LINE SYMMETRY

BUILDING BLOCKS

NAME _____ CLASS _____ DATE _____

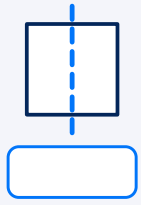
KEY IDEA

A line of symmetry splits a shape into two halves that match exactly.

Imagine folding the shape on the line. If the two halves fit exactly on top of each other, it is a line of symmetry.



1 Is the dashed line a line of symmetry? Write YES or NO.

a  _____

b  _____

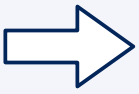
c  _____

d  _____

2 Draw one line of symmetry on each shape. Use a ruler.

a 

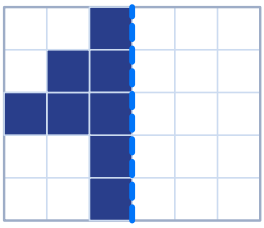
b 

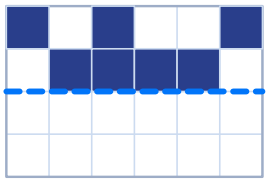
c 

d 

3 Shade squares to finish each pattern. The dashed line is a line of symmetry.

Count the squares from the line. Shade the same number on the other side.

a) 

b) 

4 Draw ALL the lines of symmetry on each shape. Write how many.

Try every fold: up and down, side to side, corner to corner.

a 
lines of symmetry: _____

b 
lines of symmetry: _____

c 
lines of symmetry: _____

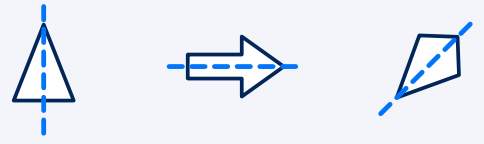
LINE SYMMETRY

SUPPORT

NAME _____ CLASS _____ DATE _____

KEY IDEA

A line of symmetry can be vertical, horizontal or diagonal. Some shapes have more than one line of symmetry and some have none.



1 Draw the lines of symmetry on each shape. Then write how many there are.

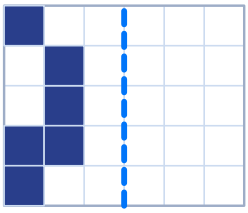
a  ☐

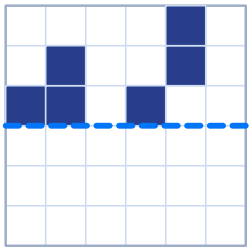
b  ☐

c  ☐

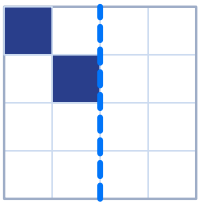
d  ☐

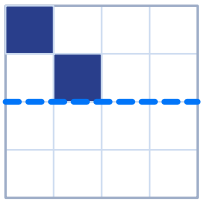
2 Shade squares so that the dashed line is a line of symmetry.

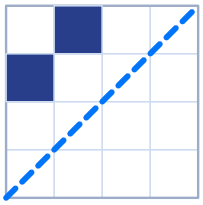
a) 

b) 

3 Shade 2 more squares in each grid so the dashed line is a line of symmetry.

a) 

b) 

c) 

4 Draw the lines of symmetry on each triangle. Write how many.

equilateral 

lines of symmetry: ☐

isosceles 

lines of symmetry: ☐

scalene 

lines of symmetry: ☐

LINE SYMMETRY

CORE

NAME _____ CLASS _____ DATE _____

KEY IDEA

A line of symmetry divides a shape into two halves that are reflections of each other. A regular polygon has as many lines of symmetry as sides; other polygons may not. Any pattern on the shape must match too.

