CALCULATING GARDEN CENTER PRICING

Performance Standard 6D.H

Calculate the original pricing of a poinsettia, to allow for the percentage of markup desired.

- *Mathematical knowledge:* determine costs after percentage decrease.
- *Strategic knowledge: s*olve problem using systematic process.
- *Explanation:* explain completely what was done and why it was done.

Procedures

1. ***In order to solve problems using comparison of quantities, ratios, proportions and percents,*** provide students with sufficient learning opportunities to develop the following:
    - Solve problems that involve percents, including percent increase and percent decrease, regardless of information that is missing.

    Horticulture students interested in managing a greenhouse/nursery, retail garden center or floristry business need to be able to calculate percent increase and percent decrease to price merchandise and run a profitable business. This standard aligns with Skill 21 from the Retail Garden Center Cluster occupational skill standards and Skill 19 from the Floristry Cluster occupational skill standards (Stock and price merchandise).
2. Give students the assessment sheet, and have them work individually. They may use calculators but must explain their calculations on their sheet.

    The Hale High School FFA chapter is having a sale on 4" potted poinsettias they have grown in their greenhouse. They have advertised 10% off all 4" poinsettias. These plants cost the students $2.32 each. They want to price the poinsettias so that the markup will be at least a 60%, even at the sale price. What is the lowest regular selling price for each poinsettia that will ensure this markup?
3. Use the standard scoring rubric. Give each student a score in each of the three categories. A score of 4 should indicate completely correct solutions to all parts of the problem, with complete and correct justifications of their reasoning. A 3 should represent correct or nearly correct solutions to all parts, with only minor computational errors making their solutions inaccurate; their rationale should be sound but may not be completely explained. A 2 would indicate that students have some idea about how to answer the questions but make major errors in computation and/or reasoning that affect their answers. A 1 may have a correct answer for one part but generally shows little understanding in their rationale for their procedures and processes. A score of 0 generally reflects no correct responses and no logical rationale for their procedures and processes.
4. Minor errors in computation include making errors in the actual addition or multiplication and rounding incorrectly. Major errors include using the wrong operations or formulas to relate terms.
5. The lowest possible regular price is $4.14. This will allow the sale price of 10% off to be $3.72 which is 160% of the given cost of $2.32. In each case the price was rounded up to make sure that the store made a minimum of their 60% markup. Students who take the percentage of the wrong price or who use the wrong operation should receive no more than a 2 on this item. Students who do not round appropriately may receive a 3 but not a 4 in mathematical knowledge.

Examples of Student Work

- **Meets**
- **Exceeds**

Time Requirements

- One class period

Resources

- Copies of the "Calculating Garden Center Pricing" task sheet
- Pencil
- Calculator
- Mathematics Rubric

NAME _____ DATE _____

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Student Task Sheet

Solve the following problem. Make sure to completely explain your reasoning.

The Hale High School FFA chapter is having a sale on 4" potted poinsettias they have grown in their greenhouse. They have advertised 10% off all 4" poinsettias. These plants cost the students $2.32 each. They want to price the poinsettias so that the markup will be at least a 60%, even at the sale price. What is the lowest regular selling price for each poinsettia that will ensure this markup?

MATHEMATICS RUBRIC

NAME _____ **DATE** _____

- Exceeds standard (must receive a 4 in each area)
- Meets standard (must receive all 3's or a combination of 3's and 4's)
- Approaches standard (must receive all 2's or any combination which may include a 3 or a 4)
- Begins standard (has no 3's or 4's but not all 1's)
- Absent (has all 1's and 0's)

	Mathematical Knowledge	**Strategic Knowledge**	**Explanation**
4	• Wrote the right answer. • Used math words correctly to show understanding of how math works. • Worked it out with no mistakes. • Used the right math words and labeled the answers.	• Identified all the important parts of the problem, and knew how they went together. • Showed all the steps used to solve the problem.	• Wrote what was done and why it was done. • If a drawing was used, all of it was explained in writing.
3	• Knew how to do the problem, but made small mistakes.	• Identified most of the important parts of the problem. • Showed most of the steps used to solve the problem.	• Wrote mostly about what was done. • Wrote a little about why it was done. • If a drawing was used most of it was explained in writing.
2	• Understood a little, but made a lot of big mistakes.	• Identified some of the important parts of the problem. • Showed some of the steps used to solve the problem.	• Wrote some about what was done or why it was done but not both. • If a drawing was used, some of it was explained in writing.
1	• Tried to do the problem, but didn't understand it.	• Identified almost no important parts of the problem. • Showed almost none of the steps used to solve the problem.	• Wrote or drew something that didn't go with the answer. • Wrote an answer that was not clear.
0	• No answer attempted.	• No strategy shown.	• No written explanation.
Score			