Living Earth – Week 2 Assignments

Summary from last week: Your body cells, although very different in structure/shape and function/jobs, are genetically identical (same exact DNA) because they all originated from one single cell the moment you were conceived (sperm + egg → single cell). Think of your body as a ***population*** of trillions of cells, all working together, even though they may have different jobs. You may recall from last week that once a cell has ***differentiated***, it is committed to <u>one</u> job and cannot take on another job (for example, a lung cell cannot decided to change jobs and become a blood cell or digestive cell).

Big ideas for this week:

- Your body cells are organized into different levels:

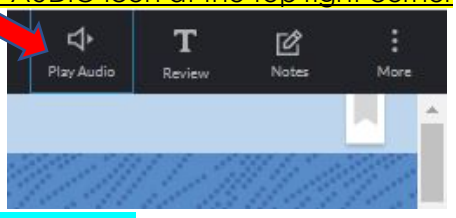
  Cells → Tissues → Organs → Organ Systems → Individual

- Each organ system depends on all the other ones doing their jobs, so that your body can stay alive. If one organ system stops functioning or is damaged, the other systems suffer and the organism could die.
- Homeostasis is an organism's ability to maintain a stable internal environment.
- Keep in mind that organ systems are found in multicellular organisms, so if we're learning about human organ systems, know the same systems are present in goldfish, worms, insects, birds, snakes, etc. Plants also have many organ systems but some are structured differently.

☑ <u>Assignment 1</u>:

1. Please log into the HMH Textbook through Clever (login instructions on my website)
2. On the top tab bar in the middle is "Assignments"…click on that.
3. Click on "Student EBook: Explore/Explain 3: Interacting Systems in Organisms."
4. Read and click/watch the interactives. (I suggest you have the "quiz" open and complete it as you are reading. It will make things go more quickly)
   a. <u>Please skip the "Hands on Lab," "Scaling Down/Language Arts" section about nanobots, and the "Collaborate" sections.</u>

   <u>Remember you can get the text read to you by clicking the PLAY AUDIO icon at the top right corner</u>

5. While going through the HMH reading, please complete these "quiz" questions:

   https://forms.office.com/Pages/ResponsePage.aspx?id=bsSeXYwVl0uXor1txqc9lt02SV_cSVJDowk8BQeYaexUNVlETklVTVJUVjlHRkdlWlVTUlVZQ1BXTy4u

<u>Optional video for more info on Interacting Organ Systems:</u> **4:45 min video**

TED-Ed: "How Your Muscular System Works – Emma Bryce": https://www.youtube.com/watch?v=VVL-8zr2hk4

(odd relationship here, for those who eat meat, particularly turkey and other birds: "Dark meat" is the slow-twitch muscle like leg muscles, and "light meat" is the fast-twitch muscle like flight muscles).

If you can, try the "Observe a sarcomere contracting" video at the very bottom and check to see how well you did with the drop-down answer choices.

☑ **Assignment 2:** Exploring human organ systems. Before starting, remember that these systems are found in other organisms. Your cats and dogs at home have the same parts, and you'll find the same in reptiles, amphibians, birds, mammals, and some of them in bugs, worms, and more.

1. Please watch the Amoeba Sisters video: ***"Human Body Systems Functions Overview: The 11 Champions (Updated)"*** at https://www.youtube.com/watch?v=gEUu-A2wfSE **8:22 min video**
2. Optional notes section: If you want, you print or copy this section to write down a general description of the functions of each of the following organ systems. You will NOT be turning this in.

ORGAN SYSTEM	Function
Circulatory	
Digestive	
Endocrine	
Excretory*	
Integumentary	
Lymphatic/Immune	
Muscular	
Nervous	
Reproductive	
Respiratory*	
Skeletal	

*Note the excretory and respiratory are somewhat similar, as the excretory system gets rid of waste through liquid, picked up from cells throughout your body, and the respiratory system gets rid of waste gases (CO_2) picked up from your body cells. The respiratory system has an added function of oxygen into the body, needed by all cells for cellular respiration (so lungs not just used for elimination of waste gases).

