PROVINCIAL NUMERACY ASSESSMENT

An Introduction

&

Tips for Success

THE BASICS

- **WHO:** All Grade 11 students and younger
- **WHEN:** Based on your last name
  - **A – G: June 25 1PM**
  - **H – L: June 26 9AM**
  - **M – R: June 27 9AM**
  - **S – Z: June 28 9AM**
- **WHERE:** At the school in one of the computer labs

Now for the WHAT...

THE ASSESSMENT

WHAT IT IS

- Using math to solve real world problems
- Communicating your solutions using **mathematical operations, graphs, pictures, and/or WORDS**
- Generally utilizes math skills learned before Grade 10

WHAT IT ISN'T

- Not a math test
- Not based on what you are learning in your current math course
- You won't see questions like
  - Multiply $2x(x + 3)$
  - Graph the function $f(x) = |-5x + 2|$

The assessment itself is delivered online and has three essential components:

Common component: 24 questions answered online by all students

Student-choice component: 2 long-response questions answered on paper. These questions stem out of the information and work the student will have completed in the common component. Students get to pick 2 of 4 possible questions, based on their interest, and take their analysis deeper.

Self-reflection component: answered online (not marked)

There are also pre-assessment activities for students to explore ahead of time and activate their thinking, such as the sample assessment and the collaborative-learning videos explaining the five numeracy processes.

The different components

TYPES OF QUESTIONS

- Reasoned Estimates – These tasks require students to make or use estimates across multiple variables in order to build a logical argument for a possible solution (e.g., travelling to Australia).
- Plan and Design – These tasks may require students to analyze time, space, cost, and people in order to make a recommendation (e.g., shipping several containers).
- Fair Share – These tasks require students to decide how to best share something fairly (e.g., giving out bonuses).
- Model – These tasks require students to come up with a model or strategy, given a data set; and then to apply this model or strategy to a new data set and, if necessary, to refine the model (e.g., ranking criteria).

You will complete questions in the following order:

1. 6 selected response for each of the Reasoned Estimate and Plan and Design scenarios

2. Your choice of either written question

3. 6 selected response for each of the Fair Share and Model scenarios

4. Your choice of EITHER written questions

****You do not get to see the written questions before you choose which one to attempt**

You must use the multiple choice questions to guide your decision making

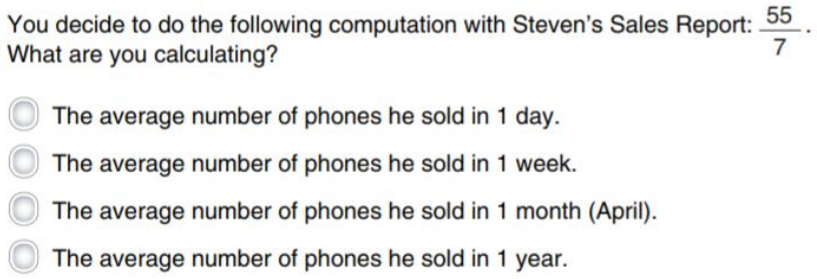
Two Types of Selected Response Questions

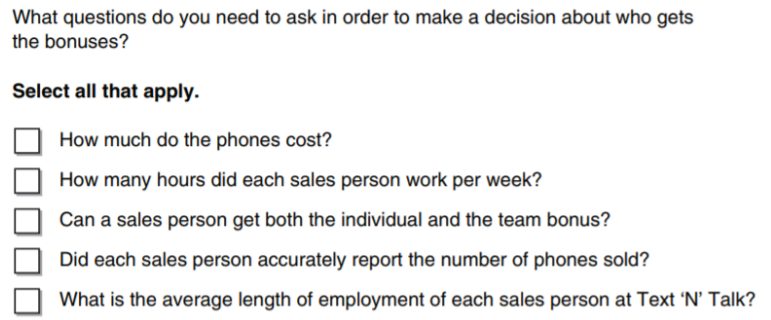
Traditional Multiple Choice

- Has one correct answer

Multiple Response

- Has multiple correct answers





Both are marked either correct or incorrect

You don't get partial marks for getting some of the multiple response answers – it's all or nothing

THE RUBRIC
(FOR WRITTEN RESPONSE)

- Scored in a holistic manner
  - Based on the big picture of your solution rather than counting errors
  - Example: You could have a minor calculation error and still receive a 4
- Emphasis is on <u>both</u> **COMMUNICATION** and **MATHEMATICAL CORRECTNESS**

