Free Extra Maths Class · Grade 5

Symmetry and transformations

Name: _____

Remember: A **line of symmetry** folds a shape into two halves that match exactly. In a **mirror image** every point is just as far from the line. Slide, flip and turn change the **position**, not the size.

1 How many lines of symmetry does the square have?



2 How many lines of symmetry does the rectangle have?



3 How many lines of symmetry does the equilateral triangle have?



4 How many lines of symmetry does the regular hexagon have?



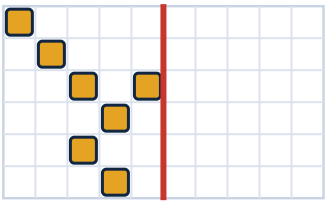
5 How many lines of symmetry does this parallelogram have?



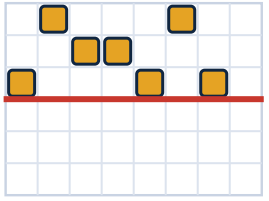
6 Which of these letters have an upright line of symmetry? A F M R T

7 Which of these letters have a flat (horizontal) line of symmetry? B F E G

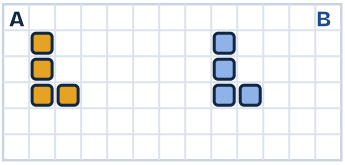
8 Shade squares to complete the mirror picture across the red line.



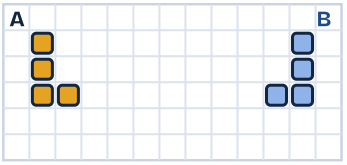
9 Shade squares to complete the mirror picture across the red line.



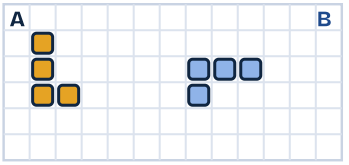
10 How did shape A get to B: a slide, a flip or a turn?



11 How did shape A get to B: a slide, a flip or a turn?



12 How did shape A get to B: a slide, a flip or a turn?



13 A dot is 2 squares above a flat mirror line. Where is its mirror image?

14 Why can circles not cover a floor without gaps?

15 Which one tiles without gaps: triangles or pentagons?

I got _____ out of 15 ☆ ☆ ☆

Free Extra Maths Class · Grade 5 · Memo

Memo: Symmetry and transformations

1. **4**
There are 4 lines on which the square folds exactly onto itself.

2. **2**
There are 2 lines on which the rectangle folds exactly onto itself.

3. **3**
There are 3 lines on which the equilateral triangle folds exactly onto itself.

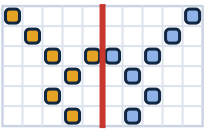
4. **6**
There are 6 lines on which the regular hexagon folds exactly onto itself.

5. **0 (none)**
Fold it anywhere: the halves never match exactly.

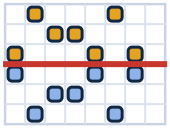
6. **A, M, T**
Fold them down the middle: only A, M and T match.

7. **B, E**
The top and bottom halves of B and E are the same.

8. **See the picture**



9. **See the picture**



10. **Slide (translation)**
B points the same way; it has only moved.

11. **Flip (reflection)**
B is back to front, like in a mirror.

12. **Turn (rotation)**
B points another way, but is not back to front.

13. **2 squares below the line**
Just as far from the line, on the other side.

14. **They only touch each other; gaps are left**

15. **Triangles**
6 angles of 60° = 360°. Pentagons: 3 × 108° = 324°, a gap is left.