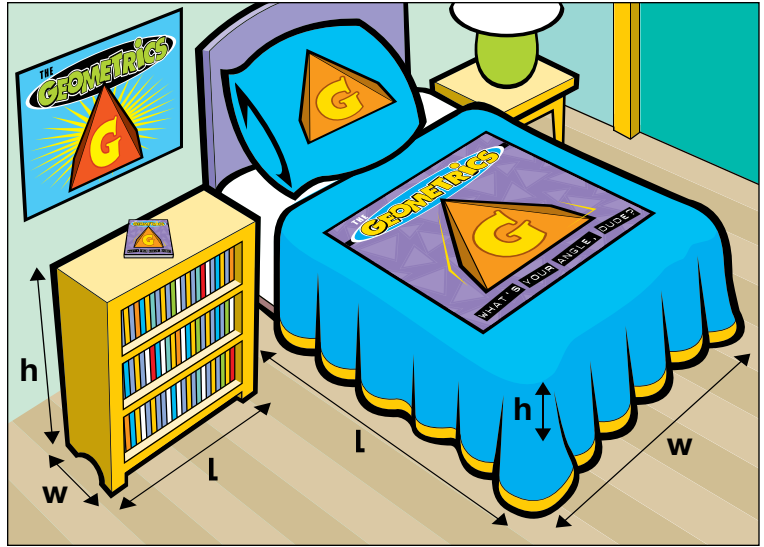


Covering Up

You can use the same skills at home that the Geometrics Stage Crew uses to do their job. Figuring out surface area can help you do things like paint objects or calculate how much fabric is needed to cover a bed. **Solve the hypothetical exercises below to see how surface area formulas might be used at home.**



- 1** You have a CD rack at home, which is a rectangular prism that measures 3 feet long by 3 feet high with a width of 1 foot. How many square feet would you be painting to cover the two sides, the top, and the back?

FEATURED FORMULAS

Surface Area of 3D Shapes:

Rectangular Prism: $SA = 2 \cdot (l \cdot w + l \cdot h + w \cdot h)$

Cone: $SA = (\pi \cdot r^2) + (\pi \cdot r \cdot \text{slant})$

- 2** The Geometrics Stage Crew is selling cover sheets for beds that have the band's logo on them. A full-size mattress measures 54 inches wide by 75 inches long by 6 inches high. If the sheet were to cover all but the bottom of the mattress, what is the minimum total surface area? State your answer in square feet.

NOW TRY THIS:

At Geometrics shows, some fans wear cone-shaped hats because of the band's fondness for shapes. You decide to join in and paint a birthday hat you have at home. You have a 1-ounce jar of gold paint, which will cover about 33 square inches. You have a hat with the measurements of $d = 4$ inches and $\text{slant} = 7$ inches. Do you have enough paint to cover the hat? To figure this out you need to use the formula for the surface area of a cone: $SA = (\pi \cdot r^2) + (\pi \cdot r \cdot \text{slant})$. Hint: You don't need the $(\pi \cdot r^2)$ part of the formula because that's the open circle part that will fit on your head.