

## Living Earth – Week 2

**Recap:** Your body cells, although very different in structure and function, are genetically identical, as 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 one job and cannot take on another job (for example, a lung cell cannot decide to change jobs and become a blood cell or digestive cell).

### Big ideas we'll be discussing:

- 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 others 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.



**Assignment 1:** Please log into the HMH app via Clever, and work through

Unit 7: Structure and Function of Living Things

Lesson 2: Organisms: From Cells to Body Systems

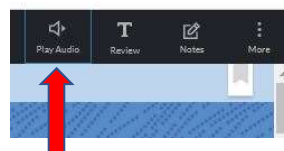
Explore/Explain 3: Interacting Systems in Organisms.



Student eBook

Explore/Explain 3: Interacting Systems in Organisms

5 standards | Show Details



Remember you can get the text read to you in an audio format by clicking the **PLAY AUDIO** icon at the top right corner of the web page.

Please skip the **Scaling Down / Language Arts** section regarding researching nanobots.

Also please skip the **Collaborate** sections within the section.

### A recommended supplementary video:

4:45 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.

**Commented [SH1]:** I fixed a typo and uploaded a new pdf.

**Commented [SH2R1]:** Also formatting is a little wonky in the Word doc, but it seemed to do better when I downloaded and worked on it in MS Word, not the online doc version.

After completing the HMH reading, please complete the quiz in this hyperlink

<https://forms.office.com/Pages/ResponsePage.aspx?id=bsSeXYwVl0uXor1txqc9lkzD7ovUBylluEOjUbcSijUMjBVSkowWEVBQ0NYOFFSNjMyV05VUFVUNI4u>

**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.

8:22 video

Please watch the Amoeba Sisters' video "Human Body Systems Functions Overview: The 11 Champions (Updated)" at <https://www.youtube.com/watch?v=gEUu-A2wfSE>. As you watch, please jot down a general description of the functions of each of the following organ systems:

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<sub>2</sub>) picked up from your body cells. The respiratory sys. 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).

When complete, and using your notes from the table above, please complete the quiz below

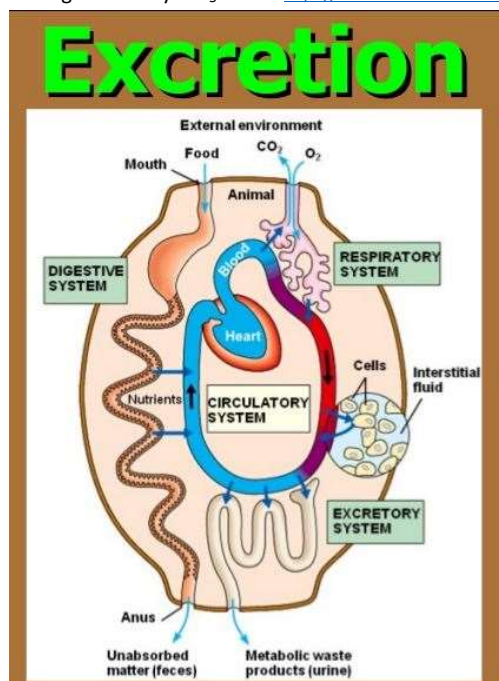
<https://forms.office.com/Pages/ResponsePage.aspx?id=bsSeXYwVl0uXor1txqc9IkzD7ovUBylluEOjUbcsSiJUM1NTskVDNUZOV1VCMjISNTJTSDFTQjhNMMy4u>

### Assignment 3. Summarizing digestive, nervous, and excretory systems.

Please view the TED-Ed video “How Your Digestive System Works – Emma Bryce” at <https://www.youtube.com/watch?v=Og5xAdC8EUl> for a little more detail on the digestive system.

4:56 video

Then, examine the simplified diagram of excretion below and follow the path of food, gases, and waste through the body. Image source: <https://www.online-sciences.com/wp-content/uploads/2014/11/Excretion-3.jpg>



Side note, it is really important to know that deoxygenated blood IS NOT BLUE, but every diagram in the world shows it as blue to indicate it's deoxygenated. Deoxygenated blood is actually red, just slightly darker red than 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.

12:20 video

**Optional supplementary video if you have time:** “The Excretory System: From Your Heart to the Toilet – CrashCourse Biology #29” (<https://www.youtube.com/watch?v=WtrYotjYvtU>)

When done, please take the final “quiz” for this week, found at

<https://forms.office.com/Pages/ResponsePage.aspx?id=bsSeXYwVl0uXor1txqc9IkzD7ovUBylluEOjUbcsSiJUMklwSExHUK8zVFhURDRDNURZWtINUDhPri4u>

Thank you and have a good week!