Varied Fluency
Step 6: Parallel and Perpendicular

National Curriculum Objectives:

Mathematics Year 3: (3G2) Identify horizontal and vertical lines and pairs of perpendicular and parallel lines

Differentiation:

Developing Questions to support identifying a set of parallel and perpendicular lines, both discretely and within shapes. Lines are horizontal and vertical only. Regular quadrilaterals used and presented in standard orientation.

Expected Questions to support identifying a set of parallel and perpendicular lines, both discretely and within shapes. Lines may be horizontal, vertical or diagonal. Regular shapes and irregular quadrilaterals may be used and may be presented in different orientations.

Greater Depth Questions to support identifying a set of more than 2 parallel and perpendicular lines, both discretely and within shapes. Most lines are diagonal but may be horizontal or vertical. Irregular and compound shapes used.
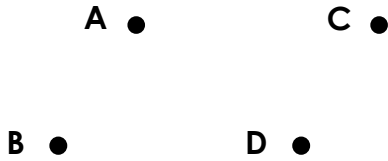
More Year 3 Properties of Shapes resources.

Did you like this resource? Don't forget to review it on our website.

Parallel and Perpendicular

1a. Sam joins dots A to B and C to D. Will her lines be parallel, perpendicular or neither?

A ●   C ●

B ●   D ●

VF

1b. Holly joins dots A to B and B to D. Will her lines be parallel, perpendicular or neither?

●

A   D ●

●

B   C ●

VF

2a. Complete the sentences below.

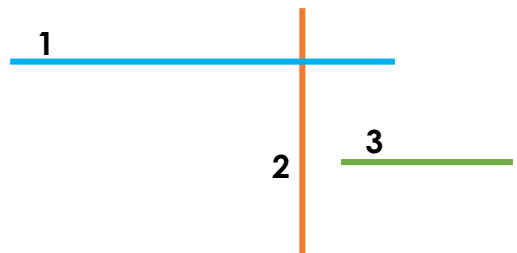Line 1 is perpendicular to line _____ .

Line 2 is _____ to line 1.
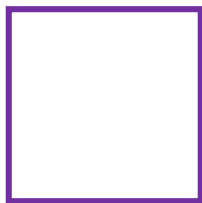
1

2   3

VF

2b. Complete the sentences below.

Line 1 is _____ to line 2.

Line 3 is parallel to line _____ .

1

2   3

VF

3a. True or false? This shape has parallel lines.
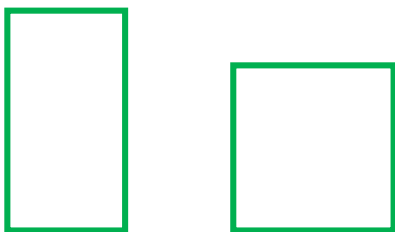
VF

3b. True or false? This shape has perpendicular lines.

VF

4a. Identify a set of perpendicular lines in these shapes

VF

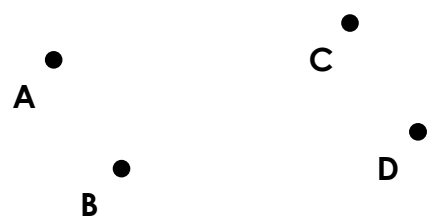**4b.** Identify a set of parallel lines in these shapes

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Varied Fluency – Parallel and Perpendicular – Year 3 Developing

Parallel and Perpendicular

5a. Katie joins dots A to B and C to D. Will her lines be parallel, perpendicular or neither?

A

B

C

D

E

VF

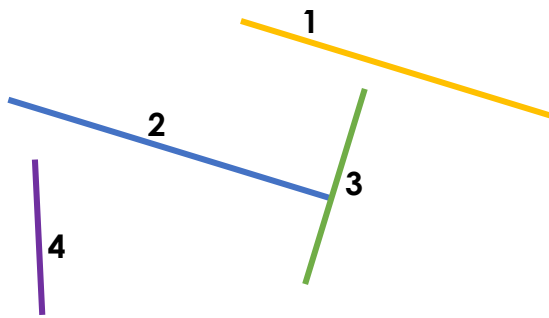**5b.** Sufyan joins dots A to B and B to C. Will his lines be parallel, perpendicular or neither?

A

B

C

D

E

VF

6a. Complete the sentences below.

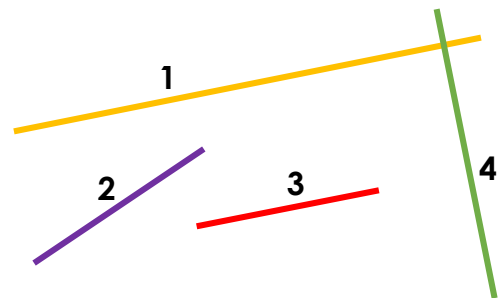Line 1 is parallel to line _____ .

