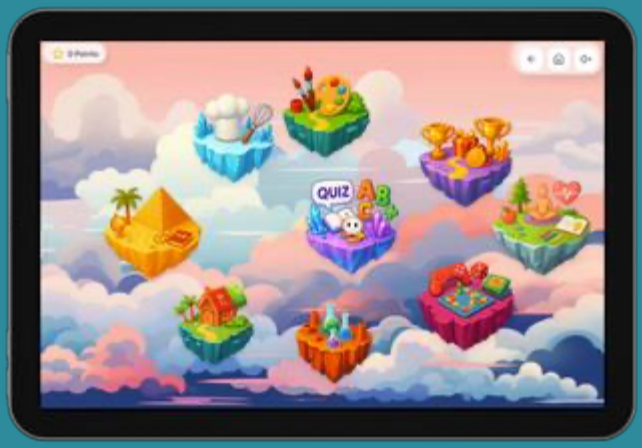

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Millimeters and Centimeters Yr3

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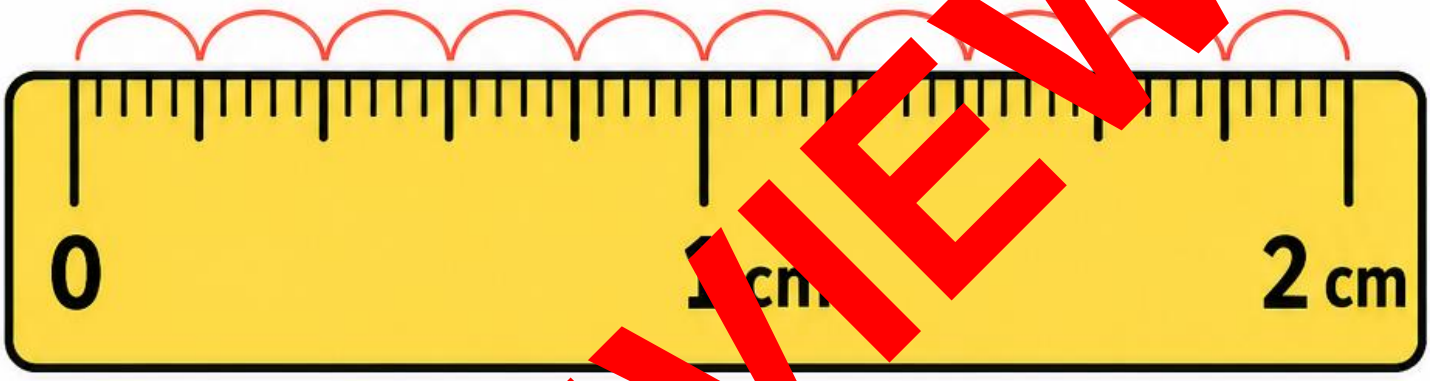
Metric Length at a Glance

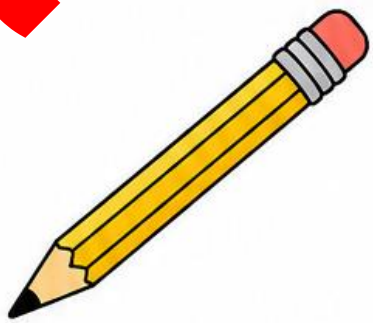
10 mm = 1 cm



Millimetres (mm)

tiny lengths and fine detail

Centimetres (cm)



many handheld objects

Metres (m)

larger lengths and distances

Choose the unit • Align the ruler • Read the endpoint • Record the unit

Choose the Unit

Cut out the cards. Read each object. Sort it under mm, cm or m. Explain your choice.

Millimetres (mm)	Centimetres (cm)	Metres (m)


coin thickness


ant length


paperclip wire thickness


[illegible] length


button thickness


pencil lead width


pencil length


book width


spoon length


eraser length

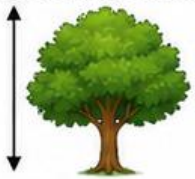

hand span


lunchbox width


door height


classroom width


skipping rope length


tree height


hallway length


car length

Use the unit that best matches the size of the object.

Metric Match-Up

Remember:
10 mm = 1 cm

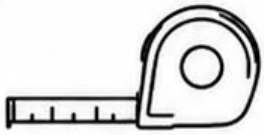
Cut out the cards. M h each centimetre card to the same length in millimetres.
en o der the pairs from shortest to longest.

