

Chapter 8 Lesson 6 Modelling Area

Answers

- A. 20 cm by 14 cm
- B. Check student models and scales for correctness.
- C. It represents $2\text{ m} \times 2\text{ m} = 4\text{ m}^2$ of real area because 1 cm on the model represents 2 m of the playground.
- D. Check student work for accuracy and proper scale. Students may use the model perimeter as a part of the booth.
- E. $1\text{ cm} \times 2\text{ cm} = 2\text{ cm}^2$
- F. $2\text{ m} \times 6\text{ m} = 12\text{ m}^2$
- G. Check student work for accuracy and for reasonableness as to booth size.
1. For example: Yes, the scale makes sense because it fits nicely on the page.
 2. For example, the centimetre is used for the model booth, and the metre for the real booth. If the real booth were measured in centimetres the numbers would be really large. If metres were used for the model, the numbers would have to be in hundredths.
 3. For example, using a scale model lets you measure the model and then calculate the measurements of the real object. On a sketch without units, you might draw objects like booths too big or too small, so you wouldn't get a good idea of their actual size.
4. a) For example, $1\text{ cm} = 1\text{ m}$. This scale is easy to work with and fits nicely on one sheet of grid paper.
- b) Check student models for accuracy and proper use of scale.
- c) 252 m^2
- d) Using the scale above, $18\text{ cm} \times 14\text{ cm} = 252\text{ cm}^2$
- e) Using the scale above, 10 cm^2
5. a) square millimetres b) square kilometres
6. a) $50\text{ m} \times 24\text{ m} = 1200\text{ m}^2$
- b) Check student models for accuracy and proper use of scale.
- c) Answers will depend on the scale chosen. For $1\text{ cm} = 2\text{ m}$, the answer would be $25\text{ cm} \times 12\text{ cm} = 300\text{ cm}^2$.
- d) For example, I used a scale of $1\text{ cm} = 2\text{ m}$. Each centimetre on the model equals 2 m in the pool, so 1 cm^2 represents 4 m^2 in the pool. The area of the roped-off region on the model will thus be $240 \div 4 = 60\text{ cm}^2$.