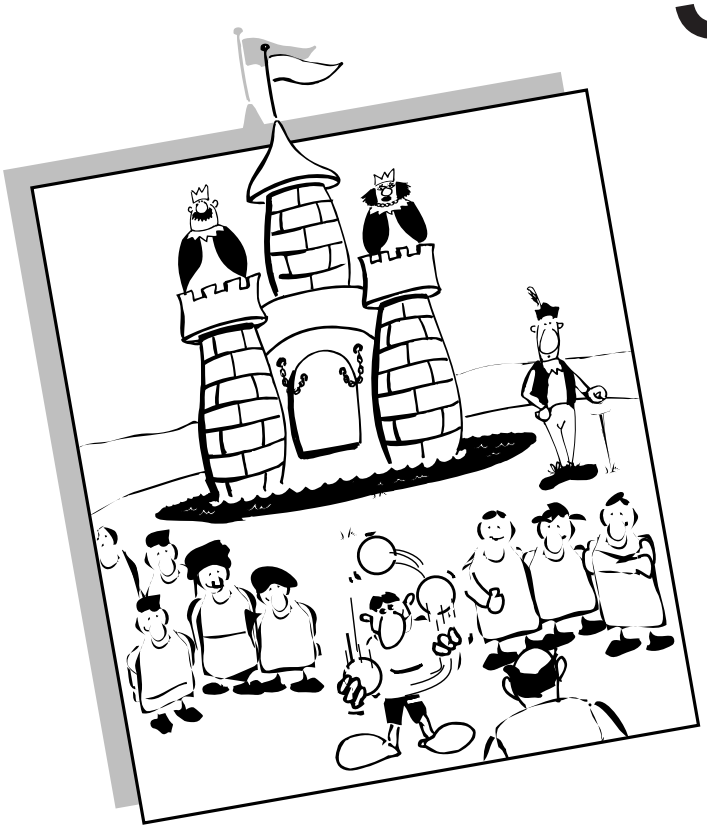
Middle Ages

Written by:
Simone Gareau



1 9 9 4

E105.16

TEACHING MATERIALS
from the
STEWART RESOURCES CENTRE

SASKATCHEWAN TEACHERS' FEDERATION

EDITOR'S NOTE

The following abbreviations are used for the Common Essential Learnings (CELs).

- Communication - C
- Critical and Creative Thinking - CCT
- Personal and Social Values and Skills - PSVS
- Independent Learning - IL
- Technological Literacy - TL
- Numeracy - N

INTRODUCTION

This Math unit is part of an integrated unit on the theme "Middle Ages." The end product of this unit is a "Medieval fair" where students set up a variety of booths. Some booths would be set up to display information on various topics such as the Magna Carta, the Crusades, the feudal system, castles, and sieges. Other booths would be set up to entertain. Visitors would have an opportunity to try archery at the archery booth, catapulting at the catapulting station, juggling, chess, stocks, stilts, and so on. Other booths would be set up to serve "Medieval" foods. Here visitors could sample tidbits from the past.

The Math part of this integrated unit deals with many practical problems encountered in setting up such a fair.

OVERVIEW AND RATIONALE

In this unit, students will have an opportunity to be actively involved in the planning and organizing of a medieval fair. They will first of all be introduced to the game of chess - a game that has its roots in medieval times, a game they can teach to others at their fair. They will plan medieval menus, find and compare prices, calculate the cost of feeding visitors, and prepare food. They will plan a schedule to accommodate all visitors.

This unit provides a concrete opportunity for students to solve real-life problems, skills they will need for life. This unit also addresses all areas of the C.E.L.'s, not just numeracy. There is a lot of emphasis on communication, creative/critical thinking, and personal and social values and skills.

FOUNDATIONAL OBJECTIVE

The student should demonstrate confidence, desire, and an ability to solve a variety of mathematically related problems.

