MATHEMATICS

Grade 4

TERM 3 2020

Formal Assessment

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GRADE 4 TERM 3 TEST

TIME: 1 HOUR **TOTAL: 25 MARKS**

NAME: _____

INSTRUCTIONS TO LEARNERS

1. Answer all the questions in the spaces provided
2. No calculators may be used

1. MULTIPLICATION BY 2-DIGIT MULTIPLIERS (6 MARKS)

a. Use the column method to find the answer to 143 × 25 = ☐

(3)

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b. Thuli is 19 years old.
Her grandfather is 4 times her age.
How old is Thuli's grandfather?

Write a number sentence for the calculation _____

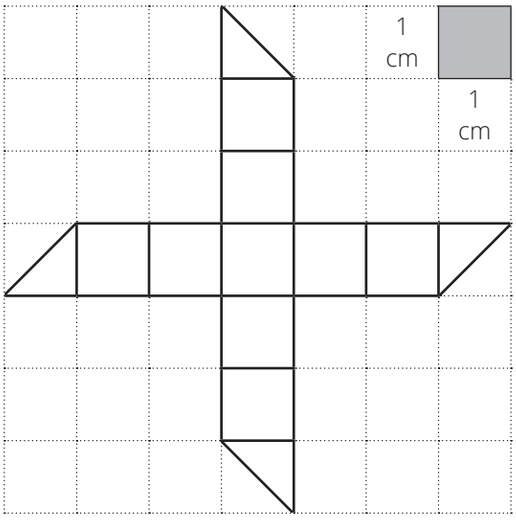
Do your calculation here:

Answer: Her grandfather is _____

(3)

2. AREA AND PERIMETER (7 MARKS)

a. Calculate the area of this shape:



Area = _____

(2)

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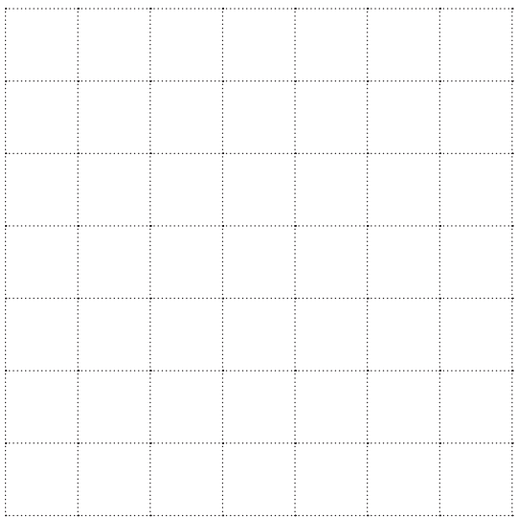
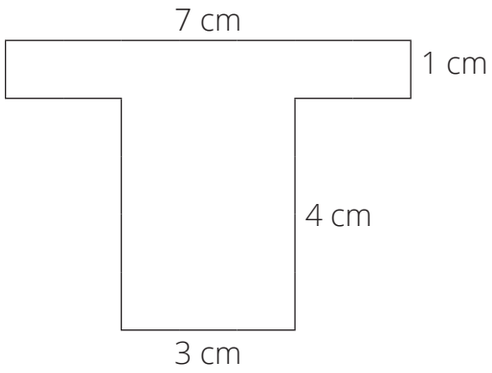
b. Draw a rectangle with a perimeter of 10 cm.



(2)

c. Find the area of this shape.



(3)

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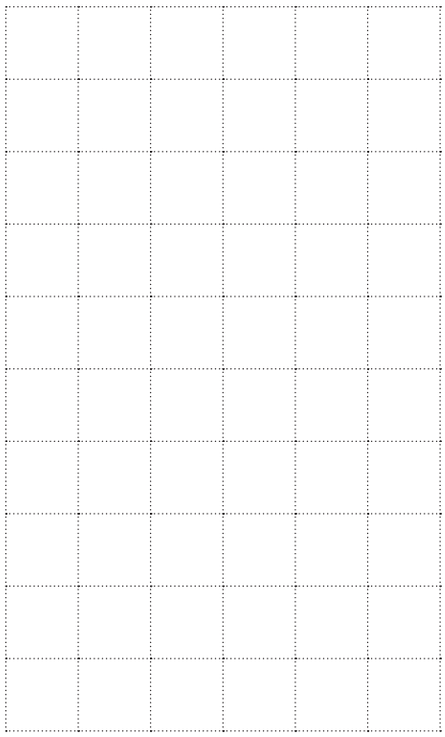
3. DIVISION (4 MARKS)

952 vetkoek were baked for a school.
The vetkoek were shared equally among the 7 grades in the school.
How many vetkoek will each grade get?

a. Write a number sentence for this calculation: _____ (1)

b. Do the calculation:



(2)

c. How many vetkoek will each grade get? _____ (1)

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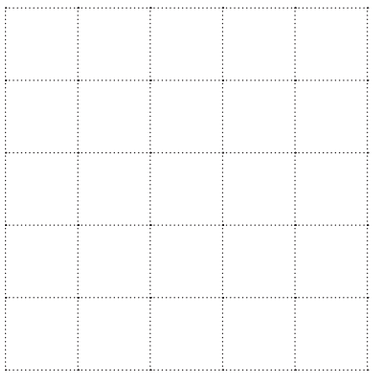
4. DECIMAL FRACTIONS (5 MARKS)

a. Write the common fraction as a decimal fraction and the decimal fraction as a common fraction:

$\frac{3}{10}$ = _____

0,25 = _____ (2)

b. Use the column method to find the answer to 4,23 – 1,94 = ☐



(3)

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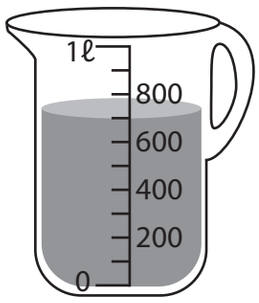
5. CAPACITY AND VOLUME (3 MARKS)

Siza put juice in this jug.



a. What is the capacity of the jug? _____ (1)

b. What is the volume of juice in the jug? _____ (1)

c. If I add 100 mℓ of juice to the jug, how much juice will now be in the jug?

