Lab: Homer-o-stasis Name: _____ Per._____

Introduction: The human body functions through a series of negative and positive feedback pathways. The human organ systems work together to achieve homeostasis. This inquiry activity introduces the idea of *homeostasis* and positive versus negative feedback

Pre-Lab:

1. Watch the clip. What does *homeostasis* mean?

Goals:
-maintain a constant temperature of 25°C.
-keep the water level constant at Homer's eyebrows.
-maintain a constant concentration of "body fluid" in the leaky plastic cup for over 5 minutes.

Analysis:

1. Did Homer live? (If anything got way off, you will have killed Homer, just saying.) _____
Why or why not?

_____

2. What was the most difficult part of maintaining homeostasis for Homer?

_____

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3. When hospital staff says that a patient is stable, what do you think that means?

_____

_____

4. When we are sick with a fever, our body temperature is higher than 99.5 F but we are shivering and feel cold. Research WHY and what makes us feel cold despite having a high body temperature and why our body does this.

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5. Reptiles have no thermoregulation. However, they are not immune to bacteria and viruses. Research what a lizard might do when it gets sick.

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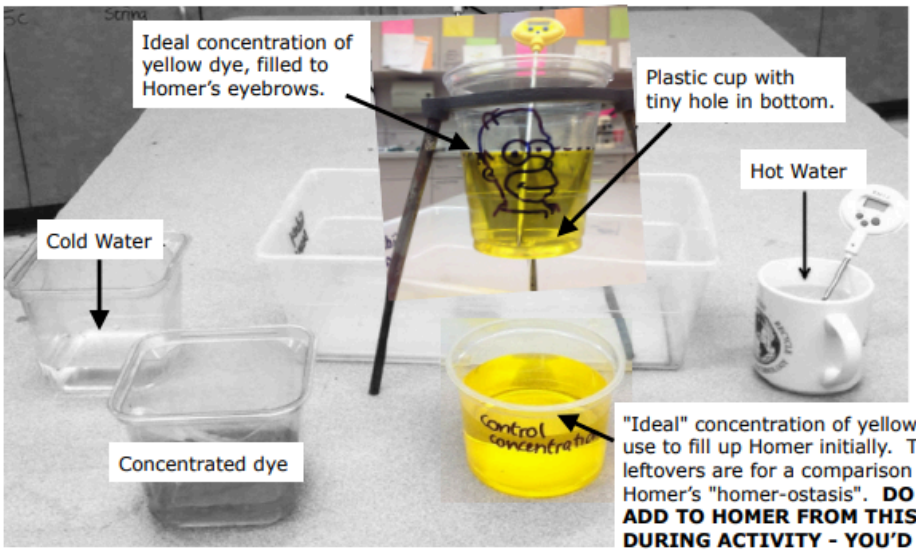
6. Compare the Homer-ostasis model to what occurs within your body. Obtain the "Homer-ostasis" sorting card sheet. Cut apart the cards and glue the cards in the correct column below.

Homer Cup Model	Real Life Body Fluid	Responsible Organ

Set Up

Homer has been admitted to the hospital because he is having difficulty maintaining stable levels of oxygen, carbon dioxide, and blood sugar. He has also become dehydrated and is unable to pee. This has affected his electrolyte levels and body temperature. As his physician, your job is to return Homer's body to "Homer-ostasis" for a minimum of 5 minutes!

Set-up: *your lab set up might not be exactly the same.*



Yellow liquid dripping from the cup.	Blood plasma is made up of 92% water and is 55% of blood volume.	98.6°F
Large Intestine- Absorbs water.	Kidneys- Filter out nitrogen waste, adjust salt levels, and regulate pH.	The concentration of electrolytes.
The yellowness of liquid.	The water level in the cup.	The temperature of yellow liquid.
Nitrogen waste- urine	Bladder and urethra- urine is collected and released out through the urethra.	Brain- hypothalamus: Body's thermoregulation system

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