LESSON 1- (*Day 1 and 2)*

SPECIFIC LEARNING OBJECTIVE

The student should be able to:

1) select and use appropriate information. (C)

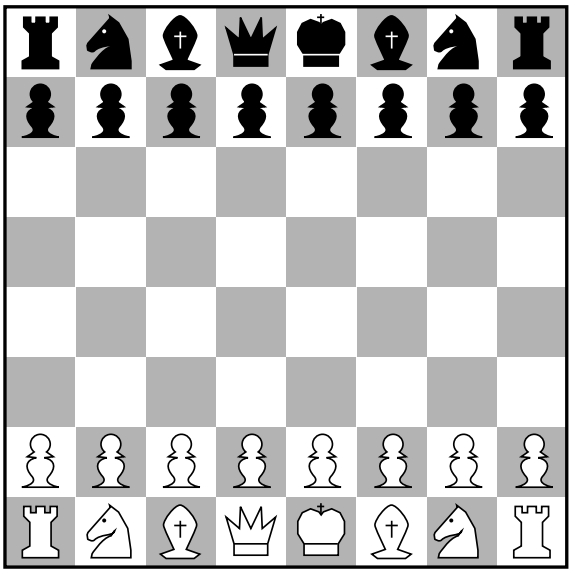
2) design a plan and solve problems using one or more of the following strategies.

3) revise plans when necessary. (CCT), (PSVS) 45 min.

INSTRUCTIONAL METHOD AND STRATEGY

Direct Instruction:

- Explicit teaching Demonstration
- Experiential learning



MATERIAL

Chess sets

PROCEDURE

1) Teach basic moves of pieces on a chess board.

2) Play chess

ASSESSMENT

Observation

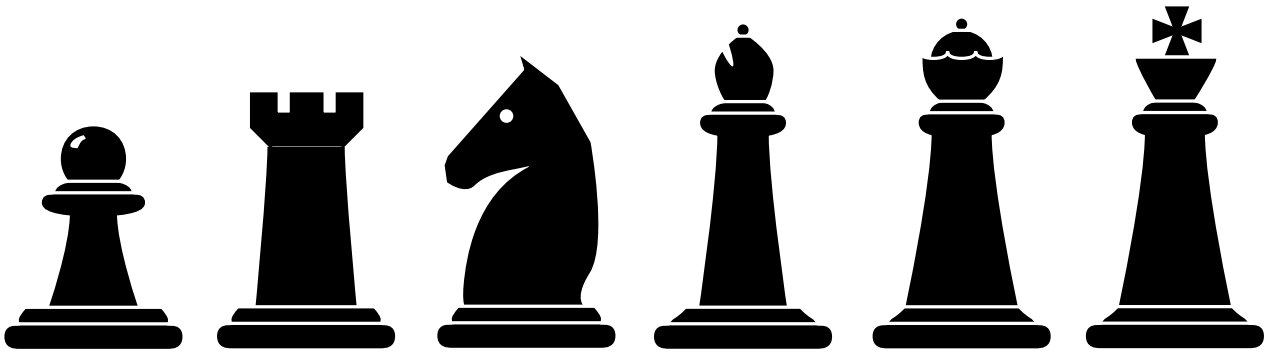
ADAPTIONS

1) Set up an on-going tournament for those who are eager to improve.

2) Encourage students to play with someone who plays at their own level.

RESOURCES

An excellent explanation for playing the game can be found in *Chess for Juniors: A Complete Guide for the Beginner*, by Robert M. Snyder, Random House, c1991.



LESSON 2 - (*1 Day)*

Day 3

SPECIFIC LEARNING OBJECTIVE

The student should be able to:

1) acquire data through experiments. (CCT)
2) display data using bar graphs or line graphs. (PSVS), (CCT)

2 - 45 minute classes

INSTRUCTIONAL METHOD AND STRATEGY

Experiential Learning

MATERIAL

- Catapults constructed in Science class - (see diagram & instructions)
- Marshmallows
- Metre stick
- Graph

PROCEDURE

1) Set up the competition area - a long hallway works well.Mark the launching line.
2) Students take turns launching 3 marshmallows. Students graph the farthest distance travelled by one of their marshmallows.

