Chapter 9 Problem Wrap-Up

Student Text Page
409

Suggested Timing
15–20 min

Tools
- calculators

Related Resources
BLM 9.CP.1 Chapter 9 Problem Wrap-Up Rubric

Summative Assessment

- Use **BLM 9.CP.1 Chapter 9 Problem Wrap-Up Rubric** to assess student achievement on the Chapter Problem Wrap-Up.

Accommodations

Language/ESL—Provide a reading buddy to read the problem aloud.

Motor—Provide additional time as needed.

Perceptual—Encourage students to draw and label diagrams of the two containers.

Teaching Suggestions

- Remind students to refer to the solutions to the Chapter Problem questions that they completed in each section of the chapter to help them with the Chapter Problem Wrap-Up.
- Consider having students work in groups to put together their own marketing line for skateboard wheels and present it to the class. If so, provide time for students to brainstorm what they would like to do and how they would do it, before preparing the presentation.
- It may be possible to involve the business, art and/or design technology departments in this project. If so, consider evaluating parts of the assignment to allow for each student to be graded based on his or her own work in the project.
- You may need to assign responsibilities to individuals in each group (e.g., marketing strategy, product development, actual product production, and actual packaging creation). You may decide to have a project manager who is charged with keeping everything on time by developing a plan and timelines and checks with group members about progress.

Level 3 Sample Response

a) Canada

$$\begin{aligned} SA &= 2\pi r^2 + 2\pi rh \\ &= 2\pi(2.78)^2 + 2\pi(2.78)(8.5) \\ &= 197.03 \text{ cm}^2 \end{aligned}$$

b) United States

$$\begin{aligned} SA &= 2\pi r^2 + 2\pi rh \\ &= 2\pi\left(\frac{2.25}{2}\right)^2 + 2\pi\left(\frac{2.25}{2}\right)(3.5) \\ &= 32.69 \text{ in}^2 \end{aligned}$$

Given that there are 2.54 cm in 1 in.: $32.69 \text{ in}^2 \times \left(\frac{2.54}{1}\right)^2 = 210.90 \text{ cm}^2$
Therefore, the container for the United States requires more material to construct.
The difference is $210.90 - 197.03 = 13.87 \text{ cm}^2$.

Level 3 Notes

Look for the following:

- Calculations that are well organized and easy to follow
- Units present at the end of each part of the calculations
- Accurate conversions from cm^2 to in.^2 or vice versa
- Comparison of two surface area calculations after the conversion including a concluding statement about which requires more material. **Note:** Converting measurements to cm^2 or in.^2 does not change the conclusion that the U.S. container requires more material.
- Subtraction of two surface area values from each other to determine how much more material is in the U.S. container. **Note:** The difference is 2.15 in.^2.

What Distinguishes Level 2

At this level, look for the following:

- Calculations that are done but not clearly organized and require some effort to follow
- Some units missing or incorrect (e.g., cm instead of cm^2)
- Completed conversion with some minor errors (e.g., failure to square the conversion factor. Squaring is required because the measure of surface area is squared.)
- Subtraction of two surface area values missing

What Distinguishes Level 4

At this level, look for the following:

- Calculations that are well organized, neat, and clearly labelled to introduce each step
- All units present and with the correct exponent for surface area
- Clear statement of the conversion factor prior to completing the conversion from one system of measurement to another
- Clear concluding statement about which container requires more material
- Subtraction of two surface area values from each other including a concluding statement about how much more material is in the U.S. container