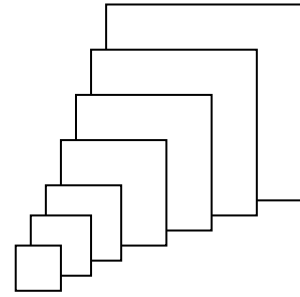


Enlarging Shapes

Areas

1. Find the area of a square with side length 2 m.
2. Find the area of a square with side length 4 m.
3. Find the area of a square with side length 10 m.
4. If you multiply the side lengths of a square by 2, what does the area get multiplied by?
5. What if you multiply the side length by 5?
6. What if you multiply it by any other number?
7. Find the area of a right-angled triangle with sides 3 m, 4 m and 5 m.
8. Find the area of a triangle with sides twice as long as the one in the last question.
9. If you double the side lengths of a triangle, what does the area get multiplied by?
10. What if you multiply the side lengths by 10?
11. Find the area of a circle with diameter 4 m.
12. Find the area of a circle with diameter 12 m.
13. What happens to the area of a circle when you multiply the diameter by 3?
14. What happens to the area of a circle when you multiply the diameter by 10?
15. What about any other number?
16. Write a brief statement that sums up your findings from Questions 1 to 15.
17. Can you explain your findings?



Perimeters

18. Find the perimeter of a square with side length 5 m.
19. Find the perimeter of a square with side length 10 m.
20. If you double the side length of a square, what does the perimeter get multiplied by?
21. What about multiplying the side length by any other number?
22. What about a hexagon?
23. If you double the diameter of a circle, what does the circumference get multiplied by?

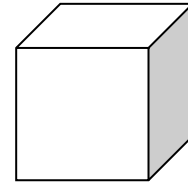
Diagonals

24. Find the length of the diagonal of a square with sides 3 m.
25. Find the length of the diagonal of a square with sides 6 m.
26. If you double the side length of a square, what do the lengths of the diagonals get multiplied by?
27. What about multiplying the side length by any other number?

28. What about a non-square rectangle?
29. Write a brief statement that sums up your findings from Questions 18 to 28.

Volume

30. Find the volume of a cube with edge length 2 cm.
31. Find the volume of a cube with edge length 4 cm.
32. If you double the edge length of a cube, what does the volume get multiplied by?
33. What if you multiply the edge length by 3?
34. What if you multiply it by any other number?
35. What about other 3-D shapes?
36. Write a brief statement that sums up your findings from Questions 30 to 34.
37. Can you explain your findings?



Surface area

38. Find the surface area of a cube with edge length 10 cm.
39. Find the surface area of a cube with edge length 20 cm
40. If you double the edge length of a cube, what does the surface area get multiplied by?
41. What if you multiply it by 6?
42. What if you multiply it by any other number?
43. What about other 3-D shapes?
44. What can you say about a sphere?
45. Write a brief statement that sums up your findings from Questions 38 to 44.

Summary

46. Write a statement that summarises all your findings?

Optional Challenge

47. What do you have to multiply the side lengths of a square by to double the area?
48. What about if you want to multiply the area by other numbers?
49. What do you have to multiply the side lengths of a cube by to double the volume ?
50. What about if you want to multiply the volume by other numbers?
51. If you double the surface area of a shape by making it bigger, what do you multiply the volume by?
52. What if you multiply the surface area by other numbers?