

Number Sense and
Numeration /
Data Management
and Probability

Pizza for a Class Party

The Task

This task required students to:

- use price lists to determine the cost of pizzas from two different parlours, and then determine which parlour provides the best value;
- use collected and given data to make decisions about class pizza orders;
- solve problems related to fractional parts of pizzas;
- show possible combinations of pizza toppings.

Presented with flyers from two pizza parlours, students determined and recorded all the possible prices of large pizzas from the two parlours, and determined which of the two parlours had the cheaper pizza. Students then conducted a survey of the pizza needs of their class, collected and graphed the data, and used the information to decide what type of pizza should be bought for the class.

Next, students used given data from a tally sheet and a bar graph to decide how much pizza a class should order. They also solved problems about fractional parts of pizzas, and they showed the possible combinations of given pizza toppings.

Expectations

This task gave students the opportunity to demonstrate their achievement of all or part of each of the following selected expectations from two strands – Number Sense and Numeration, and Data Management and Probability. Note that the codes that follow the expectations are from the Ministry of Education's *Curriculum Unit Planner* (CD-ROM).

Number Sense and Numeration

Students will:

1. represent, and explore the relationships between, decimals, mixed numbers, and fractions using concrete materials and drawings (4m1);
2. compare and order whole numbers and decimals using concrete materials and drawings (4m2);
3. understand and explain basic operations (addition and subtraction) of decimals by modelling and discussing a variety of problem situations (4m4);
4. solve problems involving whole numbers and decimals, and describe and explain the variety of strategies used (4m7);
5. compare and order whole numbers and decimals from 0.01 to 10 000 using concrete materials, drawings, and symbols (4m13);

6. represent and explain number concepts and procedures (4m15);
7. represent, compare, and order mixed numbers and proper and improper fractions with like denominators (e.g., $\frac{1}{5}$ and $\frac{3}{5}$ or $\frac{1}{8}$ and $\frac{4}{8}$) using concrete materials and drawings (4m18);
8. select the appropriate operation and solve one-step problems involving whole numbers and decimals with and without a calculator (e.g., how much change will you receive when you purchase an \$8.95 item with \$10?) (4m30).

Data Management and Probability

Students will:

9. collect and organize data and identify their use (4m101);
10. interpret displays of data and present the information using mathematical terms (4m103);
11. conduct surveys and record data on tally charts (4m108);
12. explain how data were collected and describe the results of a survey (4m110);
13. use conventional symbols, titles, and labels when displaying data (4m111);
14. construct labelled graphs both by hand and by using computer applications, and create intervals suited to the range and distribution of the data gathered (4m114);
15. read and interpret data presented on tables, charts, and graphs, and discuss the important features (4m115).

Prior Knowledge and Skills

To complete this task, students were expected to have some knowledge or skills relating to the following:

- collecting, organizing, displaying, and interpreting data
- designing and conducting surveys
- representing common fractions and mixed numbers using concrete materials
- making a systematic list
- solving problems involving operations with whole numbers and decimals

For information on the process used to prepare students for the task and on the materials and equipment required, see the Teacher Package reproduced on pages 58–64 of this document.

Task Rubric – Pizza for a Class Party

Expectations*	Level 1	Level 2	Level 3	Level 4
Problem solving				
	The student:			
1, 2, 4	– selects and applies a problem-solving strategy that leads to an incomplete or inaccurate solution	– selects and applies an appropriate problem-solving strategy that leads to a partially complete and/or partially accurate solution	– selects and applies an appropriate problem-solving strategy that leads to a generally complete and accurate solution	– selects and applies an appropriate problem-solving strategy that leads to a thorough and accurate solution
Understanding of concepts				
	The student:			
3, 5, 6, 7, 10, 15	– demonstrates a limited understanding when interpreting data and making decisions based on available data – demonstrates a limited understanding of fractions and decimal numbers	– demonstrates a partial understanding when interpreting data and making decisions based on available data – demonstrates some understanding of fractions and decimal numbers	– demonstrates a general understanding when interpreting data and making decisions based on available data – demonstrates a general understanding of fractions and decimal numbers	– demonstrates a thorough understanding when interpreting data and making decisions based on available data – demonstrates an in-depth understanding of fractions and decimal numbers
Application of mathematical procedures				
	The student:			
8, 11, 13, 14	– uses computations and mathematical procedures that include many errors and/or omissions when constructing displays of data and performing calculations	– uses computations and mathematical procedures that include some errors and/or omissions when constructing displays of data and performing calculations	– uses computations and mathematical procedures that include few errors and/or omissions when constructing displays of data and performing calculations	– uses computations and mathematical procedures that include few, if any, minor errors or omissions when constructing displays of data and performing calculations
Communication of required knowledge				
	The student:			
3, 4, 9, 10, 12, 15	– uses words, pictures, and/or diagrams to describe data and number concepts with limited clarity	– uses words, pictures, and/or diagrams to describe data and number concepts with some clarity	– uses words, pictures, and/or diagrams to describe data and number concepts clearly	– uses words, pictures, and/or diagrams to describe data and number concepts clearly and precisely

*The expectations that correspond to the numbers given in this chart are listed on pages 12–13.

Note: This rubric does not include criteria for assessing student performance that falls below level 1.