90 mm	4 cm	20 mm	11 cm	100 mm	2 cm
7 cm	60 mm	1 cm	120 mm	9 cm	30 mm
10 mm	12 cm	70 mm	3 cm	50 mm	6 cm
8 cm	110 mm	5 cm	80 mm	10 cm	40 mm

Challenge: Explain how you know 8 cm and 80 mm are equal.

Name: _____ Date: _____

Choose the Best Unit



Circle the best unit: mm, cm or m.

1.	thickness of a coin	mm	cm	m	**7.**	thickness of a button	mm	cm	m
2.	length of a pencil	mm	cm	m	**8.**	height of a chair	mm	cm	m
3.	height of a door	mm	cm	m	**9.**	length of a swimming pool	mm	cm	m
4.	length of an ant	mm	cm	m	**10.**	length of a grain of rice	mm	cm	m
5.	width of an exercise book	mm		m	**11.**	width of a lunchbox	mm	cm	m
6.	length of a classroom		m		**12.**	height of a tree	mm	cm	m

Think and explain

13. A pencil is about 18 mm, 18 cm or 18 m long. Circle the sensible estimate.

14. Why is metres a sensible unit for the length of a classroom?

_____

_____

_____

_____

Name: ANSWERS Date: _____

Choose the Best Unit

Circle the best unit: mm, cm or m.

1.	thickness of a coin	(mm)	cm	m	7.	thickness of a button	(mm)	cm	m
2.	length of a pencil	mm	(cm)	m	8.	height of a chair	mm	(cm)	m
3.	height of a door	mm	cm	(m)	9.	length of a swimming pool	mm	cm	(m)
4.	length of an ant	(mm)	cm	m	10.	length of a grain of rice	(mm)	cm	m
5.	width of an exercise book	mm	(cm)	m	11.	width of a lunchbox	mm	(cm)	m
6.	length of a classroom	mm	cm	(m)	12.	height of a tree	mm	cm	(m)

Think and explain

13. A pencil is about 18 mm, (18 cm) or 18 m long. Circle the sensible estimate.

14. Why is metres a sensible unit for the length of a classroom?

Metres match the room's large length and give a manageable number.

Name: _____ Date: _____

Read the Ruler

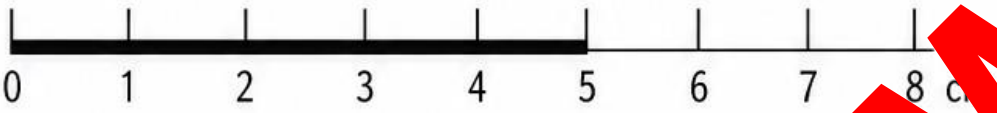
Read each endpoint carefully. Record the unit.

10 mm = 1 cm

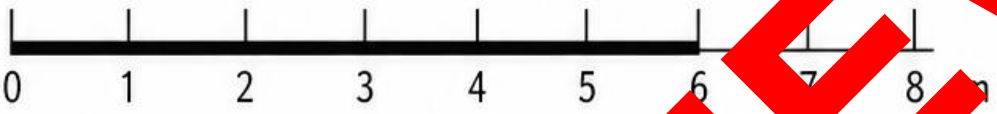
A. Read in centimetres

1. 

Length: _____ cm

2. 

Length: _____ cm

3. 

Length: _____ cm

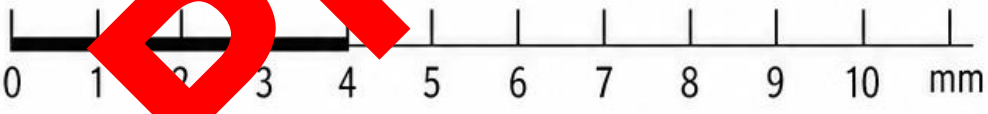
4. 

Length: _____ cm

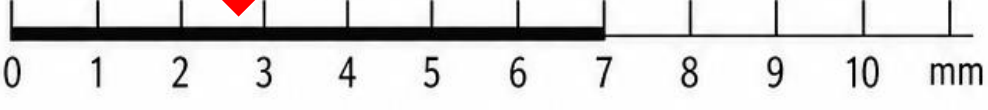
B. Read in millimetres

5. 

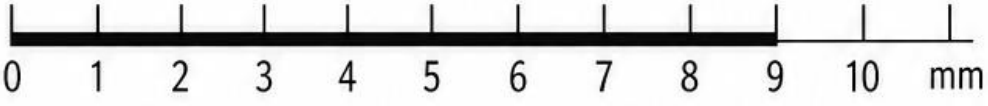
Length: _____ mm

6. 

