



MONEY UNIT: Gr. 5

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Rationale

The ability for individuals to handle money properly and accurately is an essential life skill. Children earn, save, and spend money and wise usage will help to become informed consumers. Money involves mathematical ideas and concepts: addition, subtraction, multiplication, and division. This unit will focus on the students' understanding of skills that are developed when using money and the how and when to apply math skills.

Money is used universally and with the changing times is becoming more important in our lives. It tends to determine success, failure, and social status. It is necessary to have students understand that money does not determine one's worth and value as an individual. Hopefully this will lessen attitudes and biases towards societies' social classes.

Throughout this unit students will be involved in manipulative hands-on activities. Most activities will be set up in stations where students rotate at their pace. This will allow for independent learning as well as group work and peer teaching. The underlying concept of all the activities is problem solving. The problems are developed to challenge students based on abilities, to motivate based on interest, and to be meaningful to the students' lives: connecting mathematics to real life situations. Such an approach of allowing students to interact with peers and materials and using their own experiences to learn makes the experience meaningful, as well as developing a positive attitude to mathematics and promoting students to become life long learners which is a key goal from Saskatchewan Education Mathematics Curriculum Guide for the Elementary Level.

Objectives

Strand: Measurement

Topic: Money

1. M-59 solve a variety of problems relating to money
2. M-63 use strategies to make change for given values to one hundred dollars
3. M-65 multiply/divide amounts of money (single digit multiplier/divisor)

Strand:Problem Solving

Topic: Understanding

1. P-1 establish and/or demonstrate an understanding of a problem by:
 - interpreting tables, charts, graphs
 - using number sentences
 - determining reasonableness of given information
 - recognizing sub-problems
 - recognizing hidden information

Topic: Planning & Executing

1. P-2 design a plan and solve problems using one or more of the following strategies
 - uses a number sentence
 - guess and check
 - make a systematic list
 - make a chart or table
 - select and use appropriate information
2. P-3 apply estimation strategies to a problem
3. P-4 solve a variety of problems including:
 - translation
 - process
 - realistic

Topic: Reflecting

1. P-5 explain how the solution was obtained
2. P-6 judge the reasonableness of the results by comparing to the estimate
3. P-10 apply alternate problem-solving strategies
4. P-11 properly display the results

CEL'S

1. **Communication**

Students will be involved in using communication skills as they:

- follow directions
- listen attentively
- develop money vocabulary
- organize information in a meaningful way
- make predictions/estimations
- share ideas and findings verbally and visually
- read tables, problems, etc.
- learn about money around the world
- participate in large and small group discussions/activities
- write in journals expressing thoughts and problems about money

2. Critical & Creative Thinking

Students will be involved in using these skills by:

- solving problems related to life experiences
- wisely spending and saving money
- interpret, create, and predict information
- looking for relationships and patterns
- creating alternative solutions and show how they arrived at these solutions
- writing creatively to express thoughts and findings
- identifying/creating money terms
- creating new money and a history for it

3. Personal & Social Values & Skills

Students will use and develop these skills by:

- working cooperatively and contributing positively in group learning activities
- sharing personal experiences
- respecting each others' ideas
- develop responsibility towards using money

4. Independent Learning

Students will develop these skills when they:

- participate in activities that lead to independent exploration
- collect data
- writing/reflecting in their journals
- relating new knowledge to prior
- working in various settings: alone, pairs, small ,or large group
- reflecting on learning

5. Numeracy

Students will develop these skills through:

- collecting, organizing, and interpreting data in tables, graphs, etc.
- making change on paper and using play money
- adding, subtracting, multiplying, and dividing amounts of money

6. Technological Literacy

Students will have the opportunity to work on these skills by:

- studying the making and changes of bills and coins
 - looking at the banking system
 - using the computer to type money problems, stories/poems, and reports
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Integration

1. Language Arts

- reading and comprehending written problems, tables, etc.
- writing stories and poems
- journal responses to activities
- writing money riddles
- creating a history for invented money

2. Social Studies

- researching and looking at money around the world
- comparing prices of items from other cities/provinces
- planning and organizing a class fund raiser/field trip
- studying the history of Canadian money
- planning a trip across Canada and finding out the cost

3. Computers

- having students type created problems, favorite writing, reports on foreign currency

4. Health

- planning nutritious meals for 1 day
- planning a class meal for a special day

5. Art

- creating a new bill or coin for Canada and writing its history
- role playing consumers (earning money and paying bills)
- creating a menu for a restaurant (real or fictitious)

6. Physical Education

- playing a variety of eye hand coordination games where students earn money and at the end count the money to see how much each child made
- graph the results

7. Science

- looking at what money is made of
 - how to clean money
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Evaluation

The activities of this unit were designed to ensure the students' active participation/involvement with math in group and individual settings.