Snapshot	1	2	3	4
	The student demonstrates an inadequate understanding of the situation. The strategy is ineffective. The solution may contain fundamental mathematical errors. The reasoning is missing or irrelevant; the logic does not reference the problem.	*The student demonstrates a basic understanding of the situation. The strategy is unclear and/or incomplete. The solution may contain mathematical errors. The reasoning is unclear; but the logic correctly references some aspects of the problem.*	*The student demonstrates an adequate understanding of the situation. The strategy is sensible but has some inconsistencies. The solution may contain minor mathematical errors. The reasoning is evident, and the logic references most aspects of the problem.*	*The student demonstrates a proficient understanding of the situation. The strategy is effective and comprehensive. The solution may contain minor mathematical errors that do not affect the demonstration of proficiency. The reasoning is clear and the logic references all aspects of the problem.*
	NR *No response (answer page is blank).*	0 *Information simply recopied from the problem. Diagrams or calculations are unrelated to the problem. Response does not address the purpose of the task. An incorrect mathematical solution with no work shown. Inappropriate response (contains profanity, inappropriate diagram or language). All work is erased or crossed out. Any zero score must include rationale and be approved by the section head.*		

Getting a 4 on the written questions does not mean you get a 4 on the entire assessment

The Overall Score

1

Selected Response (multiple choice)

- 24 questions
- Worth 60% of the overall score

2

Constructed Response (written)

- 2 written responses
- Worth 40% of the overall score

3

Self-Reflection

- Not scored
- Does not contribute to the overall score

SOME TIPS AND TRICKS

1. MAKE SMART DECISIONS ABOUT WHICH QUESTION TO CHOOSE

- Use the multiple choice questions to guide your decision
- Make choices that play to your strengths
- Don't choose based on the topic (I like dogs so I'll choose that one)

2. CONSIDER WHAT YOU ARE ASKED TO DO

- Highlight key words (there is a function on the computer) or make a list
- Make sure you complete the task that you are asked to do
  - Don't stop half way
  - For **Fair Share** questions, make sure you are splitting things up based on the criteria provided (don't just divide by the number of people)
  - For **Plan and Design**, make sure you are reaching your targets

3. STATE YOUR ASSUMPTIONS

- **ALL** questions ask you to state assumptions
- Example: I assume that the pattern shown in the graph will continue
- A really good way to bump your score up

4. SHOW ALL OF YOUR THINKING

(DON'T ASSUME ANYTHING IS OBVIOUS)

- Show **all** calculations
- Use labels to identify your work
- Explain your choices and why you made them

5. USE MULTIPLE TYPES OF COMMUNICATION

MATH – WORDS – PICTURES – GRAPHS – TABLES

- You cannot rely solely on math or solely on words
- To get a strong mark, you must use both
- Pictures, graphs, and tables can also help

6. MAKE YOUR SOLUTION CLEAR

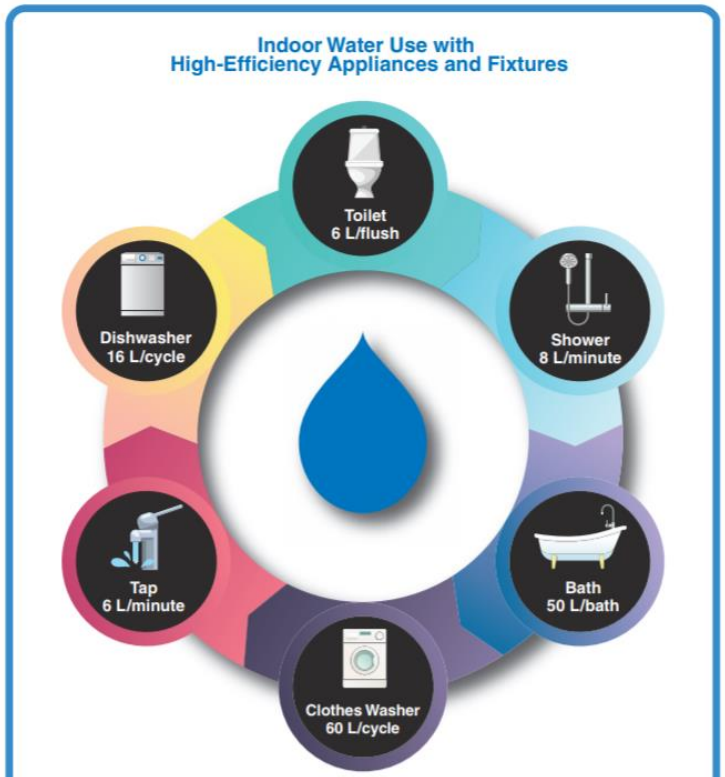
- Clearly state a conclusion to the task
- One or two quick & to-the-point sentences