Length: _____ mm

7. 

Length: _____ mm

8. 

Length: _____ mm

9. Why are millimetres useful for measuring tiny objects?

_____

_____

Name: ANSWERS Date: _____

Read the Ruler

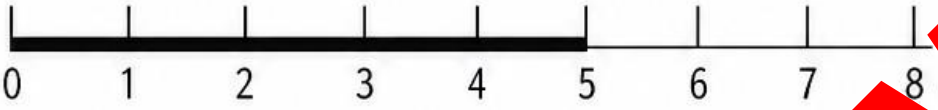
Read each endpoint carefully. Record the unit.

10 mm = 1 cm

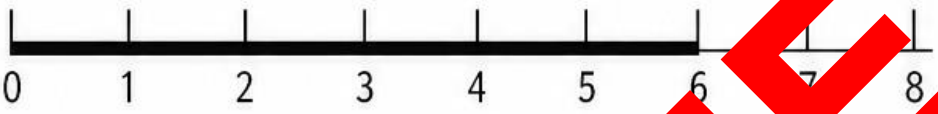
A. Read in centimetres

1. 

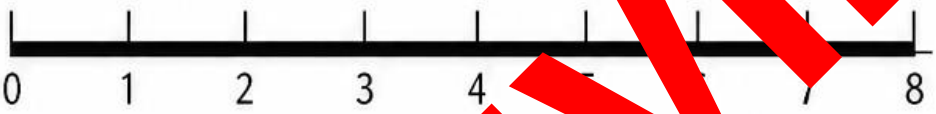
Length: 3 cm

2. 

Length: 5 cm

3. 

Length: 6 cm

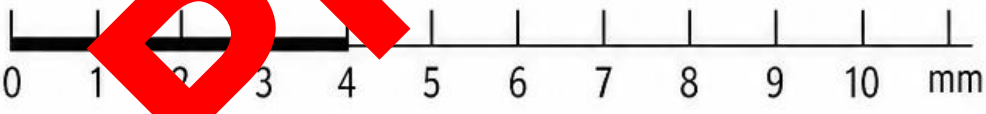
4. 

Length: 8 cm

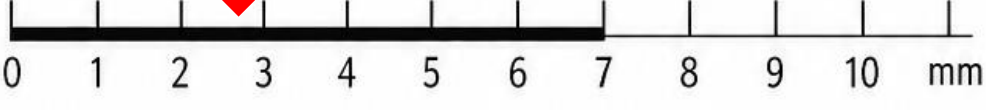
B. Read in millimetres

5. 

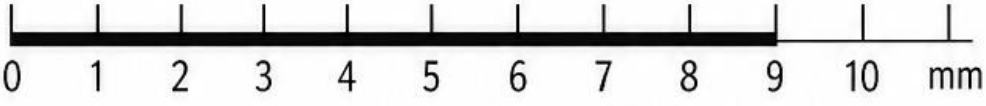
Length: 2 mm

6. 

Length: 4 mm

7. 

Length: 7 mm

8. 

Length: 9 mm

9. Why are millimetres useful for measuring tiny objects?

Millimetres let us record very small lengths precisely.

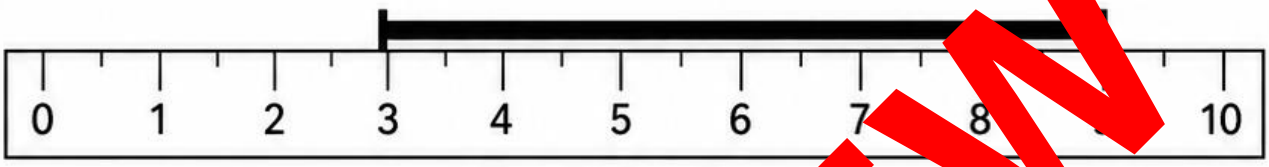
Name: _____ Date: _____

Start Points Matter

When an object does not start at 0, subtract.

length = end mark − start mark

Worked example: start 3 cm, end 9 cm



9 − 3 = 6 cm

No.	Start mark	End mark	Unit	Equation	Length
1	1	6	cm	___ − ___ = ___	_____
2	2	9		___ − ___ = ___	_____
3	4		cm	___ − ___ = ___	_____
4	3	8	cm	___ − ___ = ___	_____
5	6		cm	___ − ___ = ___	_____
6		7	mm	___ − ___ = ___	_____
7	1	9	mm	___ − ___ = ___	_____
8		10	mm	___ − ___ = ___	_____
9	3	10	mm	___ − ___ = ___	_____
10	7	12	mm	___ − ___ = ___	_____