Line 3 is _____ to line 2.
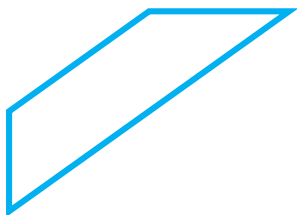
1

2

3

4

E

VF

6b. Complete the sentences below.

Line 1 is _____ to line 4.

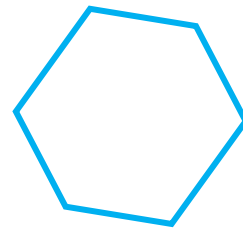Line 3 is parallel to line _____ .

1

2

3

4

E

VF

7a. True or false? This irregular quadrilateral has a set of parallel lines.
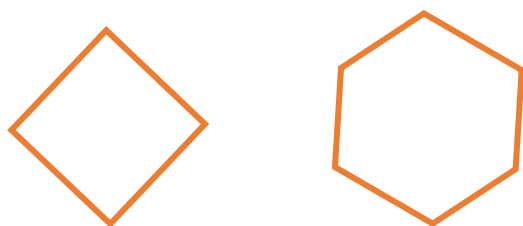
E

VF

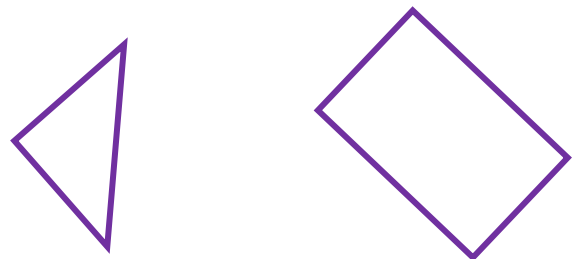**7b.** True or false? A regular hexagon has perpendicular lines.

E

VF

8a. Identify a set of parallel lines in these shapes.

E

VF

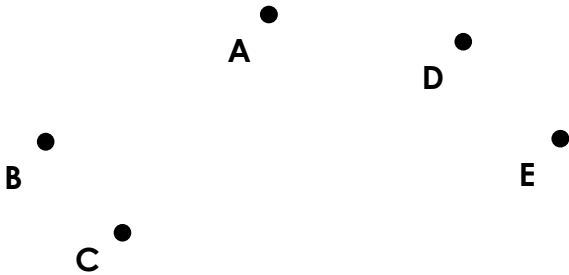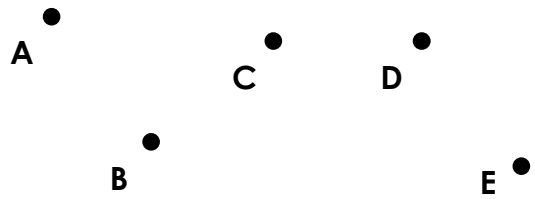**8b.** Identify a set of perpendicular lines in these shapes.

E

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Varied Fluency – Parallel and Perpendicular – Year 3 Expected

9a. Tamara joins the dots in alphabetical order. Which lines will be perpendicular?
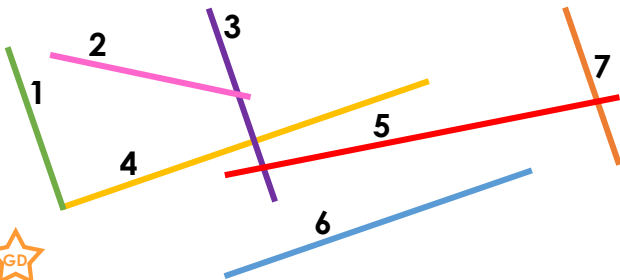
A
D
B
E
C

VF

9b. Jason joins the dots in alphabetical order. Which lines will be parallel?

A
C
D
B
E

VF

10a. Complete the sentences below.
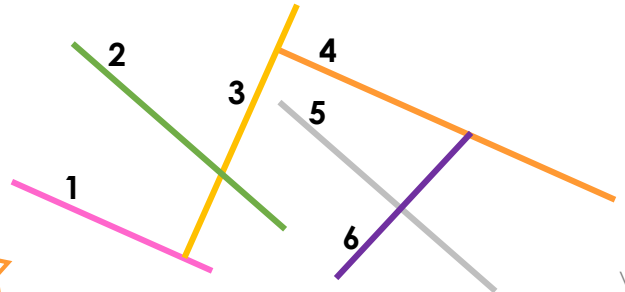
Line 7 is parallel to line _____ and line _____ .

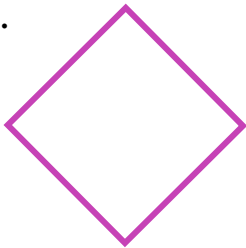Line 4 is _____ to line 6 and _____ to line 1.

