

# Educational Worksheet

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## Grade 7 Mathematics Worksheet

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### Map Scale

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**Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Class:** \_\_\_\_\_

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### Learning Objectives

By the end of this worksheet, you will be able to: - Understand and interpret map scales - Convert between map distances and real distances - Solve problems involving scale drawings - Apply scale concepts to real-world situations

### Instructions

- Show all your working clearly
  - Include correct units in your answers
  - Use a ruler when measuring is required
  - Remember: Map distance  $\times$  Scale = Real distance
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### Section A: Understanding Scale (6 marks)

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**Answer these questions about map scales:**

1. **Scale Interpretation:** A map has a scale of 1:50,000. This means:

- 1 cm on the map represents \_\_\_\_\_ cm in real life
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- 1 cm on the map represents \_\_\_\_\_ km in real life

2. **Scale Comparison:** Which scale shows more detail? Circle the correct answer: 1:25,000 or 1:100,000

**Explain your answer:** \_\_\_\_\_

3. **Scale Writing:** Write these scales in ratio form:

- 1 cm represents 2 km: \_\_\_\_\_
- 1 cm represents 500 m: \_\_\_\_\_
- 2 cm represents 1 km: \_\_\_\_\_

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## Section B: Map Distance to Real Distance (8 marks)

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**Convert these map distances to real distances:**

4. **Scale 1:20,000** Map distance: 5 cm Real distance: \_\_\_\_\_ m

5. **Scale 1:50,000** Map distance: 3.5 cm  
Real distance: \_\_\_\_\_ km

6. **Scale 1:25,000** Map distance: 8 cm Real distance: \_\_\_\_\_ m

7. **Scale 1:100,000** Map distance: 2.4 cm Real distance: \_\_\_\_\_ km

8. **Scale 1:10,000** Map distance: 12.5 cm Real distance: \_\_\_\_\_ m

9. **Scale 1:75,000** Map distance: 6.8 cm Real distance: \_\_\_\_\_ km

10. Scale 1:200,000 Map distance: 4.5 cm Real distance: \_\_\_\_\_ km

11. Scale 1:15,000 Map distance: 9.2 cm Real distance: \_\_\_\_\_ m

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## Section C: Real Distance to Map Distance (8 marks)

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Convert these real distances to map distances:

12. Scale 1:30,000 Real distance: 1.5 km Map distance: \_\_\_\_\_ cm

13. Scale 1:40,000 Real distance: 800 m Map distance: \_\_\_\_\_ cm

14. Scale 1:25,000 Real distance: 2.5 km Map distance: \_\_\_\_\_ cm

15. Scale 1:60,000 Real distance: 1,200 m Map distance: \_\_\_\_\_ cm

16. Scale 1:80,000 Real distance: 3.2 km Map distance: \_\_\_\_\_ cm

17. Scale 1:50,000 Real distance: 750 m Map distance: \_\_\_\_\_ cm

18. Scale 1:35,000 Real distance: 1.75 km Map distance: \_\_\_\_\_ cm

19. Scale 1:45,000 Real distance: 900 m Map distance: \_\_\_\_\_ cm

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## Section D: Scale Drawing Problems (8 marks)

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Solve these scale drawing problems:

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- The real garden is 24 m long. How long should she draw it on her plan?

**Answer:** \_\_\_\_\_ cm

21. **School Map:** On a school map with scale 1:500, the playground measures 8 cm × 6 cm.

- What are the real dimensions of the playground?

**Answer:** \_\_\_\_\_ m × \_\_\_\_\_ m

22. **Model Car:** A model car is built to a scale of 1:32. The real car is 4.8 m long.

- How long is the model car?

**Answer:** \_\_\_\_\_ cm

23. **Room Plan:** An architect draws a room plan using scale 1:100. The real room is 5.5 m × 4.2 m.

- What should the dimensions be on the plan?

**Answer:** \_\_\_\_\_ cm × \_\_\_\_\_ cm

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## Section E: Real-World Applications (10 marks)

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**Apply your scale knowledge to these situations:**

24. **Walking Route:** On a map with scale 1:25,000, Tom measures a walking route as 14 cm.

- How far will he actually walk?
- If Tom walks at 4 km/h, how long will the walk take?

Distance:	km	Time:	hours	minutes
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- The road on the map is 23 cm long
- What is the real length of the road?
- If the road costs £50,000 per km to build, what will the total cost be?

**Real length:** \_\_\_\_\_ km **Total cost:** £ \_\_\_\_\_

26. **Treasure Hunt:** Children are using a map with scale 1:2,000 for a treasure hunt.

- They need to walk from point A to point B, which are 15 cm apart on the map
- Then from point B to point C, which are 8 cm apart on the map
- What is the total real distance they need to walk?

**Answer:** \_\_\_\_\_ m

27. **Comparison Problem:** Two maps show the same area:

- Map 1 has scale 1:50,000 and the distance between two towns is 6 cm
- Map 2 has scale 1:100,000
- What would the distance between the same two towns be on Map 2?

**Answer:** \_\_\_\_\_ cm

28. **Scale Drawing Challenge:** A rectangular field is 150 m long and 80 m wide.

- Draw this field using a scale of 1:5,000
- What dimensions should your drawing have?
- If you used a different scale of 1:2,000, what would the dimensions be?

**Scale 1:5,000:** \_\_\_\_\_ cm × \_\_\_\_\_ cm **Scale 1:2,000:** \_\_\_\_\_ cm × \_\_\_\_\_ cm

**Total: \_\_\_\_\_ / 40 marks**

## **Self-Assessment**

- I understand what map scales mean: ☐ Confident ☐ Mostly ☐ Need practice
- I can convert map distances to real distances: ☐ Confident ☐ Mostly ☐ Need practice
- I can convert real distances to map distances: ☐ Confident ☐ Mostly ☐ Need practice
- I can solve scale problems: ☐ Confident ☐ Mostly ☐ Need practice

## **Key Formulas to Remember**

- **Real distance = Map distance  $\times$  Scale number**
- **Map distance = Real distance  $\div$  Scale number**
- **Always check your units!**