

Educational Worksheet

Grade 7 Mathematics Worksheet

Map Scale

Name: _____ Date: _____ Class: _____

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)

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
- 1 cm on the map represents _____ m in real life
- 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)

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)

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)

Solve these scale drawing problems:

20. **Garden Design:** Sarah is designing a garden. She draws a plan using a scale of 1:200.

- 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

Section E: Real-World Applications (10 marks)

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

25. **City Planning:** A town planner uses a map with scale 1:10,000 to plan a new road.

- 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?

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!**