Possible Forms of Evaluation:

1. **Anecdotal Notes**

- observe the students as they are working
- jot notes on problem areas, areas of excellence, group skills, etc.

2. **Check Lists & Rating Scales**

- observe/focus on particular areas of interest or skills ie) group skills

3. **Student Self Evaluation**

- periodically have the students fill out check lists, rating scales, and/or graphs on group skills, problems, motivation, achievement, etc.

The students can evaluate their work and work habits during the unit in a unit evaluation. This not only allows the students to reflect on and take responsibility for their learning but also helps the teacher to evaluate the effectiveness of the unit. Is there anything that could be added or deleted next time the unit is taught? What worked or went really well and what did not work? The students are the main priority when developing a unit for you need to incorporate student interests as well as connections to life in order to motivate the students and make the experience meaningful.

Materials for The Unit

- children's books and resource books on money
 - old menus
 - newspapers
 - grocery flyers
 - Money Bingo
 - coin examples (Canadian & foreign)
 - Around the World Game
 - Monopoly games
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Introductory Activity

It is important to have students start to think about money and apply it to real life situations. A good way to start the unit is by reading the book **A Chair For My Mother** by Vera B. Williams. Discuss things such as: what tips are, how much money they think is in the jar (estimate), how long it would take to save enough money for a chair, why does the family wrap the money in paper, how can they exchange coins for bills, what would the students buy with the money. These questions can be assigned to small group after reading the book and discussing it briefly. It will give the teacher an opportunity to assess students' knowledge of money and money problems. This book can be referred to throughout the unit.

Start each day with a money brainteaser to encourage critical and creative thinking as well as connecting mathematics to the students' environment. ie) I have two coins worth 15c. One is not a nickel. Name the coins. (one dime & the other is a nickel!)

Activity 1

Money: How did it Come to Be?

Discuss and research the history of money including bartering, minting, the introduction of the loonie and two dollar coins (divide students into groups). What was used before money as we know it existed? In this lesson students will look at the history of Canadian currency. This will help students to appreciate money yet not place emphasis on having large amounts. Examine present coins and bills as to the the design on them. You may want to look at special coins that are issued. You could discuss issues such as: what if there were no more pennies or the \$5 bill became a coin? Show the traditional one dollar bill and compare it with the loon dollar; why have we moved to the loonie coin? Have students write riddles for Canadian currency. They could also write a math journal response to questions such as: why do we have money? What problems are associated with money? What would a world with NO money be like?

Riddle Example:

I am purple.

The first prime minister, MacDonald,

sits on one side,

And on the other, the fish sure didn't hide.

Who am I?

Activity 2:

How Valuable is Your Name?

This activity focuses on adding and subtracting money. Divide the students into groups of 3 or 4. Give each student an alphabet chart and assign money values to each letter.

Example:

A=\$1

J=\$10

S=\$19

B=\$2

K=\$11

T=\$20

C=\$3

L=\$12

U=\$21

D=\$4

M=\$13

V=\$22

E=\$5

N=\$14

Y=\$25

F=\$6

O=\$15

Z=\$26

G=\$7

P=\$16

H=\$8

Q=\$17

I=\$9

R=\$18

The money values given to each letter can be changed to meet the needs of the students.

Have students write their names in their notebook and then assign the correct value to each of its letters. (Decide whether or not you will use first name only or first and last names.) Each group should receive a task card. When finished share students' findings and graph the results using a bar graph. task card

- What is the value of your name?
- What is the difference between the most and the least valuable names in your group?
- Does the number of letters in a name affect its value? Why or why not?

Activity 3:

Lunch Orders

This activity makes eating out connected to mathematics. If possible obtain old menus from a restaurant or flyer. There should be enough for the students to work in 2's or 3's. Each child orders one meal from the menu and writes it in his/her notebook or journal. Each is given a certain amount of money with which they can spend. Calculate the meal cost and the amount of change received.

In the groups the students are in have them design a menu for a fictional restaurant. You may want to use writers' workshop for this project and laminate the final copy which should be typed. These can be displayed around the room.

Activity 4:

Healthy Meal Bargain Hunters

Discuss how students earn money. How many people receive an allowance? Create a class graph on the amounts of allowance. Analyse the results. What do you do with your allowance.

