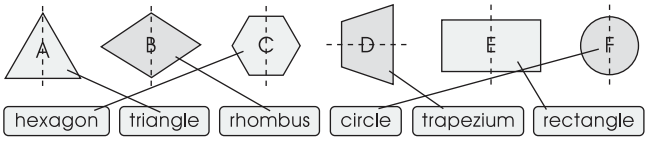
Answers to **3:MG01** to **3:MG60** can be found in **3:MG00D**, **3:MG00E** and **3:MG00F**, within the Level Contents of this section.

Answers to Level 3 2D Space

3:01

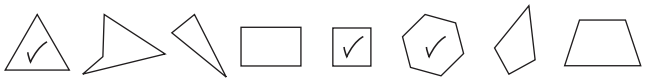
1



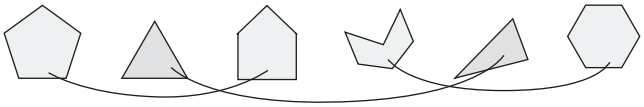
2 **a** B, D, E **b** B, D, E **c** A, F **d** A, F
e C **f** C **g** D **h** C

3 A line of symmetry will be drawn on each shape of Question 1. Answers will vary except for D.

4



5

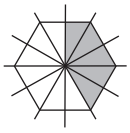


Reflecting: yes, a square

3:01 Extension

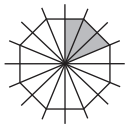
1 **a** 10 **b** yes **c** $\frac{2}{10}$ or $\frac{1}{5}$

2



a 12 **b** yes **c** $\frac{5}{12}$

3



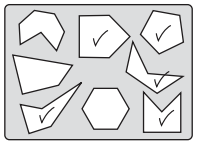
a 16 **b** yes **c** $\frac{3}{16}$

4

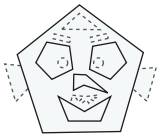
a 20 **b** yes **c** $\frac{3}{20}$ **d** $\frac{17}{20}$

3:02

1

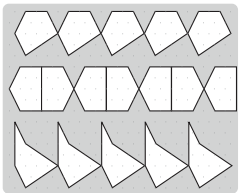


2



3 5

4



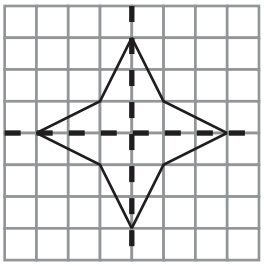
5 yes, yes.
Pentagon shapes will vary.

3:02 Extension

1 **a** triangle, 3 **f** square, 4
b rectangle, 4 **g** rhombus (or diamond), 4
c trapezium, 4 **h** pentagon, 5
d circle, 1 **i** oval, 1
e hexagon, 6 **j** octagon, 8

2 **a** 4 **b** 5 **c** 2 **d** 2 **e** 6
f 2 **g** There is no limit. (An infinite number)

3



a 8
b 8
c 4

3:02PT Progress Test answers and records are at the end of this section.

3:03

1 **a** 3, 4, 2, 1 **b** 1, 3, 4, 2
c 2, 1, 4, 3, 5 **d** 1, 4, 5, 2, 3

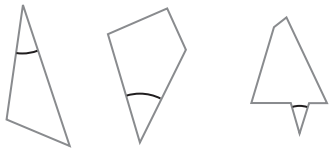
Challenge: **2** Answers will vary.

3:03 Extension

1 A small and a large angle will be drawn on each picture.

2 **a** Deklyn, Flynn **b** Deklyn, Flynn
c Flynn, Georgia

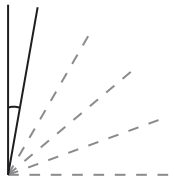
3



4 Answers will vary. Object A has more angles.

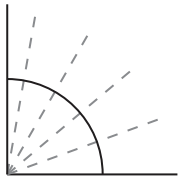
5 Answers will vary (eg at the corner of a window).

6 **a**



b Answers will vary.

c



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Answers to Level 3 2D Space

3:04

1 **a** 1, 3, 2, 5, 4 **b** 1, 5, 4, 3, 2

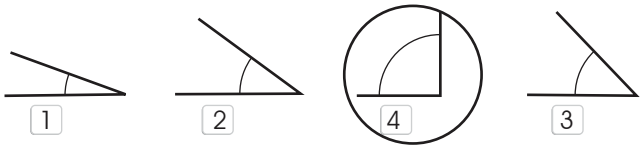
2 The second picture in part **a** will be circled.
The fourth picture in part **b** will be circled.

