Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Why Do Athletes Drink Gatorade?**

1. Gatorade vs. Water
   1. Watch this ad: <http://www.youtube.com/watch?v=fcKb_X321Ko>
   2. Is it better to drink Gatorade or water? Let’s vote!
   3. Why would anyone drink Gatorade? What does it have that water doesn’t?
2. Can you die from drinking too much water?
   1. How does drinking water kill you?
   2. Gatorade has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_!
   3. Electrolytes are \_\_\_\_\_\_\_\_\_\_\_\_! Our cells need both \_\_\_\_\_\_\_ and \_\_\_\_\_\_\_ to live
   4. What happens when you sweat?
3. How do molecules get through the cell membrane?
   1. **\_\_\_\_\_\_\_\_\_\_\_\_\_!**
   2. Definition:
      1. Where there’s a \_\_\_\_\_\_\_\_\_ to where there’s only a \_\_\_\_\_\_\_\_\_\_\_\_
   3. Rules:
4. Can all molecules diffuse through the cell membrane?
   1. What affects the type of molecule that can diffuse across the cell membrane?
   2. What affects diffusion speed? (Think about sugar diffusing into sweet tea!)
5. What’s happening to your gummy bears right now?
   1. When water diffuses across a membrane, it’s called **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
   2. The same rules of diffusion apply except water can go through special membrane proteins called **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
6. Animals cells and osmosis

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Hypertonic** | **Isotonic** | **Hypotonic** |
| External Environment (compared to the cell) | Low water, high salts | Equal water and salts | High water, low salts |
| Cell Response? |  |  |  |

1. When diffusion doesn’t work
   1. EX 1: the cell needs things to go \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ their concentration gradient
      1. The Na-K pump! The cell needs a lot of K+ inside for nerve impules
      2. Requires **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**!
   2. EX 2: when there are REALLY \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ items to take in/out
      1. Endocytosis:
      2. Exocytosis:
      3. Requires **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**!
2. **Gatorade VS Water: Homeostasis**
   1. **Homeostasis** –
   2. Important for \_\_\_\_\_\_\_\_\_\_\_\_\_\_!
      1. EX Sweating regulates \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      2. BUT what’s the problem with sweating?
3. Let’s revisit our questions
4. Why is Gatorade sometimes better than drinking only water?
   1. What else could you do besides drinking Gatorade?
5. How can drinking too much water kill you?