

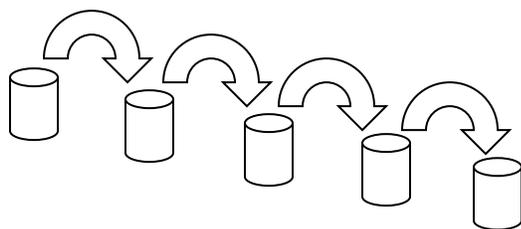
**Q101 Periodicity and Chemical Reactivity:**

This experiment determines what two variations in Group 2A?

What are all the members of Group 2A?

What would be your hypothesis?

Diagram how you would dilute a glass of Juice from full concentration to 1/16 concentration using the arrows and glasses below showing transfers between microplate wells and use  to indicate the addition of water (10 drops = 0.5ml).



| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|
|   |   |   |   |   |   |   |   |   |

If the 1<sup>st</sup> well (A1) is 0.1M of solution, show the calculations that lead up to the last well (A9) being  $4.8 \times 10^{-5}$ M solution.

A1 = 0.1M solution

A2 = 0.05M solution

A3 =

A4 =

A5 = \_\_\_\_\_ M solution

A6 = \_\_\_\_\_ M solution

A7 = \_\_\_\_\_ M solution

A8 = \_\_\_\_\_ M solution

A9 = \_\_\_\_\_ M solution

| <b>Mg<sup>+2</sup></b>                          | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> | <b>6</b> | <b>7</b> | <b>8</b> | <b>9</b> |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| <b>Na<sub>2</sub>SO<sub>4</sub></b>             |          |          |          |          |          |          |          |          |          |
| <b>Na<sub>2</sub>CO<sub>3</sub></b>             |          |          |          |          |          |          |          |          |          |
| <b>Na<sub>2</sub>C<sub>2</sub>O<sub>4</sub></b> |          |          |          |          |          |          |          |          |          |

| <b>Ca<sup>+2</sup></b>                          | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> | <b>6</b> | <b>7</b> | <b>8</b> | <b>9</b> |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| <b>Na<sub>2</sub>SO<sub>4</sub></b>             |          |          |          |          |          |          |          |          |          |
| <b>Na<sub>2</sub>CO<sub>3</sub></b>             |          |          |          |          |          |          |          |          |          |
| <b>Na<sub>2</sub>C<sub>2</sub>O<sub>4</sub></b> |          |          |          |          |          |          |          |          |          |

| <b>Sr<sup>+2</sup></b>                          | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> | <b>6</b> | <b>7</b> | <b>8</b> | <b>9</b> |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| <b>Na<sub>2</sub>SO<sub>4</sub></b>             |          |          |          |          |          |          |          |          |          |
| <b>Na<sub>2</sub>CO<sub>3</sub></b>             |          |          |          |          |          |          |          |          |          |
| <b>Na<sub>2</sub>C<sub>2</sub>O<sub>4</sub></b> |          |          |          |          |          |          |          |          |          |

| <b>Ba<sup>+2</sup></b>                          | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> | <b>6</b> | <b>7</b> | <b>8</b> | <b>9</b> |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| <b>Na<sub>2</sub>SO<sub>4</sub></b>             |          |          |          |          |          |          |          |          |          |
| <b>Na<sub>2</sub>CO<sub>3</sub></b>             |          |          |          |          |          |          |          |          |          |
| <b>Na<sub>2</sub>C<sub>2</sub>O<sub>4</sub></b> |          |          |          |          |          |          |          |          |          |

**Figure 1:** (provide a meaning full title for this figure: explain what is it? why did you do it? what were the results?)

- ↑P = high level precipitant
- P = precipitant
- ↓P = low level precipitant
- ☒ = no reaction

Complete the graphic organizer that depicts the order of the experiment:

Word bank:

Serial dilutions  
Record sodium oxalate results  
Record sodium sulfate results  
Add  $\text{Na}_2\text{CO}_3$   
Serial dilutions  
Label Microplates

Measure out initial 0.1M solutions  
Record sodium carbonate results  
Add  $\text{Na}_2\text{SO}_4$  Add  $\text{Na}_2\text{C}_2\text{O}_4$   
Hypothesis  
Serial dilutions  
Conclusions