3 **a** A, E **b** D, G, H, I **c** B, C, F
The unmarked angle in F is also a right angle.

3:04 Consolidation

1 **a** 2, 3, 1, 4 **b** 3, 2, 4, 1 **c** 1, 3, 4, 2
d clock A **e** 3 o'clock Answers may vary.

2

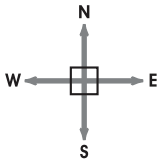


3 Investigations will vary.

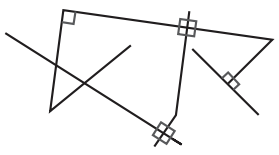
3:05

1 Answers will vary. Any two lines that meet at a square corner could be traced.

2 **a** yes **b**



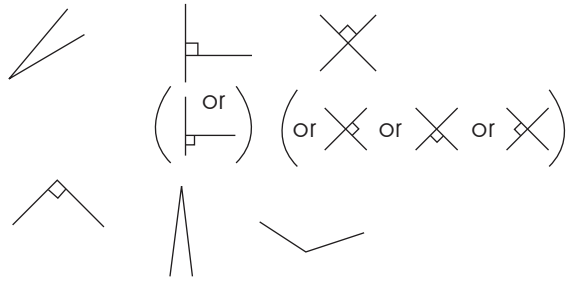
3



4 **a** B, F **b** A: 0, B: 4, D: 0, F: 2
c A, F **d** B, D, E, F

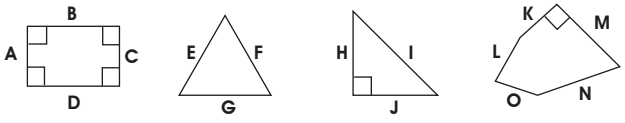
3:05 Consolidation

1



2 Two pairs of perpendicular lines will be traced.

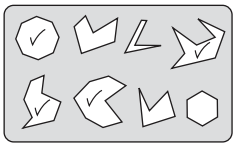
3



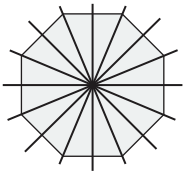
a T **b** F **c** T **d** F
e A and B, B and C, C and D, A and D
f H and J

3:06

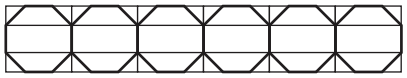
1



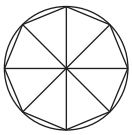
2 4 pairs of parallel sides will be traced. (These will be opposite sides.) 8 lines of symmetry could be drawn.



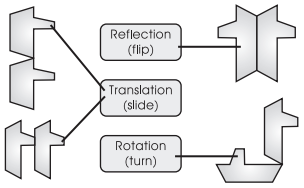
3



4



5

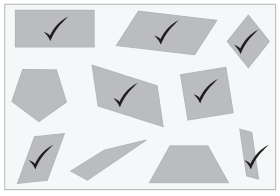


3:06PT Progress Test answers and records are at the end of this section.

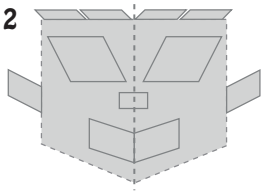
3:07

Note: Squares, rectangles and rhombuses are special parallelograms.

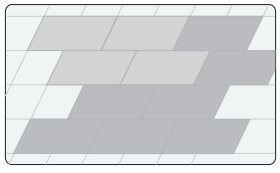
1



2



3



4 Parallelograms will vary in size and shape but must have 2 pairs of parallel sides.

Challenge: rectangle (It would be a square if all sides were equal.)

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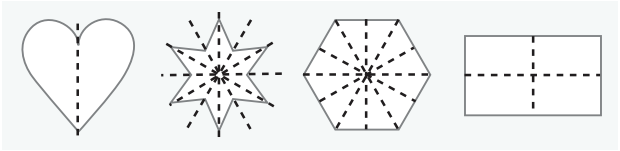
Answers to Level 3 2D Space

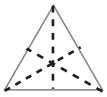
3:08

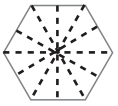
1 **a** One of these lines should be drawn on each shape.

