Namae

**Cell Membrane Transport**

Instructions:

1. Go to this website: <https://phet.colorado.edu/en/simulation/membrane-channels>
2. Click “download”.
3. Consider the upper part outside the cell as the ‘area of low concentration’ and the lower part within the cell as the ‘area of higher concentration’.
4. Add 1 green gated channel and 1 blue gated channel to the cell membrane.
5. On the upper part ‘area of lower concentration of water’, add 20 green circles.
6. On the upper part ‘area of higher concentration of potassium’, add 20 blue diamonds.
7. Assume that the green circles are the solvent (water).
8. Assume that the blue diamonds is an element (potassium).

Answer the following questions below about what you observe in the simulation. You are able to type on the lines below.

**Part 1:**

List 5 observations when you open the blue and green gated channels. Remember to use details, the amount of time that has passed and the number of molecules that have been transported.

1.)

2.)

3.)

4.)

5.)

After listing your observation, click “reset all” and do the same process again, following the instructions listed above. Answer the following questions below.

**Part 2:**

1. Open the green gated channel and observe. What did you observe when you open the green gated channel?
2. Based on your observations, what type of solution have you observed? Is it ‘hypertonic’, ‘hypotonic’ or ‘isotonic’? Explain.
3. Open the blue gated channel. Observe on what will happen when you open the blue gated channel. What have you observed?
4. What type of solution have you observed? Is it ‘hypertonic’, ‘hypotonic’ or ‘isotonic’? Explain.
5. Slow down the animation. What did you observe on the motion of the green circles and blue diamonds?