(1)

TOTAL: 25 MARKS

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MEMO: GRADE 4 TERM 3 TEST

TIME: 1 HOUR **TOTAL: 25 MARKS**

			K	RP	CP	PS	TOT
1.	**a.**	Use the column method to find the answer to $143 \times 25 = \square$ Th H T O 2 1 1 4 3 × 2 5 1 7 1 5 ✓ 2 8 6 0 ✓ 3 5 7 5 ✓ NOTE TO THE TEACHER i. If learners don't write the "0" in the O column in the 2nd row of the answer, they still get 1 mark for that line. ii. The numbers that are carried do not necessarily have to be written down. If they are written down, the small carried numbers can be written anywhere. If learners can calculate mentally, that is fine. (3)		3			(6)
	b.	Thuli is 19 years old. Her grandfather is 4 times her age. How old is Thuli's grandfather? Write a number sentence for this calculation: $4 \times 19 = \square$ ✓ (1) Do your calculation here: T O 3 1 9 × 4 7 6 ✓ Answer: Her grandfather is **76** years old. ✓ (Mark allocated for correct answer AND unit) NOTE TO THE TEACHER: Learners can use a strategy of their choice. The do not have to use the column method. (3)		1	1		1	

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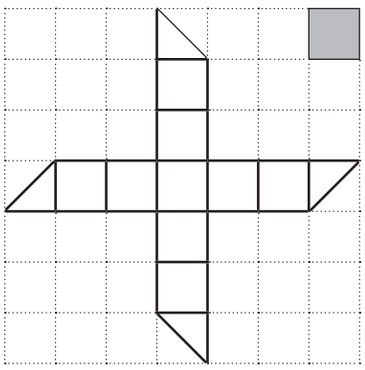
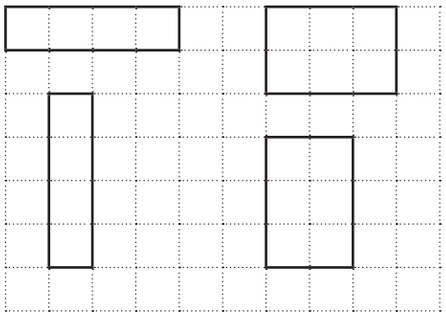
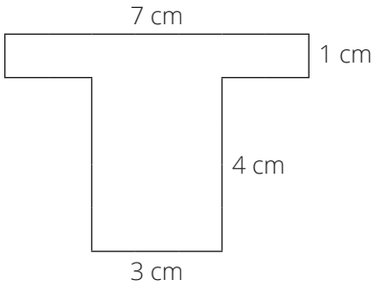
		K	RP	CP	PS	TOT
2.	**a.** Calculate the area of this shape:  Area = **<u>11 cm²</u>** ✓ ✓ (1 mark for 11 and 1 mark for cm²) (2)	2				
	b. Draw a rectangle with a perimeter of 10 cm. POSSIBLE ANSWERS: Rectangles with breadth and length of 2 and 3 or of 1 and 4, in any orientation.  ✓ ✓ for getting the perimeter correct (2)			2		(7)
	c. Find the area of this shape.  ✓ ✓ Area of shape = (7 × 1) + (3 × 4) = 7 + 12 = 19 cm² ✓ (this mark must only be given if the unit is given) (3)		1	2		

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		K	RP	CP	PS	TOT
3. a.	952 vetkoek were baked for a school. The vetkoek were shared equally among the 7 grades in the school. How many vetkoek will each grade get? Write a number sentence for this calculation: $952 \div 7 = \square$ ✓ (1)				1	(4)
b.	Do the calculation: H T O 1 3 6 7 | 9 5 2 – 7 2 5 – 2 1 4 2 – 4 2 0 ✓ ✓ for doing the division correctly (2)		2			
c.	How many vetkoek will each grade get? **136** ✓ vetkoek	1				
4. a.	Write the common fraction as a decimal fraction and the decimal fraction as a common fraction: $\frac{3}{10} = 0{,}3$ ✓(K) $0{,}25 = \frac{25}{100}$ or $\frac{1}{4}$ ✓(RP) (2)	1	1			(5)
b.	Use the column method to find the answer to $4{,}23 - 1{,}94 = \square$ O , t h 3 11 ~~4~~ , ~~2~~ $^{1}3$ – 1 , 9 4 2 , 2 9 ✓ ✓ ✓ (3)		3			

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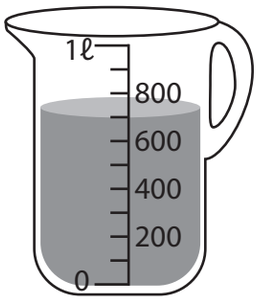
		K	RP	CP	PS	TOT
5. a.	Siza put juice in this jug.  What is the capacity of the jug? **1 ℓ or 1 000 mℓ** ✓ (Learners must include unit to get mark) (1)	1				(3)
b.	What is the volume of juice in the jug? **700 mℓ or 0,7 ℓ** ✓ (1)	1				
c.	If I add 100 mℓ of juice to the jug, how much juice will now be in the jug? The jug will hold **800 mℓ or 0,8 ℓ** ✓ (1)			1		
	Total Marks	**7**	**11**	**5**	**2**	**25**
	Percentage of the paper	**28**	**44**	**20**	**8**	**100**
	Prescribed percentage	(25)	(45)	(20)	(10)	**100**

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TERM 3 PROJECT

LEARNERS' NAMES:

