Numbers and shapes

VOCABULARY PRACTICE

INTERMEDIATE | B1-B2

Name: _____ **Date:** _____

1 Match each mathematical term with its meaning.

1 fraction	____	a amount of space inside a solid object
2 decimal	____	b number that divides another exactly
3 percentage	____	c number written using a decimal point
4 multiple	____	d total length around a flat shape
5 factor	____	e part of a whole written with one number over another
6 perimeter	____	f amount of surface inside a flat shape
7 area	____	g number obtained by multiplying a given number by an integer
8 volume	____	h fraction expressed as a number out of one hundred

2 Complete the mathematical collocations.

calculate | convert | decimal | factor | nearest | percentage | square | whole

1 a _____ number

2 _____ the area

3 a common _____

4 _____ a fraction into a decimal

5 round to the _____ ten

6 a _____ point

7 a _____ metre

8 a _____ increase

3 Correct one mistake in each sentence.

1 A quarter is written as 0,25 in English. _____

2 The perimeter measures the space inside a shape. _____

3 Fifteen percentage of 200 is 30. _____

4 Six is a factor from twelve. _____

5 A cube has six squared faces. _____

6 The diameter is half the radius. _____

7 Three point fifty is normally written 3.5. _____

8 The volume of a rectangle is measured in cubic units. _____

Numbers and shapes

VOCABULARY PRACTICE

INTERMEDIATE | B1-B2

4 Complete the design note with words from the box.

area | decimal | diameter | fraction | perimeter | percentage | radius | volume

The circular table has a **1** _____ of 60 cm, so its **2** _____ is 30 cm. The rectangular rug measures 3 m by 2 m. Its **3** _____ is 10 m and its **4** _____ is 6 square metres. A box has length, width and height, so we calculate its **5** _____. Half can be written as a **6** _____, the **7** _____ 0.5, or the **8** _____ 50%.

5 Read the text and answer the questions briefly.

Why scale matters

A scale drawing represents a real object at a smaller or larger size while preserving its proportions. On a map with a scale of 1:10,000, one centimetre represents 10,000 centimetres, or 100 metres, in reality. Scale allows architects, engineers and mapmakers to show large objects clearly. However, a measurement error on the drawing is multiplied when converted to the real size.

1 What does a scale drawing represent? _____

2 What does it preserve? _____

3 At 1:10,000, what does 1 cm represent? _____

4 Who uses scale drawings? _____

5 Why are they useful? _____

6 What happens to an error after conversion? _____

6 Rewrite using the word in capitals.

1 The boundary of the garden is 24 metres long. **PERIMETER** _

2 Three quarters is the same as 75%. **EQUIVALENT** _____

3 We changed 0.4 into 40%. **CONVERTED** _____

4 The container holds 12 cubic metres. **VOLUME** _____

OVER TO YOU

Write a **100-120 word** explanation of how numbers and measurements are used in planning a room, garden or object.

[ ] Use at least ten target expressions. [ ] Include units correctly. [ ] Explain calculations clearly.

Numbers and shapes

ANSWER KEY

1 Mathematical terms

1 **e** 2 **c** 3 **h** 4 **g** 5 **b** 6 **d** 7 **f** 8 **a**

2 Mathematical collocations

1 **whole** 2 **calculate** 3 **factor** 4 **convert** 5 **nearest** 6 **decimal** 7 **square** 8 **percentage**

3 Corrections

1 written as **0.25** 2 **area** measures the space 3 fifteen **percent** 4 factor **of** twelve
5 six **square** faces 6 diameter is **twice** the radius 7 three point **five** 8 volume of a **cuboid**

4 Design note

1 **diameter** 2 **radius** 3 **perimeter** 4 **area** 5 **volume** 6 **fraction** 7 **decimal** 8 **percentage**

5 Reading - suggested answers

1 A real object at another size. 2 Its proportions. 3 100 metres. 4 Architects, engineers and mapmakers.
5 They show large objects clearly. 6 It is multiplied.

6 Rewriting - possible answers

1 The garden's **perimeter** is 24 metres. 2 Three quarters is **equivalent** to 75%. 3 We **converted** 0.4 into 40%. 4 Its **volume** is 12 cubic metres.

Over to you: Answers will vary. Check measurement vocabulary, units and numerical accuracy.