
Grade 12
Consumer Mathematics
Standards Test

Project Scoring Guide

Manitoba
Tourist

November 2011

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Disponible en français.

Available in alternate formats upon request.

Excerpts from the Project Resource Package

Welcome to the *Manitoba Tourist Project*

General Information

The purpose of the first session is to provide an opportunity for you to

- develop an understanding of the project requirements
- become familiar with the information contained in the *Project Resource Package*
- share ideas related to the project in a brainstorming session
- begin developing your individual project

After the first project session the following conditions apply:

- Two additional classwork periods will be provided.
- Your teacher cannot assist you in developing or revising your project.
- You must submit an individual project that reflects your own work.

Guidelines for the *Manitoba Tourist Project*

You have decided to tour Manitoba in order to experience the various people and places that the province has to offer.

In doing this project the following scenarios and requirements apply:

1. You will decide where to start your tour.
2. Your tour will last between 7 and 10 days and it will end at the same location it was started. You may spend a maximum of two nights in the same location.
3. You may travel wherever you like (an efficient tour is not required), but you must travel a minimum of 1 000 km within the province.
4. You will average a speed of 90 km/h when travelling between destinations.
5. Your vehicle will consume an average of 10 litres of fuel for every 100 km driven. The average fuel cost is \$1.22 per litre.
6. You will choose your accommodations for each night you are on the tour.
7. You must plan to eat breakfast, lunch, and supper each day.
8. You will participate in an activity each day. Your activities over the course of the tour must be chosen from at least three different categories. You may participate in more than one activity per day.
9. Miscellaneous costs (snacks, bug spray, etc.) will average \$20 per day.
10. There is no limit to how much money you can spend on the tour.
11. All taxes have been included, unless otherwise stated.

Directions for the *Manitoba Tourist Project*

Your completed project must include the following information:

- a schedule outlining the locations visited during the tour
- a list of the activities chosen
- a detailed calculation for the time spent driving between locations
- a detailed calculation for the fuel costs
- a detailed list of expenses for the tour

Your completed project must:

- be separate from this Project Resource Package booklet
- be well organized and clearly presented with an introduction and a conclusion
- be clearly presented with appropriate headings/subheadings
- include justifications of any assumptions or decisions you make in completing your project
- be printed from a computer, or written in blue or black ink

A scoring guide similar to the one below will be used to grade your project.

Organization, Structure, and Communication	Data Selection/Analysis	Concepts/Reasoning
5 Marks	5 Marks	5 Marks
<ul style="list-style-type: none">• Is your project organized and does it follow a logical presentation?• Is your project easy to read?• Is your information clearly presented?	<ul style="list-style-type: none">• Did you select and use the required data?• Did you explore patterns or relationships in the data where appropriate?• Did you use mathematical procedures correctly?	<ul style="list-style-type: none">• Did you include evidence that mathematical concepts are understood?• Did you include clear and logical reasons, explanations, and conclusions that are appropriate to the project?



Note to Teacher:

The purpose of this document is to assist teachers in detecting reasonable calculations and sufficient data when scoring student projects. The document includes a scoring rubric and sample calculations pertaining to the Project.

A variety of organizational structures and types of responses to the *Manitoba Tourist* project is anticipated. Student explanations for their decision making will vary. When organizing the project students may consider many issues.

Scoring the Project:

Student projects are scored using a pre-established rubric that covers three broad categories. The scores awarded are placed on a *Project Scoring Sheet*. The “Organization/Structure and Communication” category primarily focuses on how the student has organized and communicated work. Judging whether the student selected required data and used appropriate mathematical procedures is the primary focus of the “Data Selection/Analysis” category. The third category, “Concepts/Reasoning”, is primarily focused on judging if the student understood necessary concepts and demonstrated logical reasoning in drawing conclusions and making justifications.

The order of proceeding through the rubric and completing the *Project Scoring Sheet* is a decision teachers make based on personal preference. For example, some teachers may decide to start by reviewing the “Organization/Structure and Communication” category first. This would involve reviewing the project to judge how the student met the criteria outlined in the rubric. These teachers might then move to the “Data Selection/Analysis” category and finally to the “Concepts/Reasoning” category. Other teachers may decide to start at the “Data Selection/Analysis” category then move to the “Organization/Structure and Communication” category followed by the “Concepts/Reasoning” category.

