MATHS FIELD GUIDE · GRADE 1

Find the repeating part

OPENING PROBLEM

Which shape follows?



02 Find the smallest repeating piece
03 Rules and worked cases
04 A bracelet that repeats
05 Use position to repair a pattern
06 Check your reasoning

ILLUSTRATED PROBLEM SHEET

Find the smallest repeating piece

A repeating piece can be slid along the row to rebuild it.

1



Which shape follows?

Square. Each circle is followed by a square.

2



Where does the repeat end?

After the triangle. The missing sixth shape is a triangle.

3



What belongs in the middle gap?

Triangle. Match the fifth place to the second.

4



Which positions start a fresh group?

The first and fourth. The seventh would start the next one.

Red, blue, red, blue
position 5 is red.

Red, red, blue
the repeat uses three positions.

CHAPTER PROBLEM

Clap, tap, clap, tap. What comes next? Why?

Clap. The repeating part is clap, tap.

MATHS REFERENCE · GRADE 1

Find the repeating part

A repeating pattern uses the same small part again and again.

That small part tells us what comes next.

Four cases to recognise

Situation	What to do and why
Red, blue, blue, red, blue, blue	The shortest repeating unit is red–blue–blue.
Clap, tap, clap, tap, clap, ...	The next action is tap. Repeat the two-action unit.
Yellow, green, yellow, __, yellow	Green fills the gap so each yellow–green pair matches.
Red, red, blue repeated three times	Three groups of three use nine beads, with three blue beads.

Read the model

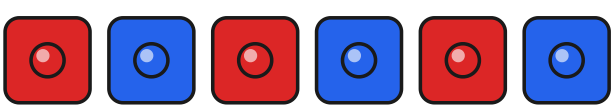
Spot the repeat

Look: red, blue, red, blue, red, blue.

The repeating part is red, blue.

What comes next

What part repeats? What comes next?



A repeating pattern strip

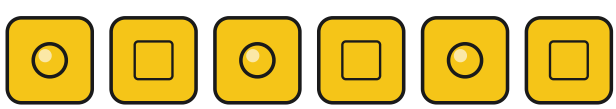
Use shapes as well

Look: circle, square, circle, square, circle, square.

The repeating part is circle, square. It is not just a colour rule.

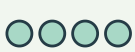
What comes next

What part repeats? What comes next?



A repeating pattern strip

pattern A rule we can notice and follow.
repeat Do the same part again.
next What comes immediately after.

A 
B 

Can you see five without counting from one?

See four together and one more. Five.

WORKED INVESTIGATION

A bracelet that repeats

Thread red, red, blue, then red, red, blue. Slide the first three beads together. That little group tells you how to continue.

Look at this part	What it tells you
Beads 1–3	red, red, blue
Beads 4–6	red, red, blue
Beads 7–9	the same three again

Work it through

Cover bead 5. The second group starts at bead 4. Its first and second beads are red, so the covered bead is red.

Catch the mistake

Putting blue after every red would make red, blue, red, blue. Check the whole repeating group before predicting the next bead.

Compare the cases

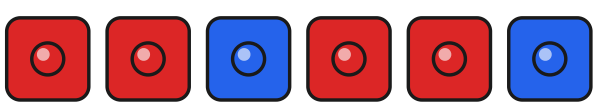
A longer repeating part

Look: red, red, blue, red, red, blue.

This time the repeating part has three places: red, red, blue.

What comes next

What part repeats? What comes next?



A repeating pattern strip

Explain the next item

After red, red, blue, we begin the same part again.

The next item is red. We know why, not just what.

Change one condition

Swap red for a clap and blue for a stamp. Clap, clap, stamp has the same pattern as the bracelet.

Check more than one repeat

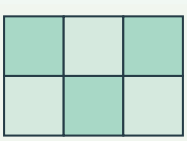
One red and one blue are not enough to prove a long pattern.

Look for the same part repeated. Do not change the rule halfway through.

Make a sound pattern

Clap, tap, clap, tap. Repeat it.

Tell your teacher the repeating part. Ask them to continue it.



How many dots would fit if you put one in each cell?

Two rows of three give six. Counting three pairs gives the same six.

ILLUSTRATED PROBLEM SHEET

Use position to repair a pattern

Match places that belong to the same spot in each repeat.

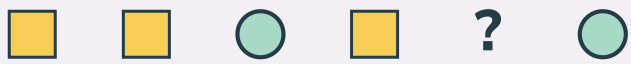
1



Which shape starts each pair?

Triangle. The missing fifth shape starts the third pair.

2



What belongs in the gap?

A square. Each run is two squares then a circle.

3



If you cover the first three, what should the rest look like?

The same three in the same order. The sixth shape is a square.

4



The intended rule is circle, square. Which position needs repair?

The fifth should be a circle. After the repair there are three matching pairs.

Pattern ● ■ ● ■
every even place is a square.

Pattern ● ■ ■ ● ■ ■
places 1, 4 and 7 are circles.

CHAPTER PROBLEM

Circle, circle, square, circle, circle, square. Name the repeating part.

Circle, circle, square.

QUESTION BANK · FOLD OR COVER THE RIGHT COLUMN

Check your reasoning

Try the problem	Solution and reasoning
01 Is a group of four always the smallest repeat in circle, square, circle, square?	No. Circle then square is enough.
02 Can the row circle, square, circle continue in more than one way if no rule is given?	Yes. Agree on a repeating piece before predicting.
03 Red, blue, red, blue, red. What comes next?	Blue. Each red is followed by blue in this pattern.
04 A bracelet repeats yellow, green, green. After two complete groups, which colour comes next? Why?	Yellow. Two complete groups finish at a boundary, so the next bead starts the group again.
05 Clap, tap, tap repeats. What is action seven?	The first six actions make two full groups. Action seven starts again with a clap.
06 Red, green, red, red, green, red. What is the repeating part?	Red–green–red occurs twice. Notice the two reds where the groups meet.
07 Which colour comes next? 	Yellow. Each group has a green counter followed by two yellow counters.



Pair the rows. How many pairs and how many counters?

Three pairs. Each pair uses two counters, so there are six counters.

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