_____

_____

_____

_____

DATE: _____

GRADE 4 TERM 3 INVESTIGATION RUBRIC

	4	3	2	1	Score
Maths Content Knowledge of • Length • Area • Perimeter • Capacity • Number patterns	Demonstrates knowledge of all 5 content items in the project	Demonstrates knowledge of 3-4 of the content items in the project	Demonstrates knowledge of 2 of the maths content items in the project	Demonstrates knowledge of 0-1 of the maths content items in the project	
Maths Skills Ability to • Measure length • Measure area • Measure perimeter • Estimate and measure capacity • Complete number patterns	Correctly applies all 5 maths skills in the project	Correctly applies 3-4 of the maths skills in the project	Correctly applies 2 of the maths skills in the project	Correctly applies 0-1 of the maths skills in the project	
Maths Communication	The group accurately communicates solutions to the problems	The group satisfactorily communicates solutions to problems	The group's communication of solutions to problems is limited	The group inaccurately communicates solutions to problems	
Presentations	The group's presentation is neat and clear	The group's presentation is not necessarily neat and clear	The group's presentation is difficult to read	The group presents solutions which the reader is unable to follow	
Use of Mathematics Terminology	Correctly uses appropriate terminology	Correct uses some mathematical terminology	Uses some mathematical terminology but not correctly	Does not use mathematical terminology	
Problem Solving	No errors when finding an object with a perimeter less than 30 cm and when working with patterns to answer questions about decorating biscuits	Few errors when finding an object with a perimeter less than 30 cm or when working with patterns to answer questions about decorating biscuits	Many errors when finding an object with a perimeter less than 30 cm or when working with patterns to answer questions about decorating biscuits	Little or no understanding when finding an object with a perimeter less than 30 cm and when working with patterns to answer questions about decorating biscuits	
				TOTAL	**24**

Teacher's Comments: _____

_____

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FINDING OUT

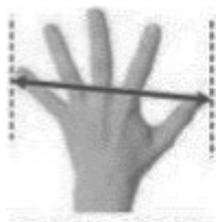
In this project you are going to do different 'finding out' activities.
You need to work through all of the activities given.
You need a ruler or tape measure.

1. Measuring Length

Work with your group of four learners.
You will need a ruler or tape measure.

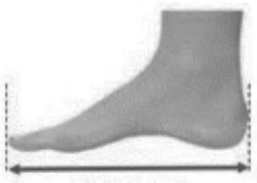
a. Measure the hand span of each person in your group. Write the measurements in the table below.

A **hand span** is the distance from the tip of your thumb to the tip of the little finger on your outstretched hand.



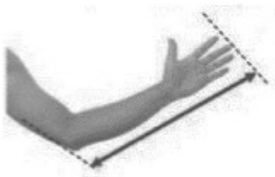
b. Measure the lengths of each person's foot. Write the measurements in the table.

In some countries in the world, a **foot** is used as a unit of measurement.



c. Measure the length of each person's cubit. Write the measurement in the table below.

In ancient times, the **cubit** was used for measuring. The cubit is the length of the arm from the elbow to the tip of the middle finger.



	Measurement in cm.		
Name	**Hand span**	**Foot**	**Cubit**

Display your collection of real data so that the rest of the class can compare their measurements to yours.

Who has the greatest hand span in the class? _____

Who has the shortest hand span in the class? _____

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2. Measuring an area of 1 m²

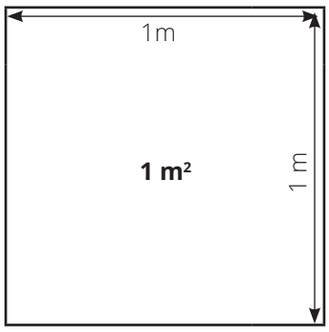
Work with your group. You will need:

- a few sheets of newspaper
- sticky tape or glue
- a metre measure
- a pair of scissors.

a. Stick the sheets of newspaper together.

Use the metre stick to measure a square with 1 metre sides.

Carefully cut the square out.



b. Use your square to measure two things or parts of things around you that have an area of one square metre.

Write down what you found:

Where I found things that measure 1 square metre (1 m²)	
1.	
2.	

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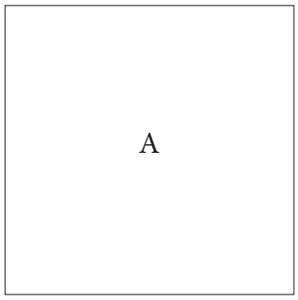
3. Measuring perimeter

Work with your group.
You will need rulers and a piece of string or wool that is 30 cm long for measuring length.

a. Measure and calculate the perimeter of each of these shapes.
Then say which shape has the longest perimeter.



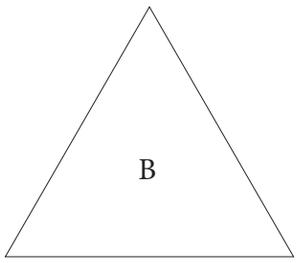
Perimeter

_____

_____

_____

_____



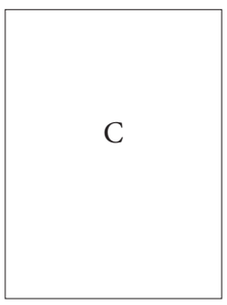
Perimeter

_____

_____

_____

_____



Perimeter

_____

_____

_____

_____

Shape _____ has the longest perimeter.

b. Use your piece of wool or string to find something in the classroom that has a perimeter of less than 30 centimetres.