LET'S TRY ONE

- You will have approximately 15 minutes to work through one of the sample constructed response questions
- Try to focus on communication as you write your answer
- Keep some of the tips we talked about in mind
- After 15 minutes, we will look at some exemplars to get a better idea of how they are scored

Water Use

High-efficiency appliances and fixtures can help reduce the amount of water we use.



13. You want to reduce your personal water use to 1050 L/week. You install high-efficiency appliances and fixtures, and change your water-use habits.

    Plan a water budget for yourself for 1 week that meets this goal using the high-efficiency appliances and fixtures.

    Explain and justify your solution.

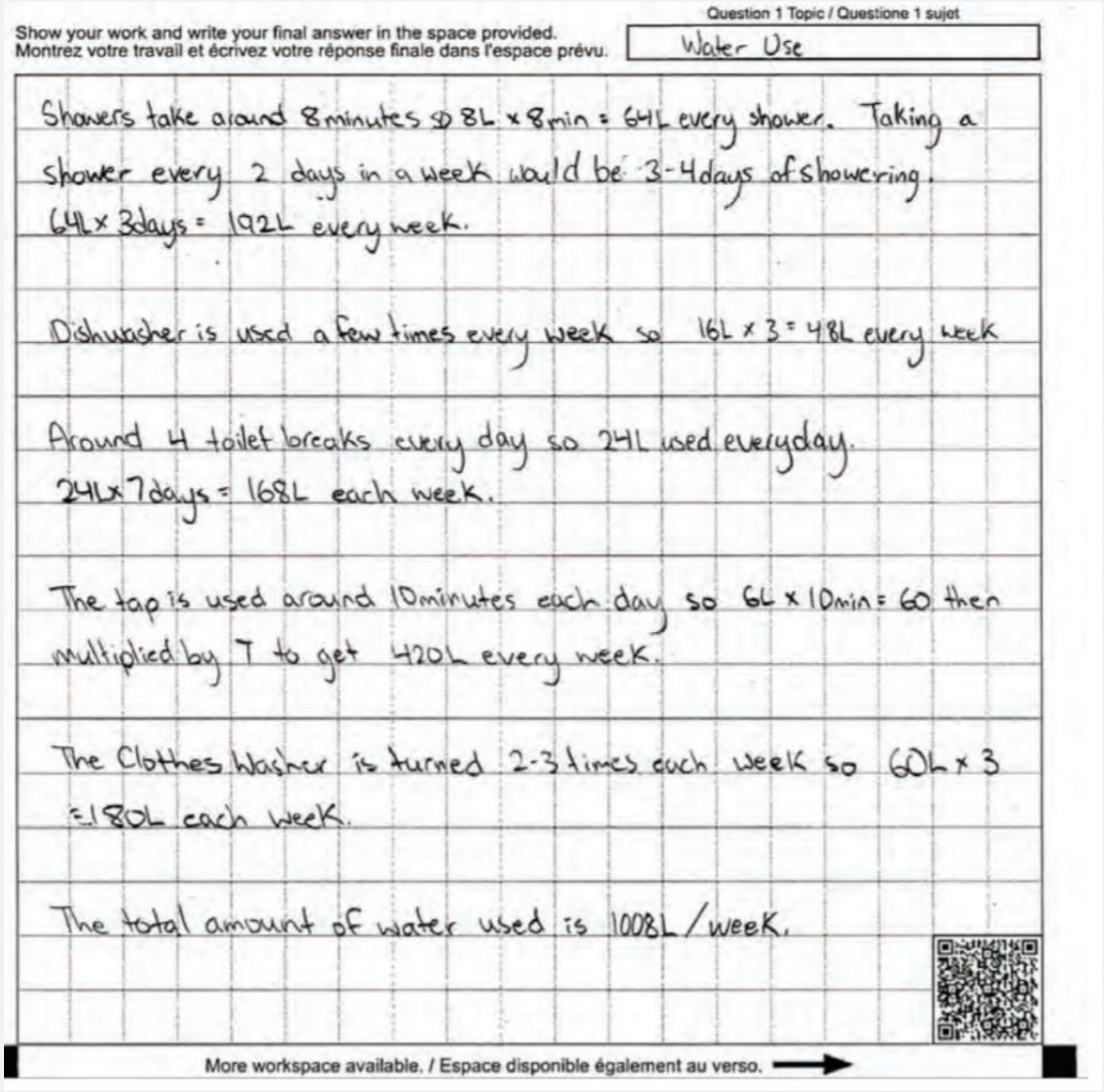
    You must use everything in the table below at least once in the week.