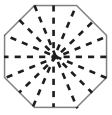
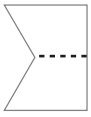


b star, hexagon and rectangle

2 **a** , 4 **b** , 2

c  , 3 **d** , 0

e  , 6 **f** , 0

g  , 8 **h**  , 1

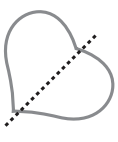
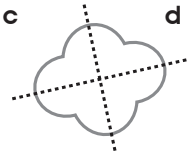
i A red dot should be drawn in the centre of the shapes in a, b, c, e, and g (and possibly d as well).

3 **a** Answers will vary. Any straight line that goes through the centre of the circle from one side to the other is a line of symmetry. Eight of these should be drawn.

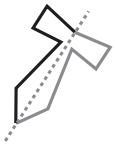
b yes **c** a never-ending (infinite) number

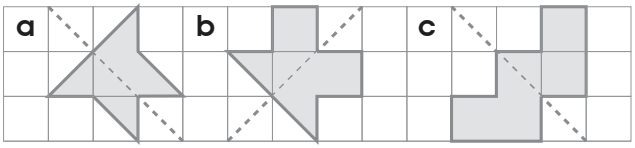
d no

3:08 Extension

1 **a**  **b** **c**  **d**

Either line is acceptable

2 **a** **b**  **c** **d**

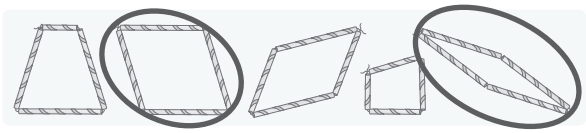
3 **a** 

4 Answers will vary.

3:08PT Progress Test answers and records are at the end of this section.

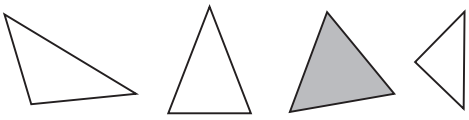
3:09

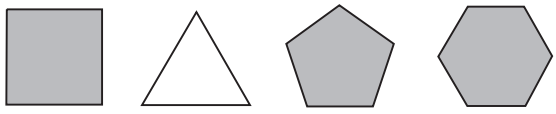
1 **a** B, C, D **b** A **c** A will be circled.

d 

2 Answers will vary. Triangles are strong and will not change shape easily.

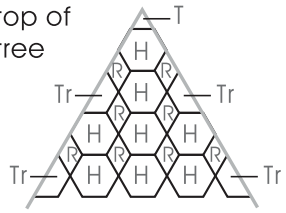
3:10

1 **a** 

b 

2 **a** **b** B

3 **a** top of tree



b The hexagons (H) will be green, the triangles (T) red, the rhombuses (R) yellow and the trapeziums (Tr) blue.

c hexagons: 30, triangles: 19
rhombuses: 26, trapeziums: 8

d octagons: 12, triangles: 5
squares: 4, hexagons: 5

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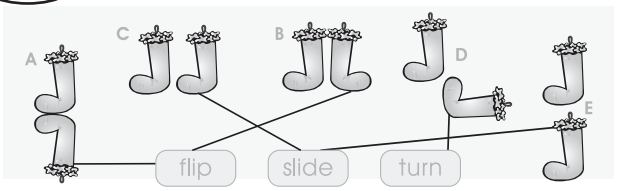
Answers to Level 3 2D Space

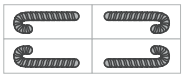
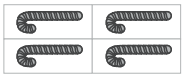
3:11

1



2 B, G and H. Each has gaps.

3 **a** slide **b** flip **c** turn

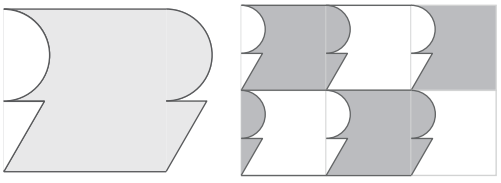
4 **a**  **b**  **c**

3:11 Extension

1 A, B and D

2 A, B, D and E

3 The tile will be traced. The tessellation will be completed.

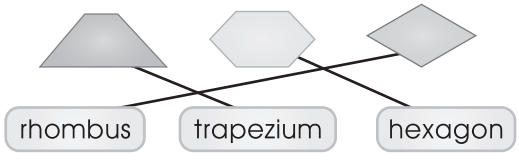


3:11PT Progress Test answers and records are at the end of this section.

