

## Grade 6 - Coding Unit Conversions

### Grade 6: Measurement Relationships

#### Curriculum Expectation

By the end of Grade 6, students will:

– solve problems requiring conversion from larger to smaller metric units (e.g., metres to centimetres, kilograms to grams, litres to millilitres)

### Part A Basic Understanding of Unit Conversions

Complete the following practice questions. The first one has been done for you.

- 1) Convert 10 Kg to grams (Note: There are 1000 g in 1 Kg).

To go from kilograms to grams, multiply by 1000.

$$10 \text{ kg} \times 1000 \text{g/kg} = 10\,000 \text{ g}$$

- 2) Convert 5 m to centimetres (Note: There are 100 cm in 1 m).
- 3) Convert 0.5 L to millimetres (Note: There are 1000 mL in 1 L).
- 4) Convert 0.23 Kg to grams.



### Part B The Basic Program

Create a program that does the following:

- ✓ Asks the user for the number of metres
- ✓ Calculates and outputs the number of centimeters

Here is a video tutorial link that shows you how to create this program. You may adjust the sprites, colours, etc. to your liking:

[The Basic Program Link](https://www.youtube.com/watch?v=2q9Wc3Vm8nM) (https://www.youtube.com/watch?v=2q9Wc3Vm8nM)

### Part C The Challenge Program

You will create a program that asks the user if they would like to convert from kilograms to grams or grams to kilograms and will output the result.

The program will:

- ✓ Determine if the user would like to convert from kilograms to grams or grams to kilograms
- ✓ Calculate the conversion
- ✓ Output the proper conversion to the user

Possible Answer (link to video tutorial):

[The Challenge Program Link](https://www.youtube.com/watch?v=4Uq7RARmTWE) (https://www.youtube.com/watch?v=4Uq7RARmTWE)

**Part D****Further Extensions**

- a) Give the user multiple unit conversion options (m to cm, L to mL).
- b) Give the user the option to calculate the unit rate, given a certain price.