11. A ribbon starts at 4 cm and ends at 13 cm. What is its length? Explain why the answer is not 13 cm.

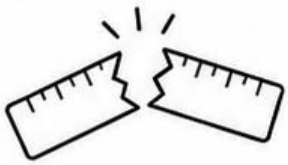
_____

_____

_____

Name: ANSWERS Date: _____

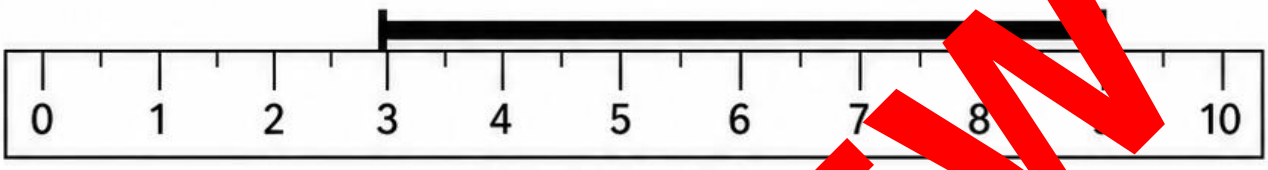
Start Points Matter



When an object does not start at 0, subtract.

length = end mark − start mark

Worked example: start 3 cm, end 9 cm



9 − 3 = 6 cm

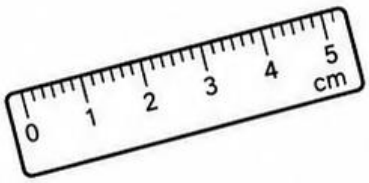
No.	Start mark	End mark	Unit	Equation	Length
1	1	6	cm	6 − 1 = 5	5
2	2	9		9 − 2 = 7	7
3	4		cm	10 − 4 = 6	6
4	3	8	cm	8 − 3 = 5	5
5	6		cm	15 − 6 = 9	9
6		7	mm	7 − 2 = 5	5
7	1	9	mm	9 − 1 = 8	8
8	5	10	mm	10 − 5 = 5	5
9	3	10	mm	10 − 3 = 7	7
10	7	12	mm	12 − 7 = 5	5

11. A ribbon starts at 4 cm and ends at 13 cm. What is its length? Explain why the answer is not 13 cm.

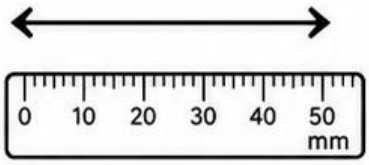
13 − 4 = 9 cm. The end mark is not the length because the ribbon did not start at 0.

Name: _____ Date: _____

Convert Centimetres and Millimetres



10 mm = 1 cm
cm to mm: multiply by 10
mm to cm: divide by 10



A. Convert centimetres to millimetres

1. 2 cm = _____ mm
2. 4 cm = _____ mm
3. 7 cm = _____ mm
4. 9 cm = _____ mm
5. 12 cm = _____ mm

B. Convert millimetres to centimetr

6. 20 mm = _____ cm
7. 50 mm = _____
8. 80 mm = _____ c
9. 110 mm = _____ cm
10. 140 mm = _____ c

C. Comp e

Write <, > c in each box.

11. 6 cm ☐ 55 mm
12. 90 mm ☐ 9 cm
13. 4 cm ☐ 45 mm
14. 120 mm ☐ 11 cm

D. Explain

15. How can you tell that 13 cm is the same length as 130 mm?

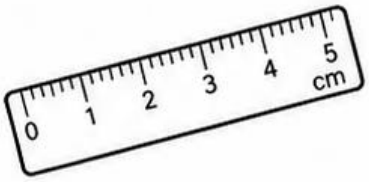
_____

_____

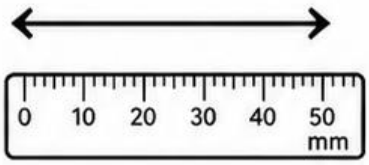
_____

Name: ANSWERS Date: _____

Convert Centimetres and Millimetres



10 mm = 1 cm
cm to mm: multiply by 10
mm to cm: divide by 10



A. Convert centimetres to millimetres

1. 2 cm = 20 mm
2. 4 cm = 40 mm
3. 7 cm = 70 mm
4. 9 cm = 90 mm
5. 12 cm = 120 mm

B. Convert millimetres to centimetr

6. 20 mm = 2 cm
7. 50 mm = 5 c
8. 80 mm = 8 c
9. 110 mm = 1 cm
10. 140 mm = 1 c

C. Comp e

Write <, > c in each box.