Assessment for the whole of Level 3

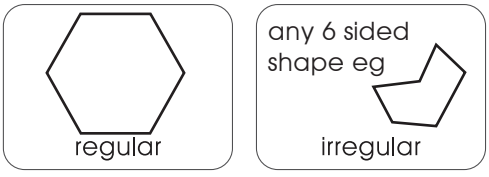
Test

1

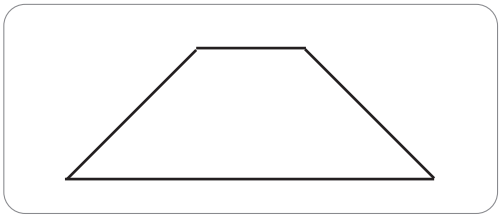


2 equal

3

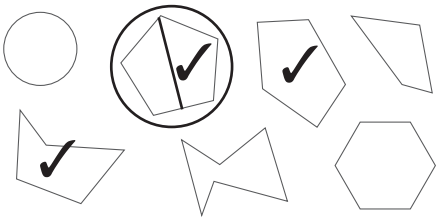


4

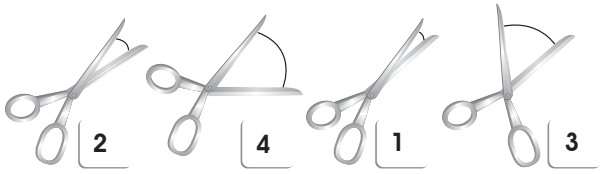


trapezium

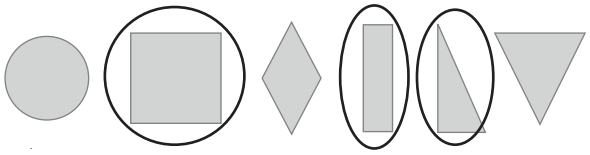
5



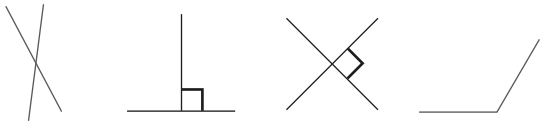
6



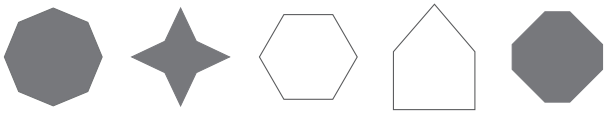
7



8 90°

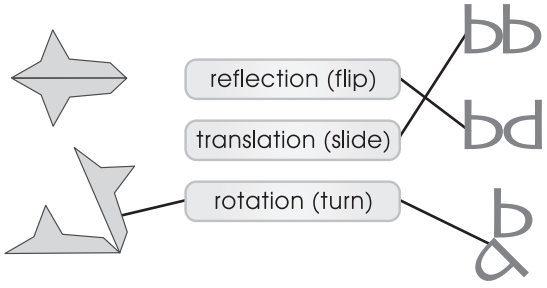


9 **a**

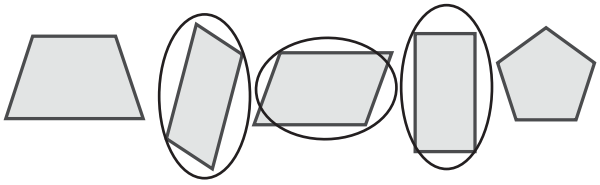


b **8** sides, **8** angles

10



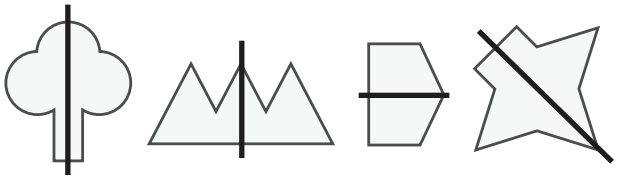
11



12 **a** 4 **b** parallel

c yes **d** rectangle, square, rhombus

13 **a**



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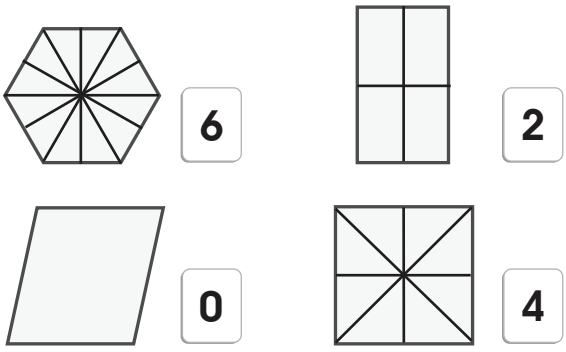
Answers to Level 3 2D Space