CHALLENGE

1) Working individually or with a partner, modify the catapult to toss the marshmallow farther. You may adapt the design, materials, strength of the rubber hand, and any other factor you think will affect the distance thrown.
2) For the contest, you have three chances to shoot your catapult, and the longest distance of the three trials is your official entry in the contest. The student whose catapult throws the marshmallow the farthest wins. During the launches, record students' names and how far their catapults threw the marshmallow.
3) After the contest, look at the launch data you collected and make a graph showing the number of students for each distance travelled. Write an evaluation of your design and tell what you would change to make your catapult throw even farther.

ASSESSMENT

- observe participation
- graph results

ADAPTIONS

1) Students could build catapults with partners.
2) Have students build catapults from scratch. Save the most efficient catapults for a booth at the Medieval fair.

INSTRUCTIONS FOR BUILDING CATAPULT

Marshmallow Siege Catapult

MATERIALS

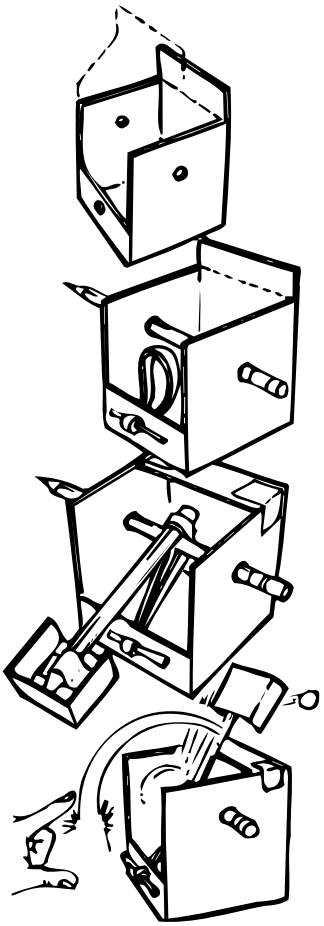
(for students working individually or in pairs)

- 1-cup milk carton
- scissors
- small rubber bands, in assorted width and sizes
- used matchstick or toothpick
- two pencils
- small matchbox
- mini-marshmallow

PROCEDURE

1) Cut off the top of the milk carton and then cut the carton as shown in Figure 1. Cut holes the size of a pencil in both sides and in the back, as shown.
2) Push a rubber band through the hole in the back and hold it in place with a toothpick or used matchstick. Push a pencil through the holes in the sides.
3) Cut the tray of the matchbox in half lengthwise and tape it to the sharpened end of the second pencil. If you do not have a matchbox, make a similarly shaped holder out of paper and tape.
4) Lay this pencil across the other with the eraser end facing the front of the catapult. Loop the rubber band over the eraser end. Fold the front flap of the milk carton in, crease it, and tape it down.
5) Place a marshmallow in the holder, pull back the pencil, and fire.

Note: Diagram adapted from Science Scope, February, 1994.



LESSON 3 - (3 Days)

SPECIFIC LEARNING OBJECTIVE

The student should be able to:

1) use estimation in helping solve a variety of problems.
2) recognize and solve a variety of problems using multiplication.

INSTRUCTIONAL METHOD AND STRATEGY

- Experiential Learning - Field trip
- Direct Instruction
- Cooperative Learning

MATERIAL

- grocery flyers from various stores
- "Let's Go Shopping" activity sheet

Before doing lesson 3, students should be familiar with foods that were common during the Middle Ages. They should have planned a menu of foods they would like to serve at their fair. From this menu, they should have made up a list of the ingredients that they need to buy to prepare the food. A list of 15-20 items works well.

Day 1

PROCEDURE

1) Fill in the ingredient section of the "Let's Go Shopping" activity sheet.
2) Field trip to the local grocery store to find the price and size/quantity of these ingredients. (Size/quantity is important for some of the next activities).
3) Give students time to discuss the process and share their discoveries.