Write down what you found: _____

What is its perimeter? _____

_____

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4. Measuring capacity

Work with your group. You will need:

- 3 different empty containers, labelled 1, 2 and 3
- A measuring jug
- A bottle of water

a. Without measuring, Learner 1 should pour water into each of the three containers. Don't fill the containers completely.

b. All members of the group should estimate the volume of water in millimetres in each container. Write the estimate in the table.

c. A different learner should pour the water out of Container 1 into the measuring jug and measure the volume of water in it. Write the answer in the table.

d. A different learner should pour the water out of Container 2 into the measuring jug and measure the volume of water in it. Write the answer in the table.

e. A different learner should pour the water out of Container 3 into the measuring jug and measure the volume of water in it. Write the answer in the table.

	Volume in litres and/or millilitres				
	Estimate of Learner 1	**Estimate of Learner 2**	**Estimate of Learner 3**	**Estimate of Learner 4**	**Actual Measurement**
Container 1					
Container 2					
Container 3					

Which learner's estimates were closest to the actual volume?

_____

ASSESSMENT

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5. Decorating biscuits

Work with your group to answer the following:

Andile baked 20 biscuits for a party.
He wanted to decorate the biscuits, so he put the biscuits in a line.

- He put icing on every second biscuit.
- He then put a cherry on every third biscuit.
- Then he put a piece of chocolate on every fourth biscuit.

Decide on how you are going to work out the answers to the questions below. Do your working out here:

a. Which biscuits have icing on them?

_____

b. Which biscuits have a cherry on them?

_____

c. Which biscuits have a piece of chocolate on them?

_____

d. There was nothing on the first biscuit. How many other biscuits had no decoration on them?

_____

e. Did any biscuits get all three decorations?

_____

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MEMO: FINDING OUT

HINTS FOR THE TEACHER

STEP 1: Be aware of WHAT assessment is.

The following extract comes from the Mathematics Teaching and Learning Framework for South Africa: Teaching Mathematics for Understanding (page 76)

According to the CAPS, assessment is a continuous planned process of identifying, gathering and interpreting information about the performance of learners, using various forms of assessment.

Assessment involves four steps:

1. generating and collecting evidence of achievement;
2. evaluating this evidence;
3. recording the findings and
4. using this information to understand and thereby assist the learner's development in order to improve the process of learning and teaching.

In line with the framework, assessment should be more than just summative – it should be undertaken for diagnostic, formative or summative purposes and it should be both informal and formal. Whatever the nature of an assessment, regular feedback should be provided to learners to enhance the learning experience.

STEP 2: Make sure you know what a Project is.

According to the Intermediate Phase CAPS (page 295), Projects are used to assess a range of skills and competencies.

- Through Projects, learners are able to demonstrate their understanding of different Mathematics concepts and apply them in real-life situations.
- However, caution should be exercised not to give Projects that are above learners' cognitive levels.
- The assessment criteria should be clearly indicated on the Project specification and should focus on the Mathematics involved and not on duplicated pictures and facts copied from reference material.
- Good Projects contain the collection and display of real data, followed by deductions that can be substantiated.

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STEP 3: Decide on the group size
Take account of size of class and classroom, availability of resources and whether there is a need for social distancing.

STEP 4: Photocopy the six (6) pages of the Project for each learner or group of learners.

STEP 5: Prepare the equipment needed by each group of learners.

Question number	Topic	Equipment
1	Measuring Length	Ruler or tape measure
2	Measuring an area of 1 m^2	A few sheets of newspaper; sticky tape or glue; a metre measure; a pair of scissors
3	Measuring perimeter	A ruler (15 cm or 30 cm) A piece of string or wool that is 20 cm long.
4	Measuring capacity	Three different empty containers; a measuring jug showing millilitres and litres; a bottle of water
5	Decorating biscuits	Nothing

- If the learner does not have a 15 cm or 30 cm ruler, photocopy the templates at the back of this handout and cut them out for the learners to use. If possible, first stick the templates of the rulers on cardboard to make them last longer.
- If you don't have a metre measure, use the parts of a metre measure given on A3 paper, and stick one vertically against the classroom wall and stick one horizontally against the classroom wall. Make sure all the learners in the class can access these metre measures.

STEP 6: Discuss the Project with the learners.
Make sure the learners understand what they have to do for each question.

STEP 7: Go over the rubric with the learners.
Make sure the learners know how they work is going to be evaluated so that they can improve the quality of their work and revise it before handing it in.

STEP 8: Allow the learners to do the Project
Arrange the learners into the group size you have decided on.
Each group of four needs to hand in one copy of the project.

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STEP 9: Tell the learners when the work has to be handed in.
There are 6 days allowed in the curriculum for the project, but you can decide how much time you are going to allocate to the learners to do the project.

STEP 10: Mark the learners work

STEP 11: Use the rubric to analyse each group's solution and give each group a mark out of 24.
The analysis can be used to identify learners' errors and misconceptions and to inform teaching and learning.

STEP 12: Write a comment for each group to assist them with understanding what they have done correctly and what they have done wrong when completing the project.

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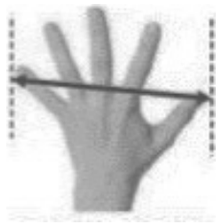
SOLUTION

1. Measuring Length

Work with your group of four learners.
You will need a ruler or tape measure.

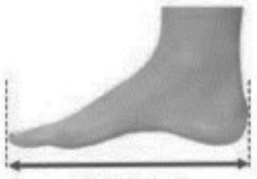
a. Measure the hand span of each person in your group. Write the measurements in the table below.

A **hand span** is the distance from the tip of your thumb to the tip of the little finger on your outstretched hand.



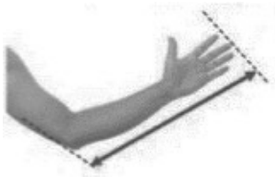
b. Measure the lengths of each person's foot. Write the measurements in the table.

In some countries in the world, a **foot** is used as a unit of measurement.



c. Measure the length of each person's cubit. Write the measurement in the table below.