3. While you're watching the video please complete the questions:

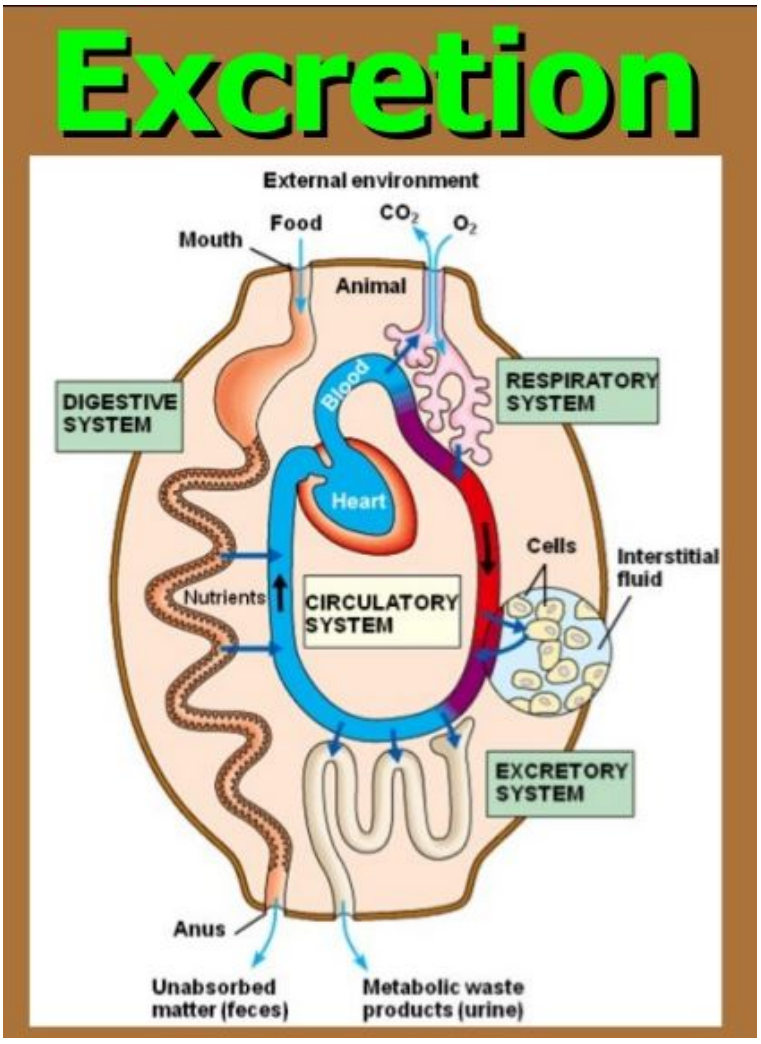
https://forms.office.com/Pages/ResponsePage.aspx?id=bsSeXYwVl0uXor1txqc9lt02SV_cSVJDowk8BQeYaexUN1JWTzE2STVNRUZNUTY2Rk9JSDJaQzA2TS4u

☑ **Assignment 3**: Summarizing digestive, nervous, and excretory systems.

1. Please view the TED-Ed video **"How Your Digestive System Works – Emma Bryce"** at https://www.youtube.com/watch?v=Og5xAdC8EUI for a little more detail on the digestive system.

4:56 video

2. Then, examine the simplified diagram of excretion below and follow the path of food, gases, and waste through the body.



Note: it is really important to know that deoxygenated blood IS NOT BLUE in real life, but every diagram in the world shows it as blue to indicate it's deoxygenated. Deoxygenated blood is actually red, just slightly darker red that the blood that has come into contact with oxygen from your lungs.

The excretory system filters your blood, and maintains a balance of water, salts, and nutrients. Metabolic waste is eliminated from your blood…remember the nitrogen cycle we talked about in Semester 1? Also keep in mind homeostasis from earlier in this assignment.

Optional video if you have time: "The Excretory System: From Your Heart to the Toilet – CrashCourse Biology #29" https://www.youtube.com/watch?v=WtrYotjYvtU

12:20 video

3. When done, please take the final "quiz" questions for this week:

https://forms.office.com/Pages/ResponsePage.aspx?id=bsSeXYwVl0uXor1txqc9It02SV_cSVJDowk8BQeYaexUQTk2UTlPS0FHRkJaNkw2WkVMWjc2R1g4OS4u

Have a good week! Email or text me if you have any questions!

Mrs. Horton