Test — Assessment for the whole of Level 3

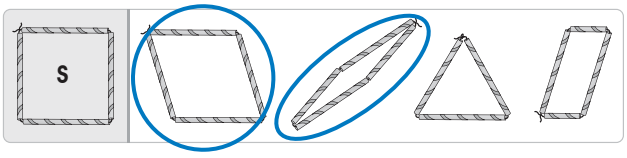
Continued

13 b



14 a D **b** C **c** B **d** A

15



2D Space answers to Maths Builder 3 can be found in the Level Contents as

3:MG00D, 3:MG00E and 3:MG00F

Answers: **3:MG01 - 3:MG60**

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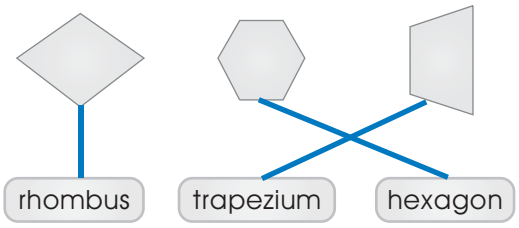
Level 3, Progress test 1, Answers

(2D Space)

1 : having difficulty
2 : developing understanding
3 : progressing well

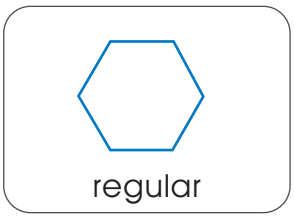
For treatment, go to:
3:01
3:01E
3:02E

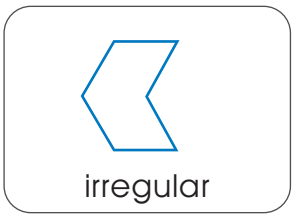
1 Match each shape to a label.



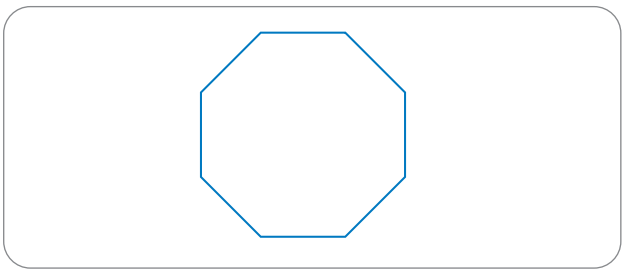
2 Complete:
A regular shape has all sides and all angles **equal** .

3 Draw a regular and an irregular hexagon.





4 Draw and name the 2D shape that has 4 pairs of parallel sides.



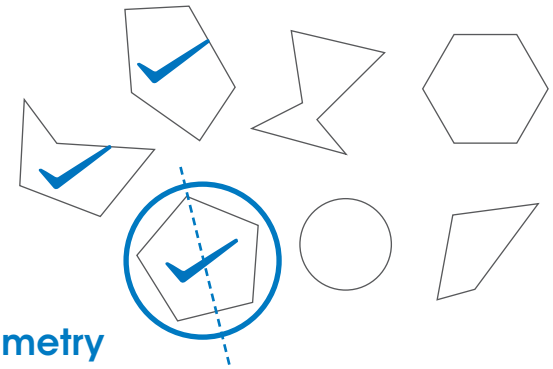
regular octagon

1 2 3

5 **a** Tick the pentagons.

b Circle the regular pentagon.

c Draw a line of symmetry on one of the pentagons.



The line of symmetry drawn may vary.

3:02

1 2 3

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Name: _____ Class: _____

Progress Test Record (Print this sheet to keep a record of remedial treatment.)

- The student should complete the test and then have it marked.
- Show where each error was made by placing a stroke under the question number.
- Use the worksheets listed to review the concept.
- Make the stroke into a cross when the error has been treated.
- When the review is complete, retest the questions where errors occurred.