In ancient times, the **cubit** was used for measuring. The cubit is the length of the arm from the elbow to the tip of the middle finger.



	Measurement in cm.		
Name	**Hand span**	**Foot**	**Cubit**
	Answers will differ. An adult hand span is about 20 cm. Learner's hand spans should range between 14 cm and 16 cm	***Answers will differ. An adult foot is about 30 cm. Learner's feet should range between 16 cm and 25 cm***	***Answers will differ. An adult cubit is about 46 cm. Learner's cubits should range between 25 cm and 35 cm***

Display your collection of real data so that the rest of the class can compare their measurements to yours.

Who has the greatest hand span in the class? ***Answers will vary here.***

Who has the shortest hand span in the class? ***Answers will vary here.***

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2. Measuring an area of 1 m^2

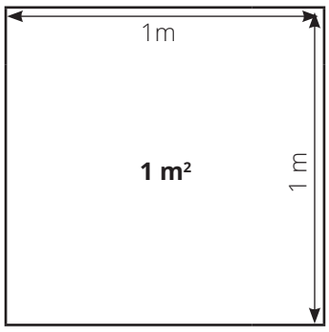
Work with your group. You will need:

- a few sheets of newspaper
- sticky tape or glue
- a metre measure
- a pair of scissors.

a. Stick the sheets of newspaper together.

Use the metre stick to measure a square with 1 metre sides.

Carefully cut the square out.



b. Use your square to measure two things or parts of things around you that have an area of one square metre.

Write down what you found:

Where I found things that measure 1 square metre (1 m^2)	
1.	***e.g. a certain number of tiles in a paved area***
2.	***e.g. a portion of a door or window***

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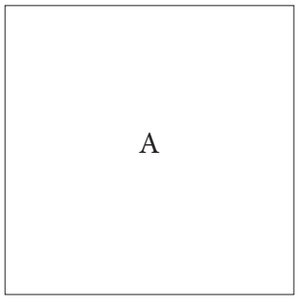
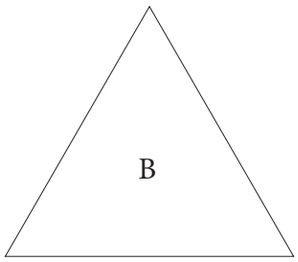
3. Measuring perimeter

Work with your group.
You will need rulers and a piece of string or wool that is 30 cm long for measuring length.

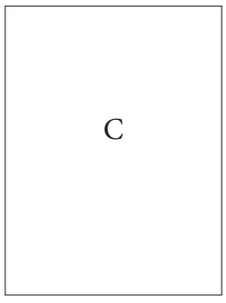
a. Measure and calculate the perimeter of each of these shapes.
Then say which shape has the longest perimeter.



Perimeter = ***16 cm***



Perimeter= ***12 cm***



Perimeter= ***14 cm***

Shape **A** has the longest perimeter.

b. Use your piece of wool or string to find something in the classroom that has a perimeter of less than 30 centimetres.

Write down what you found: ***Answers will differ. Examples of objects with a perimeter of less than 30 cm are a small packet of tissues, some pencil boxes or pencil bags, a small notebook.***

What is its perimeter?
Answers will differ here but check that the perimeter is less than 30 cm.

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4. Measuring capacity

Work with your group. You will need:

- 3 different empty containers, labelled 1, 2 and 3
- A measuring jug
- A bottle of water

a. Without measuring, Learner 1 should pour water into each of the three containers. Don't fill the containers completely.

b. All members of the group should estimate the volume of water in millimetres in each container. Write the estimate in the table.

c. A different learner should pour the water out of Container 1 into the measuring jug and measure the volume of water in it. Write the answer in the table.

d. A different learner should pour the water out of Container 2 into the measuring jug and measure the volume of water in it. Write the answer in the table.

e. A different learner should pour the water out of Container 3 into the measuring jug and measure the volume of water in it. Write the answer in the table.

	Volume in litres and/or millilitres				
	Estimate of Learner 1	**Estimate of Learner 2**	**Estimate of Learner 3**	**Estimate of Learner 4**	**Actual Measurement**
Container 1					
Container 2	***Answers will vary here.***				
Container 3					

Which learner's estimates were closest to the actual volume? ***Answers will vary here.***

ASSESSMENT

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5. Decorating biscuits

Work with your group to answer the following:

Andile baked 20 biscuits for a party.
He wanted to decorate the biscuits, so he put the biscuits in a line.

- He put icing on every second biscuit.
- He then put a cherry on every third biscuit.
- Then he put a piece of chocolate on every fourth biscuit.

Decide on how you are going to work out the answers to the questions below. Do your working out here:

Here is one solution

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

a. Which biscuits have icing on them?

2nd, 4th, 6th, 8th, 10th, 12th, 14th, 16th, 18th, 20th (i.e. all the even numbers)

b. Which biscuits have a cherry on them?

3rd, 6th, 9th, 12th, 15th, 18th (i.e. the multiples of 3)

c. Which biscuits have a piece of chocolate on them?

4th, 8th, 12th, 16th, 20th (i.e. the multiples of 4)

d. There was nothing on the first biscuit. How many other biscuits had no decoration on them?

6 other biscuits (the 5th, 7th, 11th, 13th, 17th, 19th biscuits – these are odd numbers but are not all the odd numbers)

e. Did any biscuits get all three decorations?