The “Consider the Following” section of the rubric is specific to each project. The items listed under the heading are not intended to be exhaustive but rather they are included to assist teachers in their marking.

If the Project is not submitted, then shade in the “no submission” bubble on the scoring sheet and do not shade in the “insufficient information” bubbles.

Consumer Mathematics: Project Scoring Rubric

Manitoba Tourist

Consumer Mathematics Project Scoring Rubric	Consider the Following:
<p>Organization/Structure and Communication Has the student communicated mathematical and other relevant information in a clear and organized way?</p> <ul style="list-style-type: none"> — Organization/Structure (effective use of introduction[s], sections and/or headings, conclusion[s] or summary statement[s]...) — Communication (effective use of charts, tables, graphs, etc. to display data and relevant information; clear presentation; effective use of terminology) 	<ul style="list-style-type: none"> — introduction, headings, conclusion, and summary statements — presentation of: <ul style="list-style-type: none"> • schedule • activity list • time and fuel calculation • list of expenses
<p>Data Selection/Analysis Has the student selected and analyzed data appropriately?</p> <ul style="list-style-type: none"> — Selection (required data selected) — Analysis (exploration of any relevant patterns or relationships, used mathematical procedures appropriately) 	<ul style="list-style-type: none"> — trip between 7–10 days — minimum of 1 000 km travelled — travel times — fuel costs — accommodations (maximum 2 nights at one location) — meals (gourmet meals for supper, breakfast included B&B, fast food once per day, etc.) — activities (three types and at least one per day) — miscellaneous costs
<p>Concepts/Reasoning Has the student demonstrated an understanding of mathematical concepts as well as the ability to reason logically and draw appropriate conclusions?</p> <ul style="list-style-type: none"> — Concepts (demonstrated understanding of essential mathematical concepts...) — Reasoning (evidence reasoning/logical thinking was involved in producing the project and in drawing appropriate conclusions...) 	<ul style="list-style-type: none"> — Appropriate assumptions/justifications/explanations/conclusions — Realistic travel (variety of distances) — Realistic schedule (travel vs. meals/number of activities in a day) — Evidence of mathematical conceptual understanding (efficient calculations for taxes, driving times, fuel costs, etc.)
<p>Performance Level</p>	

	Level 1 (NOT YET AT STANDARD)		Level 2 (AT STANDARD)		Level 3 (ABOVE STANDARD)	
Insufficient Information/Evidence	<p>Example:</p> <ul style="list-style-type: none"> — little organization of ideas; limited (no) use of introductions, sections/headings, conclusions/summary statements — partially legible; information/details/calculations missing; vague presentation; difficult to follow 		<p>Example:</p> <ul style="list-style-type: none"> — most ideas organized; generally appropriate use of introductions, sections/headings, conclusions/summary statements — legible; most information/details/calculations evident; generally effective presentation; can follow with little difficulty 		<p>Example:</p> <ul style="list-style-type: none"> — exceptional organization of ideas; exemplary use of introductions, sections/headings, conclusions/summary statements — easy to read; insightful information/details/calculations evident; very effective presentation; easy to follow 	
	<p>Example:</p> <ul style="list-style-type: none"> — limited selection of required data — limited exploration of patterns/relationships; limited use of appropriate mathematical procedures (major computational errors) 		<p>Example:</p> <ul style="list-style-type: none"> — most required data selected (minor omissions) — most patterns/relationships explored; most mathematical procedures used were appropriate (some computational errors) 		<p>Example:</p> <ul style="list-style-type: none"> — all required data selected — insightful exploration of patterns/relationships; all mathematical procedures used were appropriate (only minor computational errors) 	
	<p>Example:</p> <ul style="list-style-type: none"> — limited evidence that the student understood the essential mathematical concepts — limited evidence of logical reasoning that led to appropriate conclusions; missing or incorrect justifications/explanations 		<p>Example:</p> <ul style="list-style-type: none"> — evidence that the student understood most of the essential mathematical concepts — evidence of logical reasoning (some minor inconsistencies) that led to appropriate conclusions; some plausible justifications/explanations 		<p>Example:</p> <ul style="list-style-type: none"> — evidence that the student understood all mathematical concepts — evidence of insightful and consistent reasoning that led to appropriate conclusions; clear and logical justifications/explanations 	
	Level 1	Approaching Level 2	Level 2	Approaching Level 3	Level 3	
0/5	1/5	2/5	3/5	4/5	5/5	

Helpful Hints

Nights spent on the tour (for accommodations) is one less than the number of days on the tour.

