

Lesson 2: Ratio and scale factors

Challenge
1

- 1 a 1 : 2 e 5 : 9
b 1 : 3 f 7 : 10
c 4 : 5 g 5 : 6
d 4 : 3 h 5 : 11
- 2 a A 2 : 3 b A 2 out of 5
B 4 : 1 B 4 out of 5
C 2 : 5 C 2 out of 7
D 2 : 71 D 2 out of 9
- 3 a The scale factor is 3.
b Sides are 9 cm, 12 cm and 15 cm.

Challenge
2

- 1 a A 1 : 2 : 3 b A 1 out of 6
B 3 : 4 : 2 B 3 out of 9
C 2 : 3 : 5 C 1 out of 5
D 4 : 2 : 1 D 4 out of 7
- 2 Large triangle: scale factor 3;
c 27 m d 12 m
Medium triangle: scale factor 1.5;
a 6 m b 10.5 m
- 3 a i Year 3: 50 boys, 30 girls
Year 4: 36 boys, 48 girls
Year 5: 48 boys, 42 girls
Year 6: 45 boys, 40 girls
ii 179 boys
iii 160 girls
b 9 : 8 (When the new boy joins there
will be 180 boys and 160 girls.)

Challenge
3

- a Any five from the ratios below
- b All the repeating patterns shown below
- | R : B | R : B |
|--------|--------|
| 1 : 1 | |
| 1 : 2 | 2 : 1 |
| 1 : 4 | 4 : 1 |
| 2 : 3 | 3 : 2 |
| 1 : 5 | 5 : 1 |
| 3 : 7 | 7 : 3 |
| 1 : 9 | 9 : 1 |
| 7 : 8 | 8 : 7 |
| 4 : 11 | 11 : 4 |
| 1 : 14 | 14 : 1 |
| 2 : 13 | 13 : 2 |