FLUENCY

1 Draw all the lines of symmetry on each shape. Write how many there are.

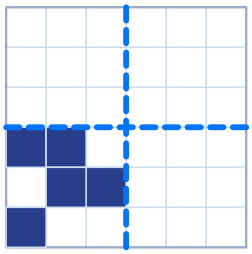
a  ____

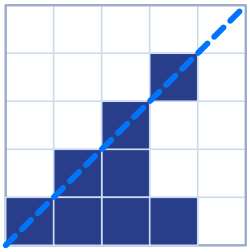
b  ____

c  ____

d  ____

2 Shade squares so that every dashed line is a line of symmetry.

a) 

b) 

REASONING

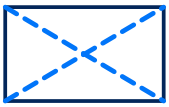
3 Each square tile has a pattern on it. How many lines of symmetry does each tile have?

a  lines of symmetry: ____

b  lines of symmetry: ____

c  lines of symmetry: ____

4 Amir says, "A rectangle has 4 sides, so it has 4 lines of symmetry. The diagonals are two of them." Explain why Amir is wrong.



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.....

LINE SYMMETRY

GREATER DEPTH

NAME _____ CLASS _____ DATE _____

REASONING

1 Is each statement always, sometimes or never true? Circle your answer.

If it is sometimes true, sketch an example of when it is true and when it is not.

a) A triangle has exactly 2 lines of symmetry. ALWAYS SOMETIMES NEVER

b) A shape with 4 equal sides has 4 lines of symmetry. ALWAYS SOMETIMES NEVER

c) A hexagon has 6 lines of symmetry. ALWAYS SOMETIMES NEVER

PROBLEM SOLVING

2 Write the letter of each shape in the correct part of the table.

A 

B 

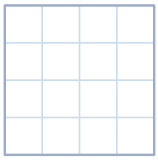
C 

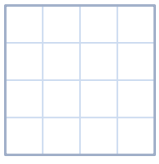
D 

E 

	HORIZONTAL LINE OF SYMMETRY	NO HORIZONTAL LINE OF SYMMETRY
vertical line of symmetry		
no vertical line of symmetry		

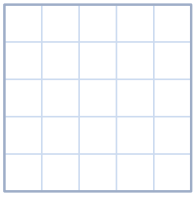
3 Make two different patterns of 4 shaded squares, each with exactly 2 lines of symmetry.





★ CHALLENGE FOR ALL

4 a) Shade exactly 8 squares to make a pattern with exactly 4 lines of symmetry.



b) Explain why no pattern on this grid can have exactly 3 lines of symmetry.

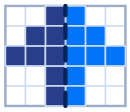
LINE SYMMETRY · ANSWERS

ANSWERS

BUILDING BLOCKS

1 a) YES · b) NO (a rectangle's diagonal is not a line of symmetry) · c) YES · d) NO
2 a) vertical line through the point of the roof · b) vertical line through the top and bottom corners · c) horizontal line through the tip of the arrow · d) vertical line through the middle
4 a) 4 · b) 2 · c) 3

3a



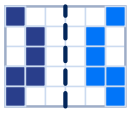
3b



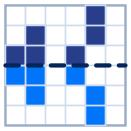
SUPPORT

1 a) 3 · b) 2 · c) 5 · d) 0 (a parallelogram has no lines of symmetry)
4 equilateral 3 · isosceles 1 · scalene 0

2a



2b



3a



3b



3c



CORE

1 a) 2 · b) 6 · c) 1 · d) 2 (not every hexagon has 6)
3 a) 2 (both diagonals) · b) 4 · c) 1 (the horizontal line)
4 e.g. Folding a rectangle along a diagonal does not make the halves match; the corners do not meet. A rectangle has only 2 lines of symmetry (vertical and horizontal), so the number of lines does not always equal the number of sides.

2a



2b



GREATER DEPTH

1 a) never (a triangle has 0, 1 or 3) · b) sometimes (a square has 4, a rhombus has 2) · c) sometimes (a regular hexagon has 6, other hexagons have fewer)
2 vertical and horizontal: A · vertical only: B, E · horizontal only: C · neither: D
3 e.g. the two middle squares of the top row and of the bottom row (vertical and horizontal lines); the four squares on one diagonal (both diagonal lines). Many answers.
4 a) e.g. the four corners and the middle square of each edge (8 squares). b) The lines of symmetry of a square grid come in pairs at right angles (vertical with horizontal, diagonal with diagonal). If a pattern has 3 of these lines, reflecting in two of them forces the fourth, so you get 0, 1, 2 or 4 lines, never exactly 3.