Students may justify certain combinations of meal requirements such as eating breakfast at home on the first day or eating supper at home on the final day. It would be considered appropriate, however, if on a 7-day trip, students planned 21 meals in total.

The number of meals, of each type, cannot exceed the number of days spent on the trip.

Gourmet restaurants are only available for suppers, so the number of meals there cannot exceed the number of days on the tour.

Students staying at a Bed and Breakfast must subtract the number of stays there from their number of breakfasts required.

The number of fast-food meals cannot exceed the number of days spent on the trip (once per day).

Projects including a \$25 stay at a campsite should include an explanation of bringing their own camping gear.

Chosen activities should be from at least three of the five categories, and there should be at least one per day.

Taxes (PST and GST) are charged on accommodations only.

Summary List of Expenses

Accommodations per night (taxes included)

Luxury Resort: \$200 (\$224)

Economy Hotel: \$65 (\$72.80)

Bed and Breakfast: \$90 (\$100.80)

Campground: \$25 (\$28)

Campground including equipment: \$45 (\$50.40)

Meals (per meal)

Gourmet Restaurant: \$45

Basic Restaurant: \$12

Fast-Food Restaurant: \$8

Local Grocery Store: \$6

Activities

Local Museum: \$5

Community Tour: Free (\$15 Guided Tour)

Cultural Event: \$10

Sporting Event: \$15

Nature Trail: Free

Miscellaneous

\$20 per day

SAMPLE CALCULATIONS

(Providing a set of common calculations is impossible due to the number of choices that students can make.)

Sample Trip (by combined expenses)

Day	Start	End	Distance (km)	Time (hours)	Fuel (litres)
1	Brandon	Emerson	295	3:17	29.5
2	Emerson	Melita	329	3:39	32.9
3	Melita	Snow Lake	805	8:59	80.5
4	Snow Lake	Grand Rapids	273	3:02	27.3
5	Grand Rapids	Lac du Bonnet	513	5:42	51.3
6	Lac du Bonnet	Morris	173	1:55	17.3
7	Morris	Brandon	253	2:49	25.3

Total distance travelled: 2641 km

Total time driving: 29:21

Fuel cost: 2641 km = 264.1 L = \$318.54

Expenses

Luxury Resort	1 night	\$200.00
Economy Motel	3 nights	\$195.00
Bed and Breakfast	1 night	\$90.00
Campground	1 night (full rental)	\$45.00
Tax	12% of total accommodations	\$63.60
Gourmet Meal	0 breakfast, 0 lunch, 2 suppers	\$90.00
Fast Food	5 breakfasts, 0 lunch, 0 supper	\$40.00
Basic Restaurant	0 breakfast, 3 lunches, 4 suppers	\$84.00
Grocery Store	0 breakfast, 4 lunches, 0 supper	\$24.00
Local Museum	3	\$15.00
Community Tour	1 self-directed, 1 guided	\$15.00
Cultural Event	2	\$20.00
Sporting Event	1	\$15.00
Nature Trail	2	\$0.00
Fuel		\$318.54
Miscellaneous	\$20 per day	\$140.00
	TOTAL	\$1,355.14

Sample Trip (by daily expenses)

DAY 1

Travel

Brandon to Emerson

Distance 295 km

Time: $295 \text{ km} \div 90 \text{ km/h} = 3:17$

Fuel: $295 \text{ km} \div 100 \text{ km per 10 L of fuel} = 29.5 \text{ L}$

Fuel Cost: $29.5 \text{ L} \times 1.22 \text{ \$/L} = \$35.99$

Meals

Breakfast: at home

Lunch: Basic Restaurant – \$12

Supper: Gourmet Meal – \$45

Activity

Cultural Event: \$10

Accommodation

Economy Motel – $\$65 \times \$1.12 = \$72.80$

Miscellaneous

\$20

TOTAL EXPENSES FOR DAY 1 = \$195.79