Yes – the 12th biscuit (12 is the only multiple of 2, 3 and 4 up to and including 20)

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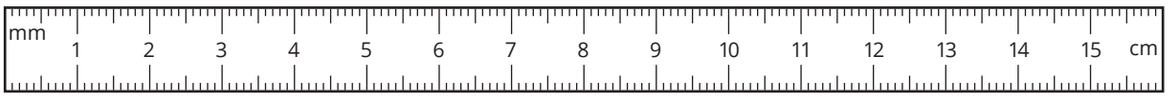
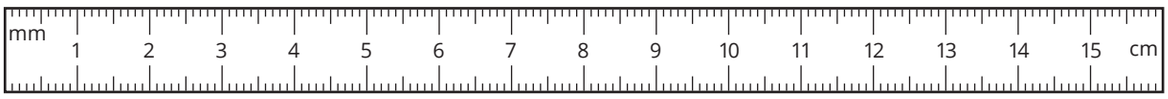
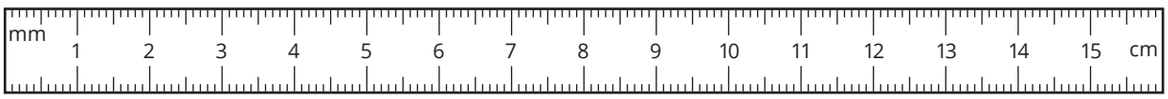
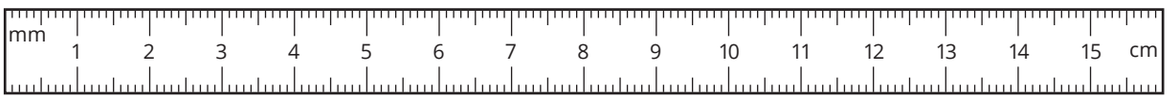
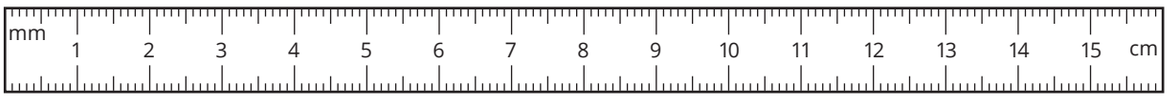
TEACHER RESOURCES

