 **Lab Report 10:**

**Investigating Tides**

***Question:***

What geological factors affect tidal ranges?

***Hypothesis:*** [**2**]

***Materials:***

Apron Plastic Dishpan

Pails or Other Containers 1 L or 2 L Containers

Ruler Rocks, Gravel, or Pebbles

Thin Sheets of Wood or Plastic Water

Block to Rest Dishpan On Waterproof Tape or Duct Tape

***Procedure:***

1. Measure the amount of water you use to create a low water level (“low tide”) in your empty dishpan. Place a block under one edge to create the high tide.
2. Select some of the materials from those listed. Plan 3 or 4 different coastlines to construct, using the same materials each time. Remember to vary the slope of the coastlines as you plan.
3. Once your plans have been approved by your teacher, begin building and testing your models.
4. Using the same amount of water as in step 1, measure the low tide, high tide, and tidal range for each model that you build.

***Observations:***

1. Draw a diagram to illustrate your “low tide” and “high tide.” **(5)**
2. Record the results of your different coastlines. **(5)**

***Analysis:***

1. How did changing the slope of the coastline affect the tidal range in your simulation? **(5)**
2. Does the height of the coastline also affect the tidal range? **(5)**

***Conclusion:***

What geological factors affect tidal ranges? **(3)**

***Evaluation:***

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| **Category** | **Level 4** | **Level 3** | **Level 2** | **Level 1** | **%** |
| **Observations** | The relationship between the procedure and what was observed is discussed in detail. All information is accurate. | The relationship between the procedure and what was observed is discussed. Most information is accurate. |  |  | 25 |
| **Diagrams** | Clear, accurate diagrams are included and make the experiment easier to understand. Diagrams are labeled neatly and accurately. | Diagrams are included and labeled neatly and accurately. |  |  | 25 |
| **Analysis** | The patterns in the observations are discussed and logically analyzed. Predictions are made about what might happen if part of the lab were changed or how the experimental design could be changed. | The patterns in the observations are discussed and logically analyzed. Some predictions are made. |  |  | 25 |
| **Conclusion** | Conclusion includes whether the findings supported the hypothesis, possible sources of error, and what was learned from the experiment. | Conclusion includes whether the findings supported the hypothesis and what was learned from the experiment. |  |  | 25 |