

Do Now:

1. What are the 7 characteristics of living things? (think: ROACH ERG)

2. For the following photos, list which of the ROACH ERG characteristics they have. Then, determine whether the subject should be considered living or non-living



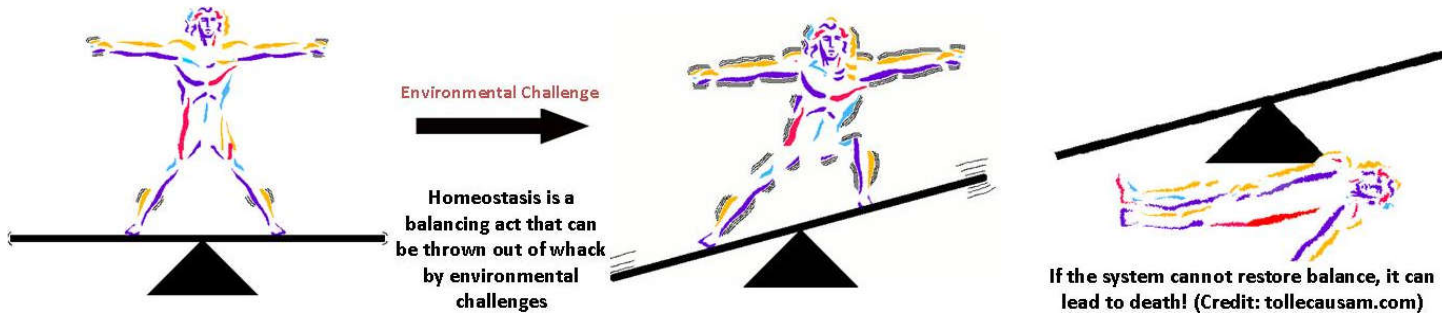
Dandelion



The Cold Virus

Homeostasis

A dynamic process of _____



For many organisms, the main players in maintaining homeostasis are the _____

and the _____

Nervous system: _____; transmits **nerve messages** throughout the body

Endocrine system: _____; produces and transports **hormones** throughout the body

Hypothalamus: a gland located in the middle of the brain that acts as the “_____”.

When it senses that homeostasis has been disturbed, it _____

There are many different systems in place that help regulate and maintain homeostasis in the body. There are two types of feedback systems in the body:

Negative Feedback (more common): Results in a _____ of a substance/process that is currently _____ in the body, and _____ (results in an increase of a substance/process that is currently too low in the body)

Ex:

Positive Feedback: Results in a _____ of a substance/process that is currently _____ in the body.

Ex:

Homeostasis Game

1. In your group, decide who will be the hypothalamus. The rest of group will be a Body
2. Each Body starts with 5 Body cards (1 of them should be a temperature baseline card) and 2 life tokens
3. Starting **Homeostasis Number** is **5 points**
4. For each round:
 - a. **Hypothalamus** plays **1 orange card** at the *beginning* of each round.
 - b. **Body** players will react to the hypothalamus card being played. To do so, body players must **discard a card** into the discard pile and **pick up a new card** for **each round**.
5. **GOAL:** Be as close to the homeostasis number as possible to stay alive. Don't lose your life tokens!

Homeostasis Game Questions

1. Which role, the hypothalamus or body, controlled what you had to do in order to maintain homeostasis?
2. As the 'body',
 - a. when did you play cards worth positive points? Why?
 - b. when did you play cards worth negative points? Why?
3. Were you okay (still alive) if the number of points you had was not exactly equal to the homeostasis number in a given turn? Could you stay like this forever or did you have to adjust?
4. Examine the processes on the "body cards" that you played. In general, do these processes require effort or the use of energy?
5. What are some examples of conditions your body has to regulate other than temperature?
6. Based on this game, come up with your own analogy or definition for homeostasis.

Homeostasis Questions

1. In your own words, what is homeostasis? Give an example.
2. Homeostasis and being able to respond to the environment are both characteristics of living things. Describe why being able to respond to the environment is necessary for a living organism to maintain homeostasis.
3. What is the hypothalamus? What is its role in maintaining homeostasis?
4. What is negative feedback? Describe how negative feedback is involved in regulating your body temperature when you walk into a room and it is suddenly very cold. Draw a diagram if it helps you.
5. What is positive feedback? Why do you think it's less common than negative feedback?