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5. Community Service

Context

Construction and landscaping

Topics

Measurement, surface area, estimation

Overview

In this activity, students prepare for a community-service project where they will help refurbish their classroom.

Objectives

Students will

- determine the surface area of a given space.
- develop a cost estimation plan.
- calculate the cost to paint a given area.

Materials

- Calculator
- Tape measure
- Yardstick or meterstick

Teaching Notes

1. Students can work in pairs or small groups for this activity.

2. During the activity, focus students' attention on developing the plan for determining cost—not just on conducting the measurements.
3. For question number one, students will generate ideas such as measuring the room, how to deal with areas that are not painted, cost of paint, cost of brushes and other painting tools, how much paint is needed, and so on.
4. After students brainstorm about what they need to complete the project, let them know that a gallon of paint costs about \$15 and covers approximately 300 square feet. These amounts will vary depending on the brand of paint. It may be useful to gather hardware store flyers and let students look through those to determine paint costs.

Selected Answers

Making a Plan

1. Possible answers include: measure the surface area of the room, measure the surface area of surfaces not to be painted, amount of paint needed, cost of paint, cost of brushes, and cost of painting supplies like tape and drop cloths.
- 2–4. Answers will vary depending on the group's plan and the size of the room.

Extension Activity

Have students make cost estimates for painting all the classrooms at the school.

5. Community Service

The school district has asked for volunteers to help refurbish some of the classrooms at your school. You and some of your civic-minded friends have volunteered to assist with the project. As luck would have it, the first project is to paint your classroom. Since the district is on a very tight budget, before you dive in and start painting, you have to plan the job carefully so that costs are kept to a minimum. Follow the steps below to help guide you in developing a plan for determining the cost of painting the classroom.



Making a Plan

- As a group, consider for a moment what information you might need to ensure that you arrive at the most accurate cost estimate. In the space below, list the ideas your group came up with.

- Compare your ideas with those of one or two other groups. Add anything that you might have left off your list. Write the modifications to your list below.

- On the page titled Cost Estimation Plan, organize the group's ideas into a step-by-step list in the proper sequential order. As you organize your plan, keep in mind that the goal, or outcome of the plan, is to be able to make a cost estimate for painting the classroom. Determine the surface area covered by a gallon of paint. Decide how many coats of paint will be necessary.
- Carry out your plan and organize the data in the Cost Estimation Table. List the cost estimate below.

Cost estimate: _____

(continued)



5. Community Service *(continued)*

Cost Estimation Plan



(continued)

