

Building a Deck

Standards:

- Students will be able to calculate the area and perimeter of two-dimensional figures
- Students will be able to identify and apply properties of triangles

Your family just bought a new house and is excited to begin remodeling parts of the house and property before moving in. Your family loves the outdoors, so you are going to build a nice deck so you can spend time outside. You also want to put up a wooden fence around the edge of the deck so your rambunctious dog can't run away. Attached is an architectural drawing of the deck you would like to build. Your task is to find out how big the deck is (the total area) as well as how many feet of fence you will need to surround the deck (the total perimeter). Show all work and answer the questions on the attached worksheet.

Rubric for the deck building area assessment:

Total score: _____ / 23

	Poor	Good	Excellent
Deck is divided into appropriate shapes and justification is given for the division	Deck is not logically divided into shapes, and little explanation is given (1 pt)	Deck is divided into shapes, but explanation is incomplete or does not fully justify the division (3 pts)	Deck is divided into appropriate shapes, and a complete justification is given of the division (5 pts)
Area of the upper deck is accurate and work is clear	Area is inaccurate with major mistakes and work is unclear (1 pt)	Area is inaccurate with minor mistakes and work is clear or area is accurate but work is unclear (2 pts)	Area is accurate, work is clear, and it completely supports the answer (3 pts)
Area of the main deck is accurate and work is clear	Area is inaccurate with major mistakes and work is unclear (1 pts)	Area is inaccurate with minor mistakes and work is clear or area is accurate but work is unclear (3 pts)	Area is accurate, work is clear, and it completely supports the answer (5 pts)
Area of the steps is accurate and work is clear	Area is inaccurate with major mistakes and work is unclear (1 pt)	Area is inaccurate with minor mistakes and work is clear or area is accurate but work is unclear (2 pts)	Area is accurate, work is clear, and it completely supports the answer (3 pts)
Total area is accurate and work is clear	Area is inaccurate based on previous answers (1 pt)		Area is accurate based on previous answers and work is clear and completely supports the answer (2 pts)
Perimeter is accurate and work is clear	Perimeter is inaccurate with major mistakes, work is unclear, and triangle properties were not used or were used with major errors (1 pt)	Perimeter is inaccurate with minor mistakes, work is clear, and triangle properties were used to find missing lengths, with possible minor errors (3 pts)	Perimeter is accurate, work is clear and completely supports answer, and properties of triangles are clearly and correctly used to determine unknown measurements (5 pts)