Day 2

PROCEDURE

1) Divide the class into small groups.
2) Hand out flyers from various grocery stores (1 store/group works well).
3) Using another "Let's Go Shopping" activity sheet, students locate the price and size/quantity of the same list of ingredients as the previous day.
4) Students compare these prices with yesterday's and identify which store has the best buy by totalling the price column.
5) Each group shares its findings with the whole class.
6) As a class, decide where would be the best place to shop for all ingredients. Keep the shopping list from that store for tomorrow. (Make sure students consider such factors as location of stores, cost of transportation, who will shop, etc. Usually they will select the one closest to their school so that they can all be involved in the shopping experience.)

Day 3

PROCEDURE

1) As a class, decide how much food you will need for your fair. (This will vary, depending on the number of people who will be coming to your fair - it could be just your class, or parents as well or even the whole school.)
2) Using the shopping list that your class selected yesterday, have students calculate approximately how much they will have to pay for the food. Students should round off the cost per unit.

   Example: $5.99/kg for ham would be rounded off to $6.00;
   $0.52 for a box of toothpicks would be rounded off to
   $0.50 - students do this in their notebooks.

3) Have students compare their final figures with those of their classmates.

ASSESSMENT

- Observation of student participation (use checklist if you like)
- "Let's Go Shopping" work sheets
- Notebooks - check rounding off and multiplication

ADAPTIONS

1) Change groupings.
2) If a field trip is not feasible, use flyers to identify the price of ingredients.
3) If there is no money available for buying supplies, every student could volunteer to bring something from home.

LET'S GO SHOPPING

	Ingredient	*Size/Quantity*	*Price*
1)			
2)			
3)			
4)			
5)			
6)			
7)			
8)			
9)			
10)			
11)			
12)			
13)			
14)			
15)			

LESSON 4 - (1 Day)

SPECIFIC LEARNING OBJECTIVE

The student should be able to solve a variety of problems involving time. 45 min.

INSTRUCTIONAL METHOD AND STRATEGY

Interactive Instruction

MATERIAL:

A timetable showing recesses and lunch break during a school day

PROCEDURE

1) Discuss what is a timetable.
2) Working with a partner; students make up a schedule for other classes to come and visit the Medieval Fair. Things to include are: setting up, breaks, clean-up.
3) Give students an opportunity to share their timetable and to defend it (give supporting reasons why it is better).
4) As a class, choose the timetable that would be the most suitable.

ASSESSMENT

- observation
- timetables must all be handed in

ADAPTATIONS

1) A timetable may not be necessary if there won't be any visitors to the fair.
2) Students could ask other teachers when it would be convenient for them and their classes to come to the fair. Using this information, a timetable can be set up.

TIMETABLE

Time	1st Draft				Final Timetable
Recess					
Lunch					
Recess					

LESSON 5

SPECIFIC LEARNING OBJECTIVE

The student should be able to recognize use of fractional numbers in the real world. 2 - 45 minute classes

INSTRUCTIONAL METHOD AND STRATEGY

MATERIAL:

- all ingredients necessary for making food
- a kitchen or two
- parent helpers
- utensils
- recipes

PROCEDURE

1) Organize students in groups.
2) Each group gets 1 recipe.
3) Each group is responsible for preparing a particular food in a large a quantity as previously determined (Lesson 3, Day 3).
4) Each group is responsible for cleaning up.

ASSESSMENT:

Peer evaluation

ADAPTATIONS

1) Try to have one adult per group.
2) Try to prepare food the day before the fair.

SUGGESTION FOR FOODS

Bread - use baguettes and slice thinly
Butter - make your own (see recipes)
Pancakes - (see recipes) or use pancake mix and add spices
Dandelion Salad - students pick and wash dandelion greens or buy spinach) - make own dressing (see recipes)
Boar's Head - make some kind of dip and serve on small crackers (see recipes)
Cow's Tongue - pepperoni sticks sliced thinly or spam
Pudding de Swan Neck - any instant pudding (vary according to wishes) served on ginger snap cookies and covered with coconut
Wassail - see recipes
Blackbird Pie - any kind of meat pie or blueberry tarts

Hints - this is not intended to serve lunch to the audience, but is meant only to give them a small taste of these exotic foods.
- no utensils were used during Medieval times.