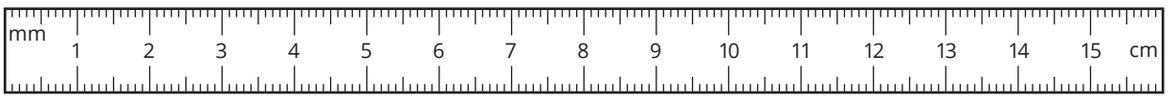


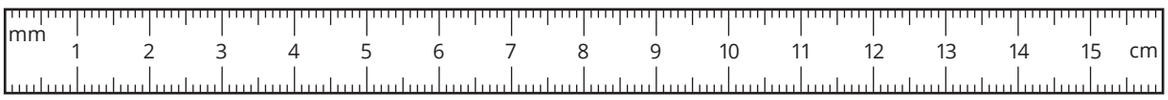


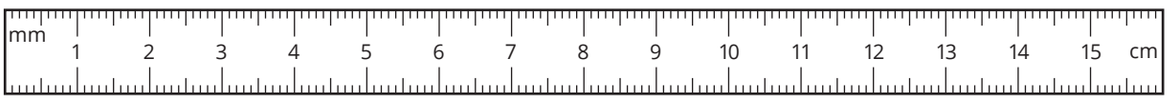


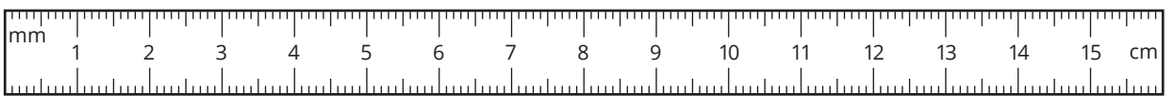


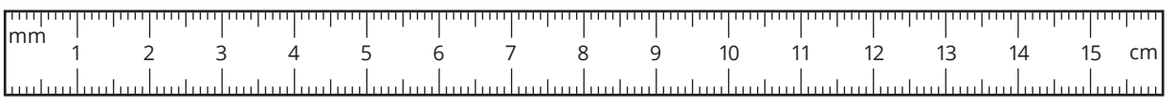


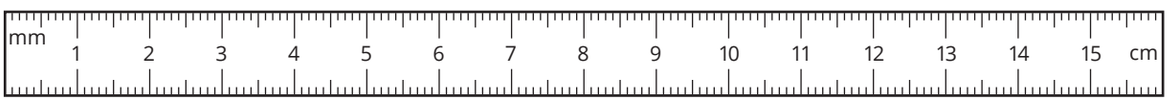


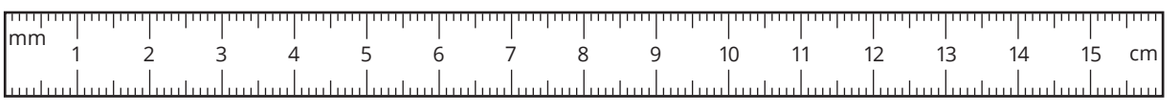


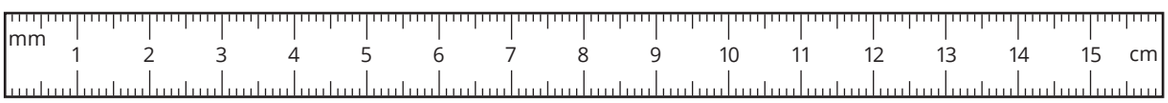


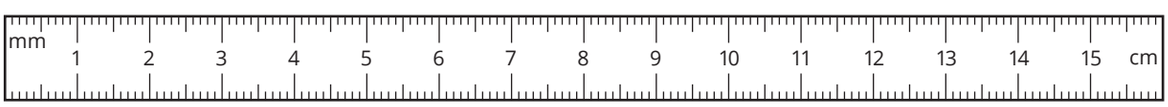












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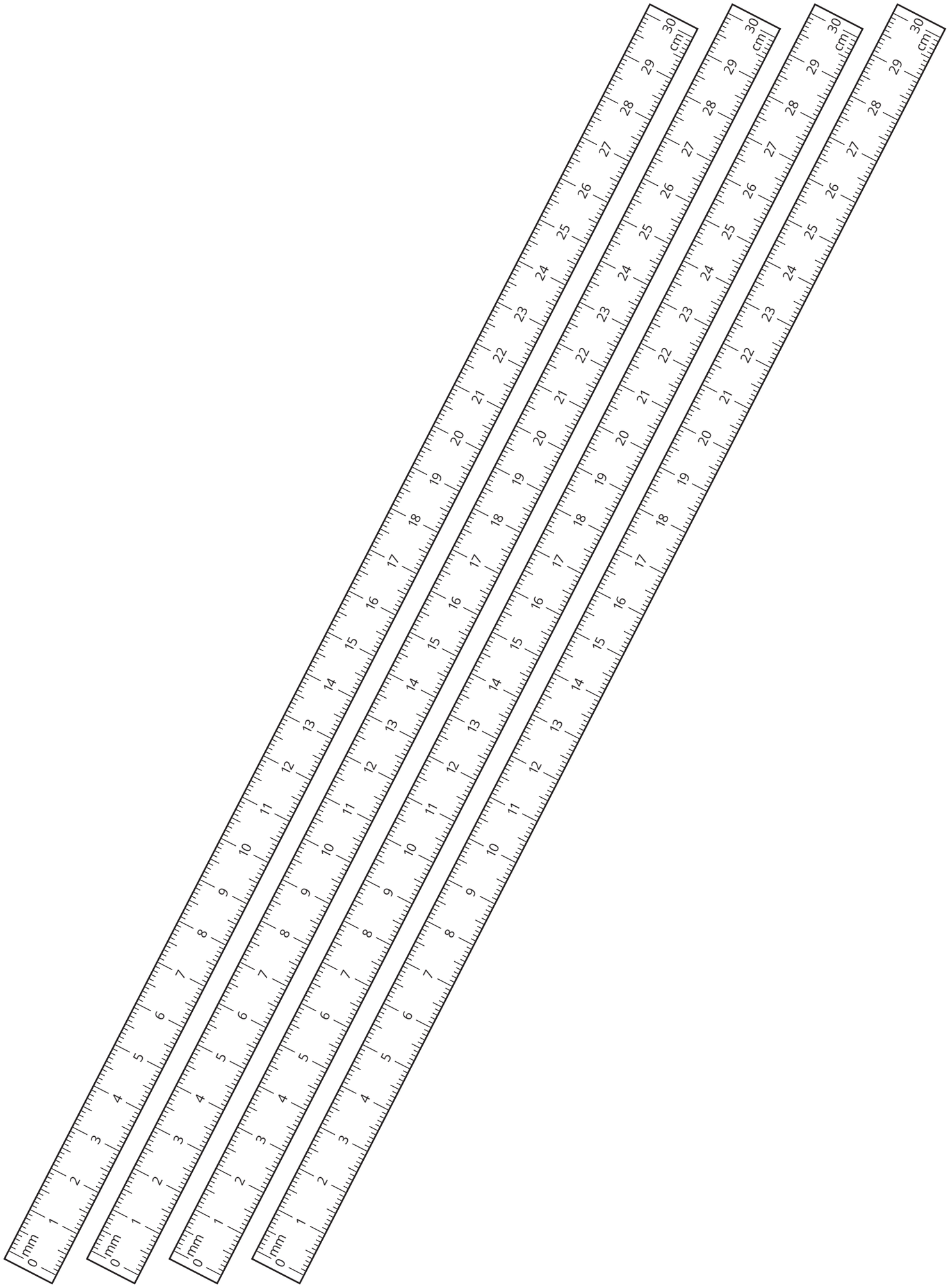

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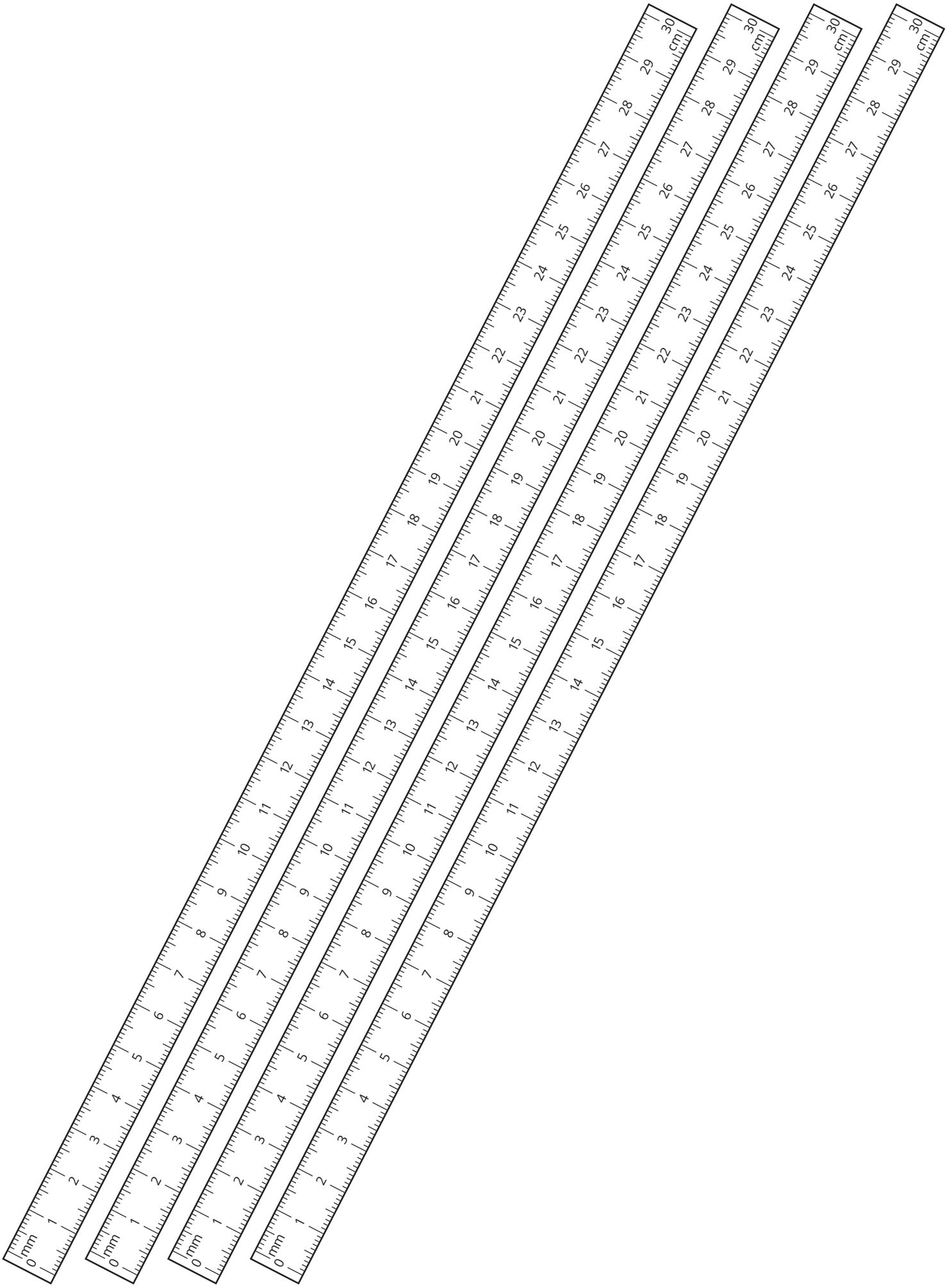