High-Efficiency Appliances and Fixtures
Shower and/or bath
Toilet
Tap
Dishwasher
Clothes Washer

    This question is to be answered on paper.

SCORE: 4

- Proficient Understanding
  - Water usage identified and explained
  - All work shown
- Strategy is effective and comprehensive
  - Calculations are clear and correct
- Logic references all aspects
  - Each fixture has a reasonable explanation
  - Each fixture is mentioned
- Reasoning is clear
  - Water usage within limit
  - Communication is clear



Question 1 Topic / Question 1 sujet

Show your work and write your final answer in the space provided.
Montrez votre travail et écrivez votre réponse finale dans l'espace prévu.

Water Use

Showers take around 8 minutes @ 8L x 8min = 64L every shower. Taking a shower every 2 days in a week would be 3-4 days of showering.
64L x 3days = 192L every week.

Dishwasher is used a few times every week so 16L x 3 = 48L every week

Around 4 toilet breaks every day so 24L used everyday.
24L x 7days = 168L each week.

The tap is used around 10minutes each day so 6L x 10min = 60 then multiplied by 7 to get 420L every week.

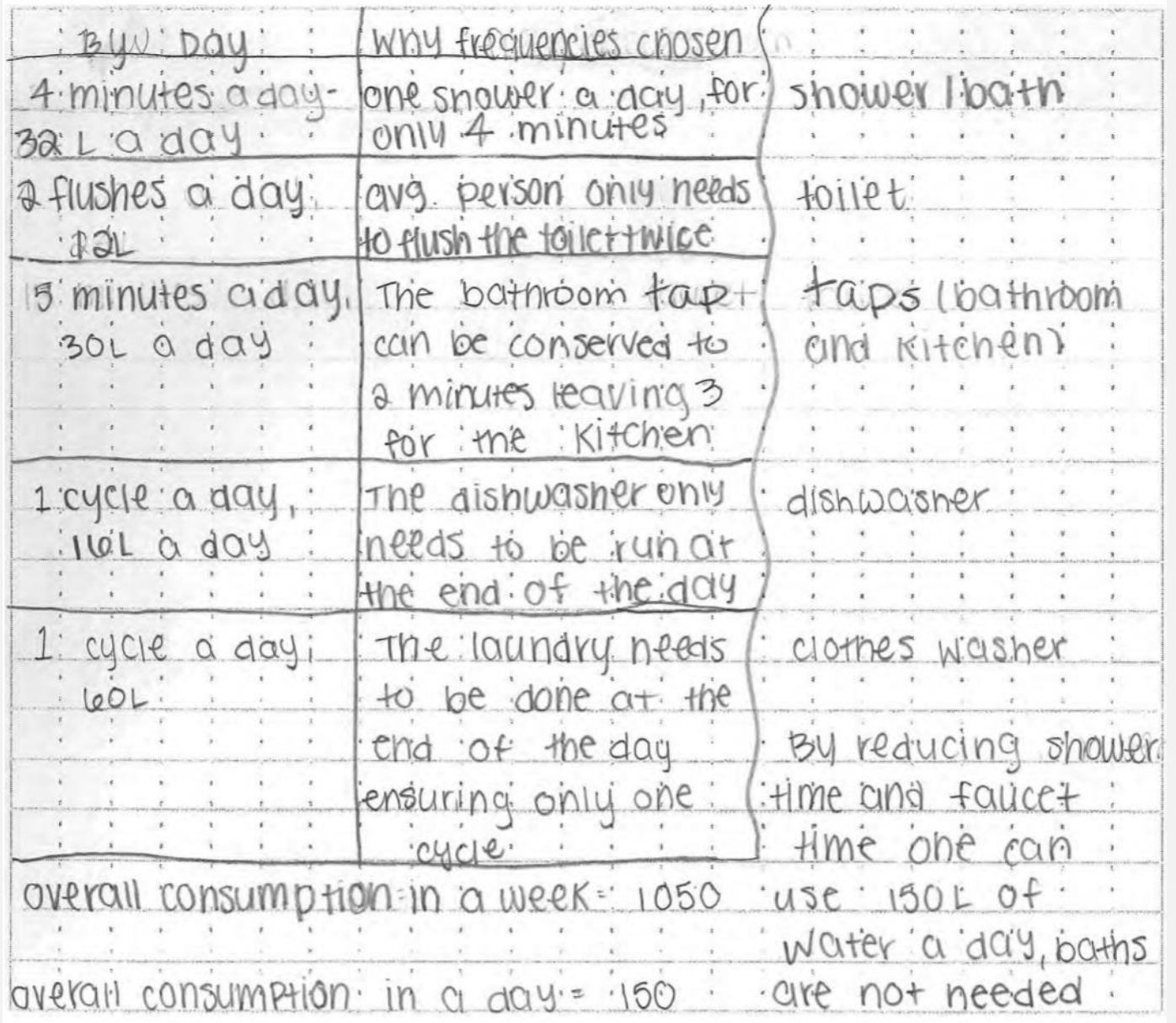
The Clothes Washer is turned 2-3 times each week so 60L x 3 = 180L each week.