3:02 PTR 2D Space, Level 3

Question	1	2	3	4	5										
Errors ⁄															
Colour the worksheets completed.	3:01	3:01	3:01	3:01	3:02										
	3:01E	3:01E	3:01E	3:01E											
	3:02E	3:02E	3:02E	3:02E											
Retest															

Comments: _____

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3:06 PTA Level 3, Progress test 2, Answers

(2D Space)

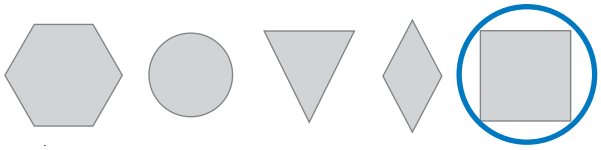
1 : having difficulty
2 : developing understanding
3 : progressing well

For treatment, go to:

1 Order the size of the angles marked, from smallest (1) to largest (4).

3:03
3:03E
3:04C
1 2 3

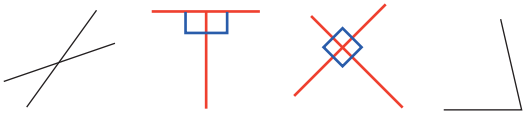
2 Circle the shape that has right angles.



3:04
3:04C
1 2 3

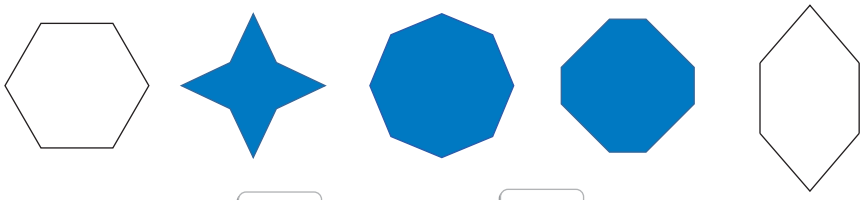
3 Perpendicular lines meet at [right] angles.

Mark all the right angles below (⌞). Trace perpendicular lines in red.



3:05
3:05C
Also: 3:10
1 2 3

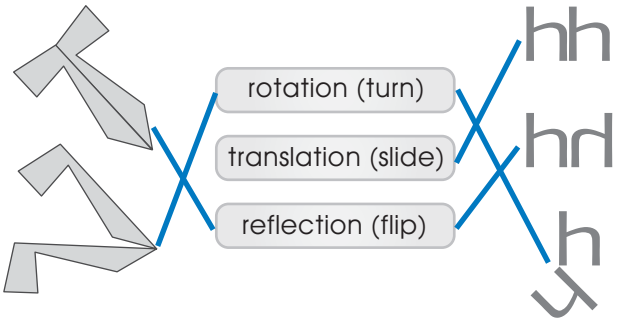
4 **a** Colour the octagons.



b An octagon has [8] sides and [8] angles.

3:06
1 2 3

5 Match each picture to the method used to make it.



3:06
Also: 3:11, 3:11E
1 2 3

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Name: _____ Class: _____

Progress Test Record (Print this sheet to keep a record of remedial treatment.)

- The student should complete the test and then have it marked.
- Show where each error was made by placing a stroke under the question number.
- Use the worksheets listed to review the concept.
- Make the stroke into a cross when the error has been treated.
- When the review is complete, retest the questions where errors occurred.

3:06PTR 2D Space, Level 3

Question	1	2	3	4	5										
Errors ⁄															
Colour the worksheets completed.	3:03	3:04	3:05	3:06	3:06										
	3:03E	3:04C	3:05C		3:11										
	3:04C		3:10		3:11E										
Retest															

Comments: _____

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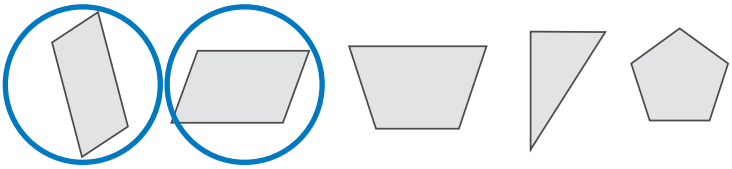
Level 3, Progress test 3, Answers

(2D Space)

1 : having difficulty
2 : developing understanding
3 : progressing well

For treatment, go to:

1 Circle the parallelograms.



3:07

1 2 3

2

a A parallelogram has **4** sides.

b Its opposite sides are **parallel** .

c Do parallelograms tessellate? **yes**

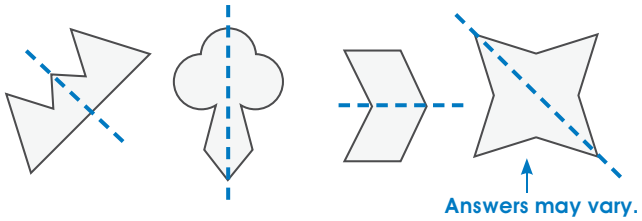
d What special quadrilaterals are also parallelograms?

rectangles , **squares** and **rhombuses**

3:07

1 2 3

3 a Draw a line of symmetry on each shape.

