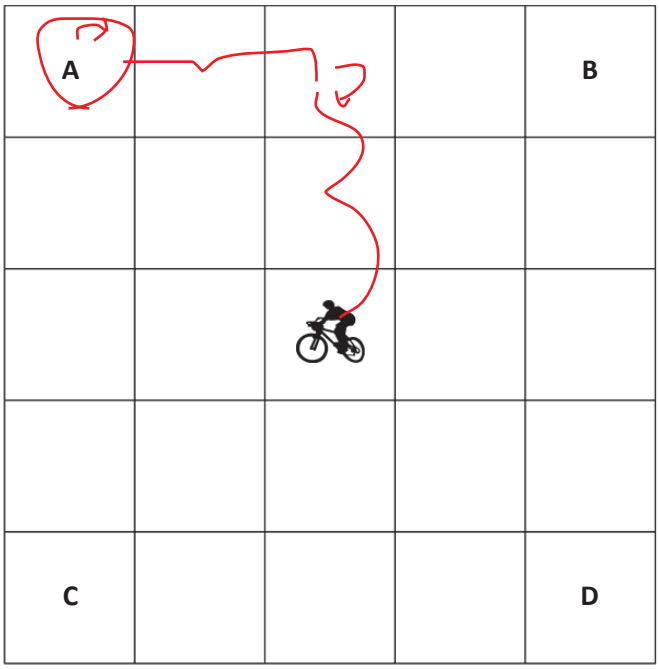
10. The shape below is made of cubes. How many cubes would be needed to make the shape?



9

Day 15: Maps and Directions

Mitchell started facing the top of the grid. Use these directions to work out where Mitchell was when he **started** his journey.



Directions:
Mitchell turned right and went forwards 2 squares.
He turned right again and walked forward 2 squares to get to the bicycle.

Which letter shows where he started?