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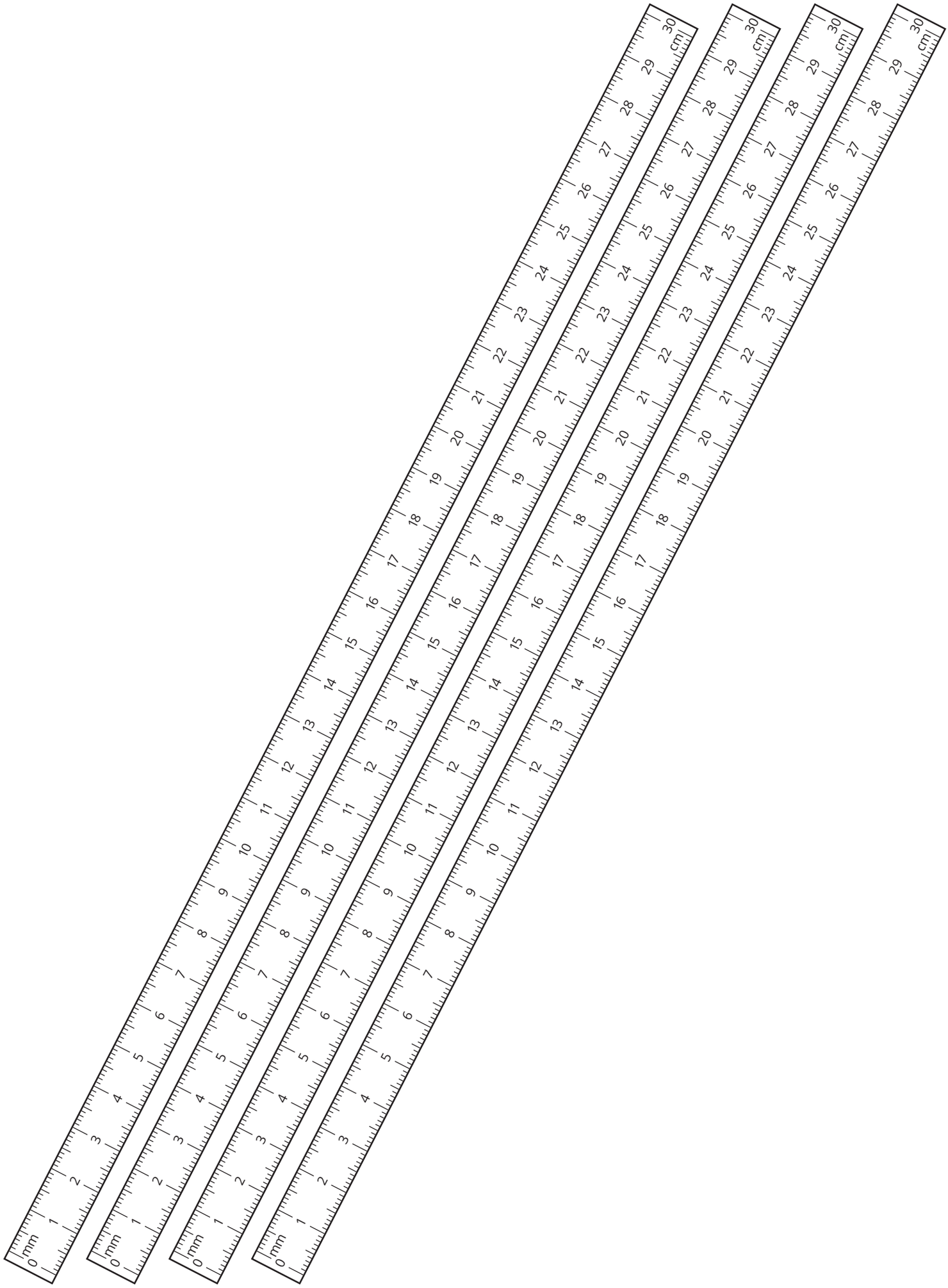

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