11. 6 cm [>] 55 mm
12. 90 mm [=] 9 cm
13. 4 cm [<] 45 mm
14. 120 mm [>] 11 cm

D. Explain

15. How can you tell that 13 cm is the same length as 130 mm?

Each centimetre contains 10 millimetres, so 13 × 10 = 130 mm.

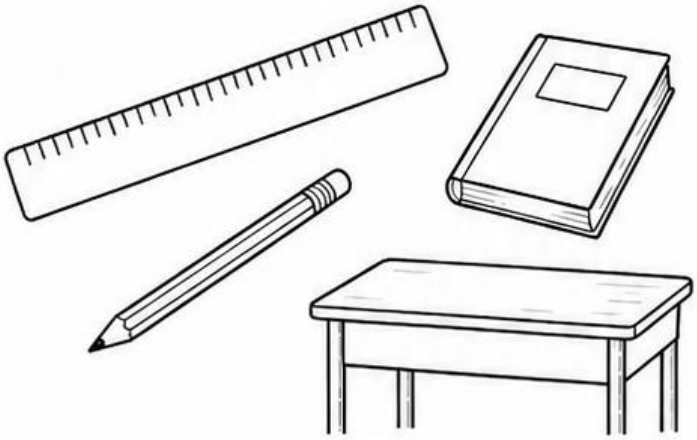
Name: _____ Date: _____

Work with a partner. Measure carefully and record the unit.

Measure and Compare – Part 1

You will need

ruler • metre rule or tape measure • pencil



Method

1. Choose six classroom objects.
2. Predict the best unit: mm, cm or m.
3. Estimate each length.
4. Measure each object twice.
5. Record every result with its unit.

Object	Best unit	Estimate	Measure 1	Measure 2	Same result?

Measurement check

- ☐ I aligned the object with 0.
- ☐ I kept the ruler straight.
- ☐ I read the endpoint at eye level.
- ☐ I recorded the unit.

One object I would measure in millimetres: _____

One object I would measure in metres: _____

Name: _____ Date: _____

Measure and Compare – Part 2

Use your results from Part 1. Show units in every answer.

A. Order your measurements

Choose four objects measured in the same unit. Order them from shortest to longest.

Order	Object	Length
1 shortest		
2		
3		
4 longest		

B. Compare two objects

Object A: _____ Length: _____

Object B: _____ Length: _____

The longer object is _____

Difference: _____ − _____ = _____

C. Convert one result

Choose one measurement in metres.

_____ cm × 10 = _____ mm

Explain why the two numbers describe the same length:

_____

_____

D. Check your accuracy

If Measure 1 and Measure 2 were different, tick possible reasons.

- ☐ The ruler was not aligned with 0.
- ☐ The ruler moved.
- ☐ I read a different endpoint.
- ☐ I forgot to record the unit.

E. Reflect

Which measurement are you most confident about? Explain what made it accurate.

_____

_____

_____

Name: _____ Date: _____

Metric Measurement Challenge

Show your thinking and record a unit with every measurement.

A. Choose the best unit

Circle mm, cm or m.

1. thickness of a coin mm cm m

2. length of a pencil mm cm m

3. length of a playground mm cm m

B. Convert

4. 6 cm = _____ mm

5. 90 mm = _____ cm

6. 13 cm = _____ mm

7. 120 mm = _____ cm

C. Read the endpoint

8.

Length: _____ cm

9.

Length: _____ mm

D. Start away from zero

10. An object starts at 2 cm and ends at 11 cm. Length: _____ cm

11. An object starts at 4 mm and ends at 13 mm. Length: _____ mm

E. Compare

Write <, > or =.

12. 8 cm ☐ 75 mm

13. 100 mm ☐ 10 cm

F. Reason

14. A rope is 3 m long. A ribbon is 80 cm long. Which is longer? Explain.

_____

_____

15. Write three steps for measuring accurately with a ruler.

1. _____
2. _____
3. _____

Name: ANSWERS Date: _____

Metric Measurement Challenge

Show your thinking and record a unit with every measurement.

A. Choose the best unit

Circle mm, cm or m.