RECIPES

PANCAKES

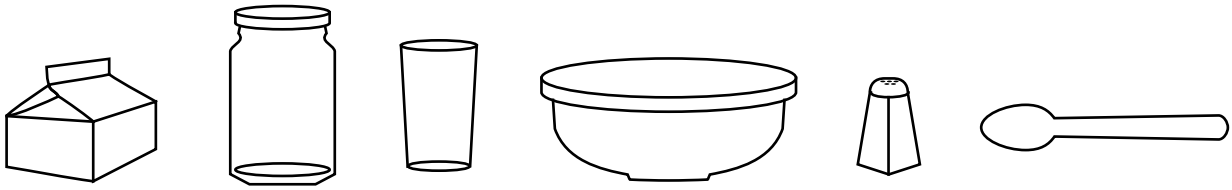
- 1 1/3 cups all-purpose flour
- 3 teaspoons baking powder
- 1/2 teaspoon salt
- 3 tablespoons sugar
- 1 egg
- 1 1/4 cups milk
- 3 tablespoons melted butter or vegetable oil
- 1/4 teaspoon vanilla

Stir flour, baking powder, salt, and sugar together. Beat egg thoroughly; add milk. Make a well in centre of dry ingredients; slowly add the egg-milk mixture. Add melted butter and vanilla. Stir quickly until ingredients are just mixed and batter is still lumpy in appearance. Drop by 1/4 cupfuls on hot pancake griddle. Cook the pancakes until they are filled with bubbles and the under-surface is golden brown. Turn and brown the other side. Serve as hot as possible with syrup, honey, jam or jelly, bacon or sausages. Do not turn the pancakes more than once during cooking. Yield: 10-12 pancakes. These are large pancakes.

Hint- make very small pancakes - about 1/4 of the regular size.

LET'S MAKE BUTTER

Pour the whipping cream into a clear jar. Screw on the lid. Shake the jar until the butter forms a ball. Pour off the buttermilk. Put the butter in a bowl. Work and wash the butter. Add salt and taste the butter.



Whipping Cream | Jar | Glass | Bowl | Salt | Spoon

BEAN DIP

- 398 ml 1 can beans in tomato sauce 14 oz.
- crumbled, crisp bacon
- seasoning (garlic, Tabasco, Chili Sauce)

1) Drain beans, saving the liquid for soup.

2) Mash or blend beans to a smooth mixture; season.

3) Add enough of the reserved sauce to give the desired consistency; sprinkle with bacon.

Peanut butter, either crunchy or plain, or toasted sesame seeds or pumpkin seeds add flavour and texture interest. The complementary effect makes this an excellent high protein food.

CHICK PEA DIP

- 540 ml 1 can chick peas 19 oz.
- 2 cloves garlic, crushed
- 50 ml lemon juice 1/4 cup
- 50 ml sesame seed paste 1/4 cup
- 125 ml salad dressing 1/2 cup seasoning

Puree drained peas with garlic and lemon juice; add drained sesame seed paste and salad dressing to give a creamy consistency; season to taste.

Sesame seed paste, also known as sesame butter, tahina, or tachina, may be found in oriental shops or health food stores.

BASIC-OIL-AND-VINEGAR-DRESSING

- 2 tsp. salt
- 1 tsp. fresh ground pepper
- 1/2 tsp. dry mustard
- 2 c. salad oil
- 1 tsp. sweet basil, chopped and crushed, optional
- 1/2 c. cider vinegar

Combine seasonings and vinegar. Add salad oil a little at a time, shaking between additions. Store in a cool place. Makes about 2 1/2 cups.

WASSAIL (SERVES 12)

- 2 quarts apple cider
- 2 cups cranberry juice
- 1/2 cup brown sugar
- 3 sticks cinnamon
- 1/2 tsp. each ground ginger, allspice
- 1/4 tsp. ground mace
- 1 large orange, cut into eighths and pierced with whole cloves

Pour all ingredients into a large crock-pot. Cover and cook for 1 hour on high, stirring occasionally. Then cook on low for 4 hours.