

At-Home Investigation

Find 3 large containers. How could you find the capacity of each container?

Make your plan:

What instruments could I use to measure with?

Find any that you have at home and draw the one you are choosing to use for measurement.

Explain why you chose that one.



How will I make sure that I am measuring accurately?

Carry out your plan:

Measure your three containers. **How much does each one hold?**

Show what you did. Include any number sentences.

Apply your learning:

Compare the containers. Put them in order by how much they hold. Explain how you did it.

E6. Measure and estimate volumes

Sometimes we need to guess the volume of a container so that we know if our measurement is about right. Answer these questions using L and mL.

For measuring the volume of a glass of milk:

1. What instruments could you use to measure it?
2. Would you measure it in litres or millilitres or both? Why?
3. Have a guess: what do you think the volume will be? Why?
4. Choose an instrument and measure it. What did you get?
5. How good was your guess?

For measuring the volume of water needed to fill up a bucket:

1. What instruments could you use to measure it?
2. Would you measure it in millilitres or litres or both? Why?
3. Have a guess: what do you think the volume will be? Why?
4. Choose an instrument and measure it. What did you get?
5. How good was your guess?



For measuring the volume medicine in a dropper:

1. How could you use instruments to measure it?
2. What units would you use to measure it? Why?
3. Have a guess: what do you think the volume will be? Why?
4. Choose an instrument and measure it. What did you get?
5. How good was your guess?

How did you decide whether to use litres or millilitres or both?

How did you measure things that would not fit into cup measures?

BACKWARDS QUESTION:

Your soccer team had a drinks cooler for the team to use. How could you work out if the cooler holds enough water for everyone to have 2 cups full?

Multiplication and division practice grids:

x	2	6	4	3	9	7	8	5	10
2									
3									
4									
5									
6									
7									
8									
9									
10									

x	4	8	7	2	3	9	10	6	5
9									
3									
6									
5									
2									
7									
4									
8									
10									

÷									
		16					6		
			21		15				
						8		40	
	20			30					
			42						54
					35		21		
		64		48					
	36								81
						20		100	

÷									
		27							30
			6				4		
	40							25	
				24		36			
	56			28					
					63			45	
						60			100
		36					8		
			48		56				

PROBLEM 17: WHICH IS THE BIGGEST?

You have been given 4 shapes to make out of MAB. Your job is to work out which one is the biggest, using the different criteria stated below.

Shape 1: Base length: 4 MAB, Base width: 2 MAB, Height: 5 MAB

Shape 2: Base length: 5 MAB, Base width: 2 MAB, Height: 4 MAB

Shape 3: Base length: 3 MAB, Base width: 2 MAB, Height: 6 MAB

Shape 4: Base length: 4 MAB, Base width: 3 MAB, Height: 3 MAB



1. Which of the shapes is the biggest?

- Which is the tallest?
- Which is the widest?
- Which is the longest?
- Which are the same?
- So which is the biggest?

2. Is there a way that you could work out the answers to the four questions above without having to make the shapes out of MAB first? Explain how:

- Which is the tallest?
- Which is the widest?
- Which are the same?
- Which is the biggest?

3. If a doll was going on a plane and had a choice of taking four different suitcases with the same dimensions as the shapes above, which suitcase would you recommend? Why?

Simple manipulation problems:

4. If you made each of the shapes twice as high, how would the number of blocks change?

5. If you made each of the shapes twice as wide, how would the number of blocks change?

Communication:

How did you come up with your solution? What did you do to solve the problem?



Understanding:

What pattern or strategy did you find? How do you know that this is the right way to work out the solution?

Complex manipulation problem:

Level 1: If you made all of your shapes twice as long, twice as wide and twice as high, how many blocks would you need for each shape? Is there a way that you can work it out by using the calculations that you have already done?

Teacher initials:

Date:

Problem solving / T&R:

- Problem solved with minimal or non-mathematical prompting
- Some leading questions were used to prompt thinking
- Solved after explanation
- Did not work out solution
- N/A- not a novel problem

Reasoning / Comm.:

(verbal, written, working and equations, or visual representations)

- Clearly and logically reasoned
- Easily understood
- Understood with some interpretation needed
- Some gaps but on topic
- Minimal or off topic

Understanding / Reflect:

- Connected manipulation problems to previous questions and answered easily
- Connected manipulation problems to previous questions with some prompting, and answered correctly
- Answered once the similarities to previous questions had been pointed out
- Had some problems in answers but was on the right track
- Did not answer appropriately
- Student not observed

Interleaved practise

Year 4, week 6

Number:

1. Write the pattern that matches this description: write the multiples of 6 beginning with 6 until you get to 6×10 .

2. Write a 3-digit odd number here Write a 3-digit even number here
If you added them together, would the answer be odd or even? Explain the reason for your answer.

3. Write this number on the place value chart: **Fourteen thousand and fifty**

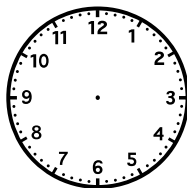
Ten-Thousands	Thousands	Hundreds	Tens	Ones

4. Draw an array for 4×9 . Show how you worked out how many there are.
5. This rectangle shows a quarter of a chocolate bar. Draw what the whole chocolate bar would look like. Find 2 different ways to do it.



Measurement/Geometry:

6. It's now 23 minutes past 2. Draw the hands on the clock to show what time it will be in 15 minutes.



7. List 3 things you would measure in metres:

List 3 things you would measure in centimetres:

8. How long is your foot? Estimate first and then measure.

My estimate _____ My measure _____

Chance/Data:

9. I rolled a 6-sided dice 25 times and these are the numbers that I rolled:
1, 3, 2, 5, 6, 3, 5, 3, 4, 1, 2, 1, 2, 3, 6, 4, 1, 6, 3, 5, 5, 1, 2, 4, 4
Use the blank graph to show the results of my experiment.

1	2	3	4	5	6

PROBLEM 20: MEASURING VOLUMES

A recipe is written below for 'Grade 4 Cordial Concoction'. Your job is to mix the cordial and answer the questions that follow.

Grade 4 Cordial Concoction Recipe:

5mL each of lemon cordial and lime cordial
10mL each of raspberry cordial and black currant cordial
220mL cold water



Questions:

1. How many millilitres of cordial will there be in the final mixture? Write a number sentence to show how to work it out.

2. How close is your measurement to what your answer should be? Explain:

Communication:

Describe how to make sure that your measurements are exact:

Understanding: Manipulation problems

Level 1: If you wanted to make 500mL of Cordial Concoction, how much would you need of each of the ingredients?

Level 2: If you used 20mL of lemon cordial, and made everything else bigger by the same ratio, how much Cordial Concoction would you make altogether? Explain:

Teacher initials:

Date:

Problem solving / T&R:

- Problem solved with minimal or non-mathematical prompting
- Some leading questions were used to prompt thinking
- Solved after explanation
- Did not work out solution
- N/A- not a novel problem

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