1. thickness of a coin — (mm) cm m
2. length of a pencil — mm (cm) m
3. length of a playground — mm cm (m)

B. Convert

4. 6 cm = 60 mm
5. 90 mm = 9 cm
6. 13 cm = 130 mm
7. 120 mm = 12 cm

C. Read the endpoint

8. 

Length: 7 cm

9. 

Length: 9 mm

D. Start away from zero

10. An object starts at [illegible] and ends at 11 cm. Length: 9 cm
11. An object starts at 4 mm and ends at 13 mm. Length: 9 mm

E. Compare

Write <, > or =.

12. 8 cm [>] 75 mm
13. 100 mm [=] 10 cm

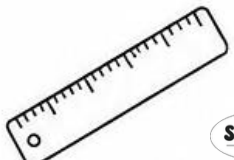
F. Reason

14. A rope is 3 m long. A ribbon is 80 cm long. Which is longer? Explain.

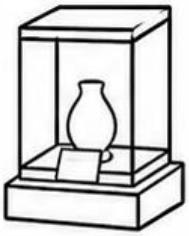
The rope is longer. 3 m = 300 cm, and 300 cm is greater than 80 cm.

15. Write three steps for measuring accurately with a ruler.

1. Align the object with 0.
2. Keep the ruler straight.
3. Read the endpoint and record the unit.



Name: _____ Date: _____



Design a Mini Museum

Your class is creating a mini museum of small classroom objects. Measure, compare and label the exhibits so visitors can understand their sizes.

Your task

- ☐ Choose four safe, small objects.
- ☐ Estimate and measure each object.
- ☐ Choose mm or cm for each measurement.
- ☐ Convert at least one centimetre measurement to millimetres.
- ☐ Draw and label your display plan.
- ☐ Explain how you checked accuracy.

Object	Estimate	Best unit	Measured length	Equivalent length

Museum display plan — draw each object and label its measured length

not to scale

Measure away from zero

Object: _____

Start mark: _____ End mark: _____ Unit: _____

Calculation: _____ − _____ = _____

1. Why did you choose millimetres for one object?

_____

_____

2. How did measuring twice improve your accuracy?

_____

_____

Millimetres and Centimetres – Assessment Rubric

Student: _____ Teacher: _____ Date: _____

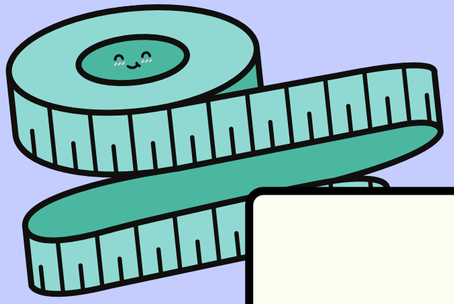
Highlight one descriptor in each row. Use evidence from the challenge and mini museum task.

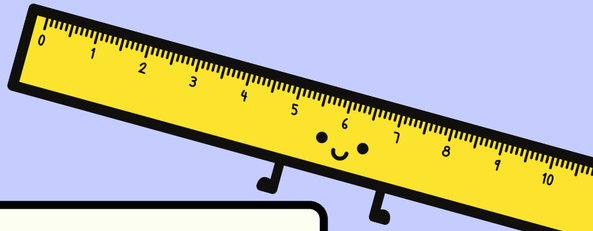
Criteria	BEGINNING	DEVELOPING	ACHIEVING	CONFIDENT	EXCEEDING
Chooses units	Chooses units randomly.	Chooses a sensible unit with support.	Chooses mm, cm or m sensibly.	Chooses units accurately and explains why.	Justifies the most precise practical unit.
Measures accurately	Needs support to align and read.	Sometimes aligns with 0 and reads correctly.	Aligns, keeps straight and reads the endpoint.	Measures twice and resolves differences.	Measures precisely and identifies sources of error.
Records and converts	Records are incomplete or lack units.	Records some values with units.	Records units and converts cm and mm.	Converts and compares across units accurately.	Uses equivalent lengths flexibly in reasoning.
Compares and reasons	Makes comparisons without evidence.	Compares with prompts.	Orders and compares measured lengths.	Explains differences using calculations.	Builds and checks a convincing measurement argument.
Communicates findings	Labels or explanations are unclear.	Shares some labelled results.	Presents a clear labelled plan.	Explains method, accuracy and choices.	Communicates precise findings and thoughtful improvements.

Overall evidence: _____

Next step: _____

Millimeters and centimeters





Millimeters and Centimeters Quiz