The total amount of water used is 1008L / week.

More workspace available. / Espace disponible également au verso.

SCORE: 3

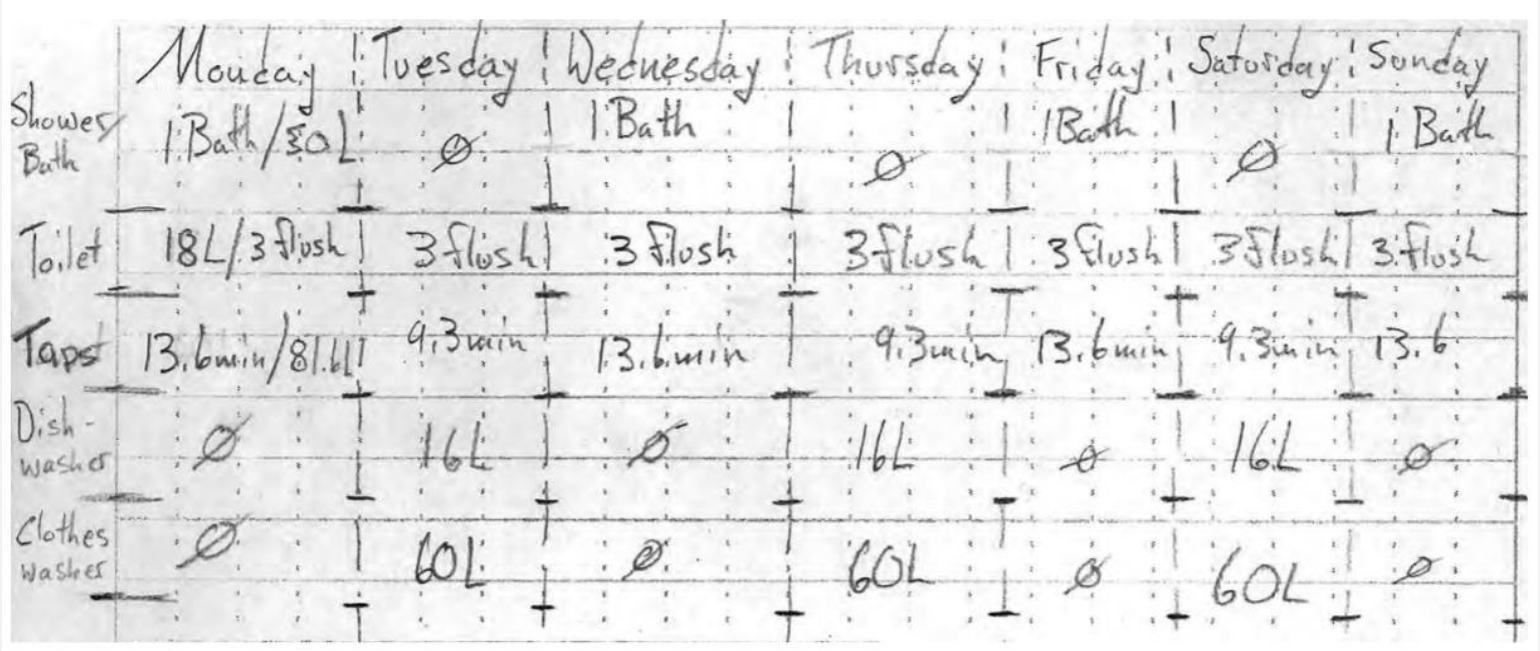
- Adequate Understanding
  - End result meets the criteria
- Strategy is sensible, some inconsistencies
  - Good strategy
  - Daily consumption does not match weekly consumption
- Logic references most aspects
  - Missing some calculations
  - Using dishwasher & clothes washer once a day is unreasonable
- Reasoning is evident
  - Communication is clear