1
2
3
4
5
6
7

VF

10b. Complete the sentences below.

Line 3 is perpendicular to line _____ and to line _____ .

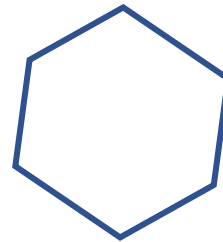Line 2 is _____ to line 6 and _____ to line 5.

1
2
3
4
5
6

VF

11a. True or false? A square has the same amount of sets of perpendicular and parallel lines.
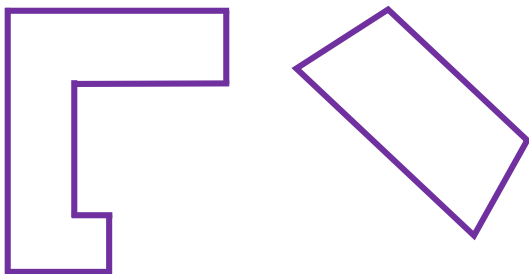
VF

11b. True or false? A hexagon has more sets of perpendicular lines than parallel lines.
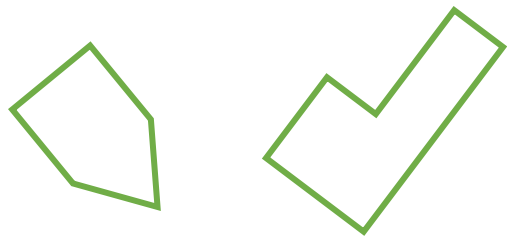
VF

12a. Identify a set of parallel lines in these shapes.

VF

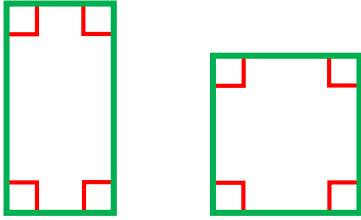**12b.** Identify a set of perpendicular lines in these shapes.

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Varied Fluency – Parallel and Perpendicular – Year 3 Greater Depth

Varied Fluency
Parallel and Perpendicular

Developing
1a. Parallel
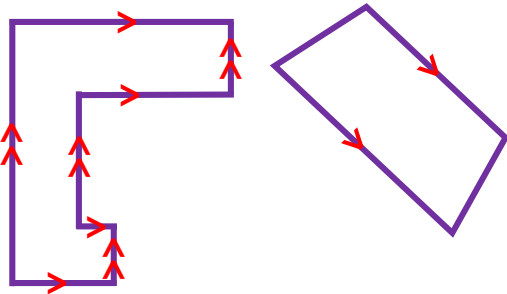**2a.** 3, parallel
3a. True
4a.

Expected
5a. Parallel
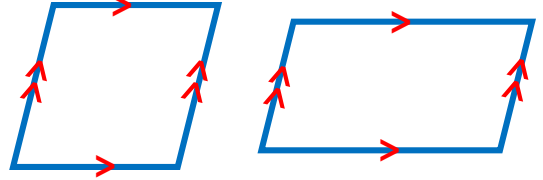**6a.** 2, perpendicular
7a. True
8a.
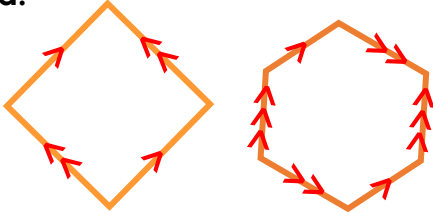
Greater Depth
9a. A – B and B – C
B – C and C – D
C – D and D – E
10a. 3 and 1, parallel and perpendicular
11a. False, a square has 2 sets of parallel lines and 4 sets of perpendicular lines.
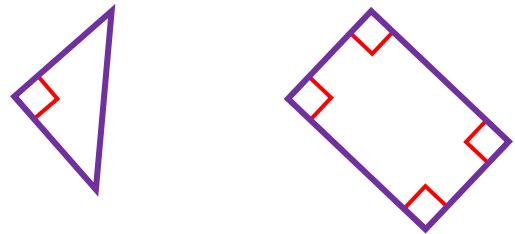**12a.**

Varied Fluency
Parallel and Perpendicular

Developing
1b. Neither
2b. perpendicular, 1
3b. False, a parallelogram does not have any sets of perpendicular lines.
4b.

Expected
5b. Perpendicular
6b. perpendicular, 1
7b. False, a regular hexagon has no perpendicular lines.
8b.

Greater Depth
9b. A – B and D – E
10b. 1 and 4; neither and parallel
11b. False, a regular hexagon has 3 sets of parallel lines and no sets of perpendicular lines.
12b.

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Varied Fluency – Parallel and Perpendicular **ANSWERS**