Discuss nutrition and eating healthy. Then divide the students into groups of 3 or 4. Each group should have grocery flyers from 2 or 3 different stores, perhaps two local flyers and one out of town/province. Tell the students they have \$50.00 to spend on 3 meals for one day. The meals need to be nutritious and include foods from all the food groups. They should choose the food from the stores provided and compare prices. (Chart form may be helpful.)

Then have the students analyse their results. How much money did you spend on each meal? How much money do you have left over. Compare the results within your small groups, and then as a whole class. Have the students write in their journals what they learned and/or felt throughout this experience.

Extension: Take the classroom on an excursion to a nearby grocery store where they can compare products and prices. The assignment may be to purchase enough food for their family for an evening meal. (The meal would be preplanned and taken to the store.) Take the findings back to the classroom to discuss and perhaps create money problems. Shopping Spree (handout): Use the handout to allow students to compare today's school supply prices to those in the early 1970's. This may be done at home or by taking the students to a store to hunt for prices today.

Activity 5:

Group Problems

Start the activity with a money brainteaser. This lesson focuses on solving problems that the students can relate to. Quest 2000 has ideal problems located on pages: 31, 44-45, 57, 82, 86-87, 90-91, 130-131, 142, and 176.

Divide the students into groups of 3 and assign each group 3 or more problems. Students should be familiar with solving problems, especially if the money stations have been set up. Each student should try the problems and then compare results with group members. When complete, have the students try making a problem on their own or in the group. Supply store flyers, newspapers, etc. Next day you may want the students to type out their problems to be compiled into a class book of "Real Life Problems".

NOTE: The problems should include addition, subtraction, multiplication, and division.

Activity 6:

Mental Math

The objective is to have students calculate prices mentally by adding and subtracting. This will help to estimate prices when shopping. This activity can be introduced as a separate lesson or can be used to begin other lessons. It can also be used as a station.

Each student should have a bingo card. These can be pre-made or the teacher can hand out blank bingo cards. Then read out money amounts for the students to fill in randomly on their card. The teacher then calls out a number sentence which the students must calculate to find and cover the answer on their card. for sample

Activity 7:

Money Around the World

This lesson may be done as an extra. It introduces students to foreign currency. Bring any foreign coins in to show the students. Find out if anyone knows the names of money from any other country. Discuss the color, size, and value of the money.

Divide the students into pairs and have each pair choose a country. Each group is responsible for writing a report on their country's money (coins, bills, values, and samples). As an introduction they may want to include some information on the chosen country. Be sure that each group converts \$100.00 Canadian to the currency of their country. Sources to use are encyclopaedias, National Mint, Bank of Canada, etc. These can then be presented to the class.

Bulletin Board Idea Put up a world map. Have the students mark their country on the map. In a folder attached to the bulletin board they can place a card with a coin sample and the name. During station time students can match the coin to the correct country.

Extra: Have a coin collector come in to talk to the students about foreign currency and the hobby of collecting.

Other Activities

- 1. What are coins made of?**
 - Perform science experiments to determine what Canadian coins and/or foreign coins are made of.
- 2. Making Coins**
 - Supply students with paper or clay and let them create their own coin. Toothpicks can be used for fine detail. They can then write up a history on their coin. Variation: Allow students to create a new bill of any denomination.
- 3. Earning Income and Paying Bills**
 - This can be an ongoing activity where the students earn money for doing jobs but must pay classroom bills as well. Any left over money can be put in the class room bank to be saved for a special activity such as movie afternoon, pizza lunch, etc.
- 4. Problem of the Day**
 - Start each day or math class with a money problem.
- 5. Have a community relations person from a local bank to talk to the students about banks, opening accounts, and keeping track of deposits and withdrawals. Plan a field trip to tour a bank.**

6. Fund Raiser

- Allow the students to decide on how to raise money and the cause. Where will the money go? Perhaps a charity or class trip.

7. Piggy Banks

- Research how piggy banks came to be. Have students create their own bank using any materials such as paper mache. You can have a piggy bank show day where the children bring their banks from home and/or created one.

8. Physical Education Games

- Use the following types of activities varying the money amounts.
 - As the students progress from in station to the next they should keep track of the amount of money they earned. At the end of the class graph the results of their money making.
 - At each station the students are given paper money to keep until the end of class.
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Learning Centre Activities

1. PLAN A PARTY

You must plan a party for 15 of your friends. You have been given \$80.00 to spend on food and beverages. Use your newspaper to obtain prices for the items listed on the chart below or create your own chart and party needs. You will need to look for the items in flyers from 2 different grocery stores to compare and evaluate where you will shop for your party supplies.

