



The BIG Mathematical Idea(s)

The students will UNDERSTAND



Numbers represent values that can be used in calculations and expressed in many ways.

Inquiry Question:

The parents at _____ Elementary have been given free hotdogs, hotdog buns, and small bags of chips from the local grocery store. The parents decide to have a Hot Lunch Day and sell these items. If the parents want to earn over \$500 and 200 students were to order both a hotdog and chips, what do you recommend the parents charge for each hotdogs and small bag of chips?

Curricular Competencies

The students will BE ABLE TO:

Reasoning and analyzing

- Estimate reasonably
- Develop mental math strategies and abilities to make sense of quantities
- Use reasoning and logic to explore and make connections

Understanding and solving

- Use multiple strategies to engage in problem solving (e.g., visual, oral, role-play, experimental, written, symbolic)
- Develop, construct, and apply mathematical understanding through role-play, inquiry, and problem solving
- Engage in problem-solving experiences that are connected to place, story, and cultural practices relevant to the local community

Communicating and representing

- Communicate in many ways (concretely, pictorially, symbolically, and by using spoken or written language to express, describe, explain, and apply mathematical ideas)
- Describe, create, and interpret relationships through concrete, pictorial, and

Mathematical Concepts

The students will KNOW:

Grade Three

- Number Concepts to 1 000
Addition and subtraction to 1 000
- Monetary denominations, using coins and bills
- Multiplication and division of single-digit numbers

Grade Four

- Number Concepts to 10 000
Addition and subtraction to 10 000
- Decimals to hundredths, including addition and subtraction
- Monetary calculations, purchasing and change
- Multiplication and division of two-or-

<p>symbolic representations</p> <ul style="list-style-type: none"> • Use technology appropriately to explore mathematics, solve problems, record, communicate, and represent thinking <p>Connecting and reflecting</p> <ul style="list-style-type: none"> • Visualize and describe mathematical concepts • Connect mathematical concepts to each other and make mathematical connections to the real world (e.g., in daily activities, local and traditional practices, the environment, popular media and news events, cross-curricular integration) • Share and reflect upon mathematical thinking <p>Draw upon local First Peoples knowledge and/or expertise of local Elders to make connections to mathematical topics and concepts</p>	<p>three digit numbers by one-digit numbers</p> <p>Grade Five</p> <ul style="list-style-type: none"> • Number Concepts to 1 000 000 • Addition and subtraction to 1 000 000 • Decimals to thousandths, including addition and subtraction • Multiplication and division of up to three-digit numbers • Simple financial plans
<p>Description of Learning Activity</p> <p>Every student should be able to show and communicate their understanding of the concepts, and be allowed to represent their understanding through concrete materials, pictures, numbers or words. Providing the opportunities for students to show what they know in a way that makes sense to them is a critical component. Ensure that the manipulatives and ‘thinking tools’ are accessible. Consider some guiding questions you might ask to scaffold or extend thinking.</p> <p><i>Before</i></p> <ul style="list-style-type: none"> • Have a class discussion about Hot Lunch Days. Ask the students to think-pair-share their thoughts about how the parents/organizers know how much food to order and prepare? How do you think they determine how much to charge for each item? How much money would a person pay for a hotdog and/or a small bag of chips? <p><i>During</i></p> <ul style="list-style-type: none"> • The teacher will read aloud the Inquiry Question and ask student to discuss how they might approach this question. The teacher will allow students to choose to work individually, in pairs, or small groups to solve the question. Each student/pair/group will be provided with a typed copy of the question on 11 x 17 paper. • The teacher will make concrete materials available, such as counters, play money, hundreds charts, base ten blocks, etc. for students to choose to use, should they wish. • The teacher will circulate and assist students as needed. <p><i>After</i></p>	

- Students will gather together as a class. Teacher will ask the students to communicate their response to the question. This will include sharing and explaining:
 - why they decided to charge what they did for the hotdog and small bag of chips
 - the strategies they used to determine their calculations

First People's Principles of Learning

Adaptations:

Students who have difficulty with decimals should be encouraged to use whole numbers for the cost of the items (e.g., \$1.00 as opposed to \$1.50). As well the desired total amount can be decreased from \$500 to a lesser amount (e.g., \$100)

Extensions:

For an extra challenge, teachers could take out the part about the food being donated and instead have the students research the cost of hotdogs, hotdog buns, and chips. They will then need to factor in their costs of purchasing the items to determine their overall earnings.

Assessment – Demonstrating Understanding of Content Through the Curricular Competencies

Curricular Competencies:

The students will develop the following curricular competencies to become Mathematical thinkers and problem solvers by:

Reasoning and analyzing

- Estimate reasonably
- Develop mental math strategies and abilities to make sense of quantities
- Use reasoning and logic to explore and make connections

Guiding Questions:

Teacher will circulate and record anecdotal comments. Choose one or more of the following to assess depending on the context of your class.

Reasoning and analyzing

- What type of estimates did you make during the process?
- What mental math strategies did you use?
- How did you determine what prices the parents should charge? Explain your reasoning.

Understanding and solving

- Use multiple strategies to engage in problem solving (e.g., visual, oral, role-play, experimental, written, symbolic)
- Develop, construct, and apply mathematical understanding through role-play, inquiry, and problem solving
- Engage in problem-solving experiences that are connected to place, story, and cultural practices relevant to the local community

Communicating and representing

- Communicate in many ways (concretely, pictorially, symbolically, and by using spoken or written language to express, describe, explain, and apply mathematical ideas)
- Describe, create, and interpret relationships through concrete, pictorial, and symbolic representations
- Use technology appropriately to explore mathematics, solve problems, record, communicate, and represent thinking

Connecting and reflecting

- Visualize and describe mathematical concepts
- Connect mathematical concepts to each other and make mathematical connections to the real world (e.g., in daily activities, local and traditional practices, the environment, popular media and news events, cross-curricular integration)
- Share and reflect upon mathematical thinking
- Draw upon local First Peoples knowledge and/or expertise of local Elders to make connections to mathematical topics and concepts

Understanding and solving

- What strategies did you use to determine your answer?
- Describe and compare the strategies you used.
- What connections were you able to make to real life hot lunch days?

Communicating and representing

- Explain how you represented your thinking.
- How would you interpret relationships through various representations?
- If you used technology, explain how you used it to communicate and represent your thinking.

Connecting and reflecting

- Explain how you visualized and proved your conjecture?
- What connections did you make?
- Reflect and identify the relationships represented.

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