By day	Why frequencies chosen	
4 minutes a day - 32 L a day	one shower a day, for only 4 minutes	shower / bath
2 flushes a day 12L	avg. person only needs to flush the toilet twice	toilet
5 minutes a day, 30L a day	The bathroom tap can be conserved to 2 minutes leaving 3 for the kitchen	taps (bathroom and kitchen)
1 cycle a day, 16L a day	The dishwasher only needs to be run at the end of the day	dishwasher
1 cycle a day; 60L	The laundry needs to be done at the end of the day ensuring only one cycle	clothes washer
overall consumption in a week = 1050		By reducing shower time and faucet time one can use 150L of water a day, baths are not needed
overall consumption in a day = 150		

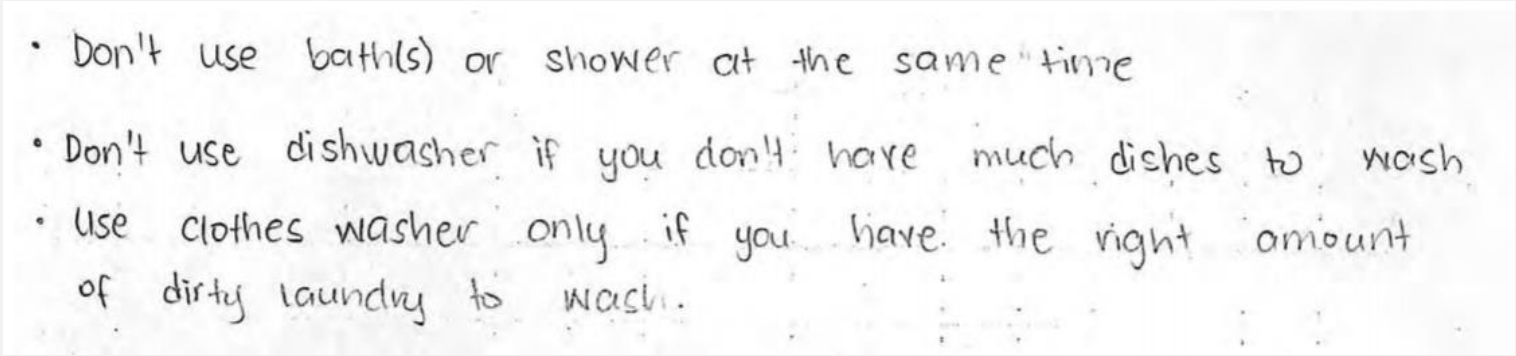
SCORE: 2

- Basic Understanding
  - Incomplete solution
- Strategy is unclear/incomplete
  - Good strategy but not followed through
- References some aspects
  - Each fixture is mentioned but no total use is calculated
- Reasoning is clear but incomplete
  - No supporting calculations
  - No real solution presented



SCORE: 1

- Inadequate Understanding
  - Addresses the concept but not the specific problem
- Strategy is unclear/incomplete
  - A limited attempt with no calculations
- Logic is inadequate
  - No calculations
  - Only mentions 3 utilities
- Reasoning is incomplete
  - No calculations
  - No solution



WHERE DOES YOUR SOLUTION FALL ON THE RUBRIC?

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What could you change to strengthen your work?

GOOD LUCK IN JUNE!

- Try some sample assessments https://www.awinfosys.com/eassessment/eexams_sample.htm
- Remember, you don't need to spend hours studying!
- Email me at aimee.corrigan@sd35.bc.ca if you have questions