Calculate how much the total bill will be at each store. How much money do you save? Calculate how much money you have left. Remember that you only have \$80.00 to spend.

Party items Needed and Amount	Grocery Store #1		Grocery Store #2
	Cost	Amt. x Cost	Cost

Pop:

Cheese:

Crackers:

Potato Chips

Ice Cream:

Movies:

Other:

Total Prices:

2. **PROCESS PROBLEMS**

At this station there will be a variety of money related process problems. The problems will be changed and added as the students work through the problems.

3. **MONEY SCAVENGER HUNT**

Use a newspaper to find a number of money related symbols, words, and values, and cut them out. Make a collage on an 8 1/2 x 11" paper.

4. **BUYING AND SELLING: MONOPOLY**

Have 1 or 2 monopoly games at the station. No more than 4 students can be at each board. This will help students make purchasing decisions and managing money in a fun way.

5. **MONEY BINGO**

Provide bingo game boards with various prices randomly placed on them. The caller states an expression containing addition or subtraction of two amounts. The students must mentally (preferably) calculate the value and find it on the card.

This can be used as a whole class opening or closing activity. It encourages mental calculations.

Variation: use money words.

6. **CREATIVE WRITING CENTRE**

At this centre students will be able to write poetry and/or stories about money. They may want to use Writers' Workshop for some of their writing. The writings can then be posted on a money bulletin boards.

NOTE: The teacher may want to put up a Piggy Bank with idea cards attached to promote and encourage deeper thinking.

7. **READING CENTRE**

Try to locate as many books about money either children's books or information books/pamphlets. See Resource List for ideas.

8. **MONEY AROUND THE WORLD**

This centre may be ongoing in that it relates to the group research projects. It includes the interactive bulletin board and a board game with various money questions.

Bulletin Board Ideas

1. **MONEY WORDS**

Brainstorm words that represent money. Have the students make cards shaped like money and print various words for money on each card. Display on the wall or on a bulletin board. This helps to develop/expand vocabulary (income, coupon, cheque, pound, etc.).

2. **IF MONEY GREW ON TREES...WE'D ALL WORK FOR LEAVES**

Create a tree structure out of brown bristle board and put on a bulletin board. Then add students' money that they created (bills or coins). Display "If Money Grew on Trees" stories from the writing centre as well.

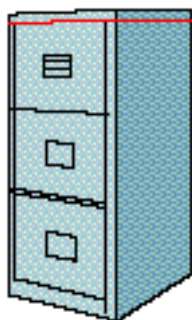
3. **MONEY AROUND THE WORLD**

See Activity 7

4. **MONEY AROUND US**

Use the scavenger hunt collage from the station work to create a bulletin board of money in our environment.

You can also add stories and problems that the students created.



Resources

Suggested Literature Resources

Drobot, Eve (1987). **Everything You Want to Know About Money: An Amazing Investigation.** Toronto: Owl Books. Greey de Pencier Books.

Mitgutsch, A (1985). **From Gold to Money.** New York: Carolrhonda Books Inc.

- the history of money

Morgan, Allan (1987). **Matthew and the Midnight Money Van.** Toronto: Annick Press Ltd.

Schwartz, D.M. (1989). **If You Made a Million.** New York: Lothrop, Lee, & Shepard Books.

Viorst, J. (1978). **Alexander Who Used to be Rich Last Sunday.** Macmillan.

- involves subtraction

Williams, Vera B. (1984). **A Chair for my Mother.** New York:Greenwillow.

Suggested Teacher Resources

Beesey, Cathy and Tynn Davie. **Active Mathematics Teacher's Resource Book Level 3 (5-6).**

Bennett, B., Rolheiser, C., & Stevahn, L. (1991). **Cooperative Learning. Toronto: Educational Connections.**

Danbrook, Carol (1992). **Active Learning Series Overheads Grades 4-6.** Exclusive Educational Products.

Daniel, Becky (1988). **Math Thinker Sheets**. Illinois: Good Apple Inc.

Danylczuk, Eileen (1994). **If you've got the TIME, I've got the MONEY, Especially if the TEMPERATURE is right !** Stewart Resource Centre, STF.

Grade 5 & 6 **Daily Mathematics Critical Thinking and Problem solving**. (1992). Illinois: McDougal, Littell, & Company. -800-225-3909 (5 Minute Workouts)

Molengraft, Lisa. **Canadian Money**. USA Instructional Fair Inc.