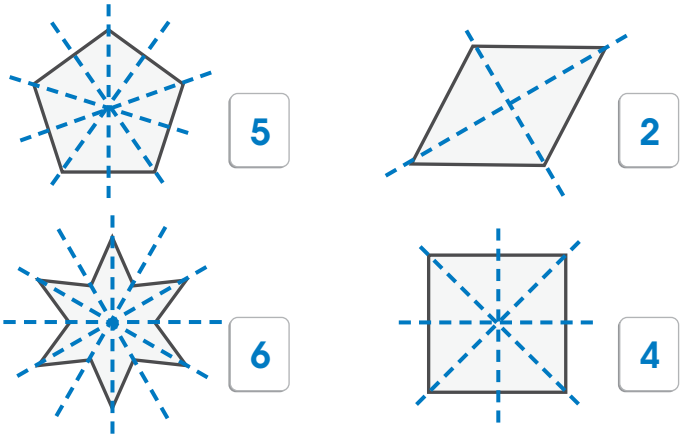


Answers may vary.

3:08

3:08E

b Draw and record the number of lines of symmetry for each shape.



5

2

6

4

1 2 3

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Name: _____ Class: _____

Progress Test Record (Print this sheet to keep a record of remedial treatment.)

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3:08 PTR 2D Space, Level 3

Question	1	2	3											
Errors ⁄														
Colour the worksheets completed.	3:07	3:07	3:08											
			3:08E											
Retest														

Comments: _____

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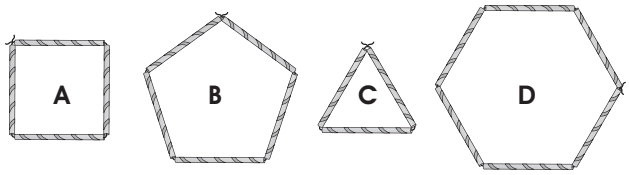
Level 3, Progress test 4, Answers

(2D Space)

For treatment, go to:

3:09

1



Which frame:

a is a model of an hexagon? **D**

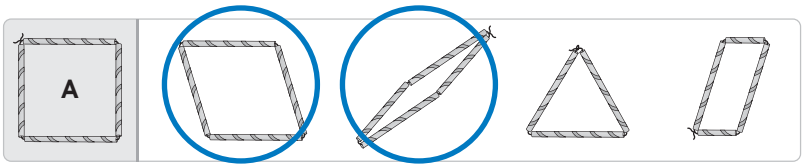
b is a model of a pentagon? **B**

c has five lines of symmetry? **B**

d is rigid (won't change shape)? **C**

2

Circle the shapes that can be made from shape A.

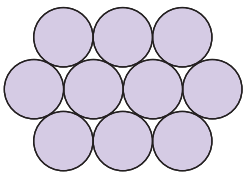


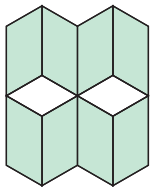
1 2 3

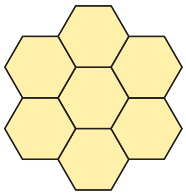
3

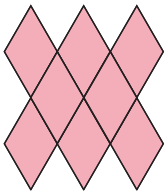
In which of these patterns does the coloured shape tessellate?

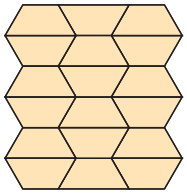
C, D and E

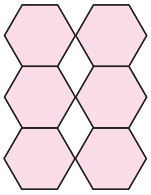
A 

B 

C 

D 

E 

F 

3:11

3:11E

1 2 3

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Name: _____ Class: _____

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3:11 PTR 2D Space, Level 3

Question	1	2	3											
Errors ⁄														
Colour the worksheets completed.	3:09	3:09	3:11											
			3:11E											
Retest														

Comments: _____

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