**Mix & Flow of Matter**

Unit One—Grade 8

Read pages 13-15 **Topic 2** Mixing & Dissolving

On page 13 review the diagram **Classification of Matter**

* Focus on **Mixtures**

Your task is to **design an experiment** (Stem 3) where you will combine your knowledge of mixtures and your environmental impact (Stem 4).

You will study your behaviour with reference to recycling at home using the City of Calgary’s blue bin and your knowledge of **Classification of Matter** (p. 13).

If you do not have access to a blue bin, you will need to find a friend, family member, or other where you will be able to complete this project.

**Review a sample of an Inquiry Investigation—see page 22/23**

* Safety Precautions
* Apparatus
* Materials
* Procedures
* Data table
* Graph
* Conclusion

**Your write-up will require:**

* the headings mentioned above
* a table showing how you categorized the materials in your blue bin (see ideas on rubric)
  + see page 513 of your science textbook
  + this is your raw data
* a graph (your choice) that represents your table
  + this was reviewed in math class
* state the first & last day of your experiment
  + experiment is 7 days long
  + consider the day your blue bin gets collected
  + place this under the **Procedure** heading
* a statement explaining your parent’s involvement and their signature
  + this is for safety reasons
  + include this portion under the **Safety Precautions** heading
* you can incorporate information from the videos we viewed in class
  + Calgary recycling: How Recyclables are Sorted
  + Too Good to Waste
  + Doing the math on Calgary’s “free” composting program
* This report is to be typed with the following fonts:
  + Calibri
  + Size 11
  + Title is font 14 and **bolded**
  + Headings, i.e. **Apparatus** use font size 12 and **bolded**

You will receive two separate marks for this assignment. See attached rubric for marking scheme.

**Rubric**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Stem 4:** Explores scientific events and issues in society and the environment | | | | |
|  | 4 | 3 | 2 | 1 |
| Circle the indicator that demonstrates your perception of your achievement.  1 2 3 4 | **Conclusion** synthesizes the information in the charts and graphs into meaningful statements about your waste production and provides thoughtful suggestions on improvements. | **Conclusion** synthesizes the information in the charts and graphs into meaningful statements about your waste production. | **Conclusion**  accurately summarizes the information in the charts and graphs. | Does not adequately address the human impact of recycling. |

**Conclusion:**

PART I

In your conclusion, draw a picture of three bins. Identify each by colour (blue, green, black) and underneath the picture identify that bin’s contents: recycling, garbage, compost. On each bin, draw a horizontal line to show the height of the accumulated waste (matter). Use a few descriptive sentences to explain your household’s weekly waste production. What changes can you make to your weekly practices to improve how you sort your production of waste?

PART II

Using your table and graph as support, use several descriptive sentences to show the distribution of materials in your blue bin (recycling bin).

**Suggested headings** for your table/graph are: paper, cardboard, cans (refundable vs. non-refundable), tinfoil, plastic bags, glass bottles (refundable vs. non-refundable, plastic containers (shampoo bottles).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Stem 3:** Develops skills for inquiry and communication | | | | |
|  | 4 | 3 | 2 | 1 |
| Circle the indicator that shows your perception of your achievement  1 2 3 4 | * Safety Precautions * Apparatus * Materials * Procedures   These areas of study are addressed with thoughtful consideration to produce a safe and meaningful learning experience.  Writing is so clear, that the experiment could be reproduced with precision by a third party. | * Safety Precautions * Apparatus * Materials * Procedures   These areas of study are addressed with thoughtful consideration to produce a safe and meaningful learning experience. | Experiment was designed to address the following areas:   * Safety Precautions * Apparatus * Materials * Procedures   Information was presented using the above categories as headings. | Experiment does not adequately meet the requirements of inquiry/ communication for this assignment |