O'Connell, Susan (1995). "**Newspapers: Connecting the Mathematics Classroom to the World.**" Teaching Children Mathematics. January. 268-275.

Quest 2000. (1997). Grade 5. Addison-Wesley. (teacher guide, student text, black line masters, and problem of the day overheads)

Regina Leader Post. **Money Mathers Grade 5-9**. Resource Catalogue. -free with an order of 100 newspapers

Saskatchewan Education (1992). **Mathematics: A Curriculum Guide for the Elementary Level**.

Saskatchewan Education (1991). **Student Evaluation: A Teacher Handbook**.

Techniques of Problem Solving. **Problem Deck A & B**. Dale Seymour Publications -Box 10888 Palo Alto, CA 94303

Various pamphlets on Canadian Money and it's History from the Bank of Canada and/or National Mint

MONEY: A MINI UNIT

Money: How did it Come to Be?

Cel's

Communication:

- developing a money vocabulary
- sharing ideas in small groups
- looking at and reading information packages
- writing responses

Critical & Creative Thinking:

- questioning pre-money time
- writing responses/creative writing
- why is there money and its effects on people

Personal & Social Values & Skills:

- working cooperatively and contributing positively in groups
- sharing ideas and respecting each others'

Independent Thinking:

- creating a riddle
- internalizing group discussions

Technological Literacy:

- word processing riddles with a creative background for displaying

Objectives

M-59 solve a variety of problems relating to money

- appreciate money and understand its effects
- demonstrate knowledge and understanding about money
- to think critically about money and its effects

Resources

Bank of Canada, The Story of Canada's Currency. (1990). Bank of Canada - package on the latest bills (current)

Lesson

Discuss and research the history of money including bartering, minting, the introduction of the loon and two dollar coins (divide students into groups). What was used before money as we know it existed? In this lesson students will look at the history of Canadian currency. This will help students to appreciate money yet not place emphasis on having large amounts. Examine present coins and bills as to the the design on them. You may want to look at special coins that are issued. You could discuss issues such as: what if there were no more pennies or the \$5 bill became a coin? Show the traditional one dollar bill and compare it with the loon dollar; why have we moved to the loonie coin? Have students write riddles for Canadian currency. They could also write a math journal response to questions such as: why do we have money? What problems are associated with money? What would a world with NO money be like?

Riddle Example: I am purple.

The first prime minister, MacDonald,
sits on one side,

And on the other, the fish sure didn't hide.

Who am I?

Healthy Meal Bargain Hunters

Cel's

C: -creating a chart to show findings

CCT: -deciding on best price

-orally sharing findings
-writing journal responses

-making meals healthy
-designing a chart

IL: -what is the best bargain?
-what is healthy/nutritious?

PSVS: -sharing materials
-working cooperatively
-respect each other

N: -designing a chart to display data
-comparing prices
-making change
-how much was spent on each meal and all together?

Objectives

M-63 use strategies to make change for given values to one hundred dollars

SWBAT:

- compare prices from grocery flyers
- plan healthy meals
- appreciate the need for bargain shopping
- work cooperatively

Materials

- grocery flyers
- paper/notebook
- pens/pencils

Lesson

Discuss how students earn money. How many people receive an allowance? Create a class graph on the amounts of allowance. Analyse the results. What do you do with your allowance.

Discuss nutrition and eating healthy. Then divide the students into groups of 3 or 4. Each group should have grocery flyers from 2 or 3 different stores, perhaps two local flyers and one out of town/province. Tell the students they have \$50.00 to spend on 3 meals for one day. The meals need to be nutritious and include foods from all the food groups. They should choose the food from the stores provided and COMPARE prices. (Chart form may be helpful.)

Then have the students analyse their results. How much money did you spend on each meal? How much money do you have left over? Figure out the bills and change you would receive. Compare the results within your small groups, and then as a whole class. Have the students write in their journals what they learned and/or felt throughout this experience.

Extension:

Take the classroom on an excursion to a nearby grocery store where they can compare products and prices. The assignment may be to purchase enough food for their family for an evening meal. (The meal would be preplanned and taken to the store.) Take the findings back to the classroom to discuss and perhaps create money problems. ***If you can find grocery flyers from an out of province city bring in as many as you can. Encourage students to compare prices with one local grocery store. Have them present their data in chart form to make clear comparisons.

Obtained from Math Central

<http://MathCentral.uregina.ca/>