

Cells and Systems: Cells, Tissues, and Body Systems

30 minutes, 3 stages

Every living thing, from a single amoeba to your own body, works because cells do specific jobs and cooperate as systems. This homework checks that you can distinguish plant and animal cells, explain how cells build into tissues and organs, and describe how body systems keep you alive and responding to change ([Outcome](#), [Outcome](#)).

Stage 1: Warm-up (8 min)

Label and sort. Work quickly, this is recall practice.

1. Draw two simple circles side by side. Label one "Plant Cell" and the other "Animal Cell." Inside each, list at least three structures it contains. Include cell wall in only one of them ([Outcome](#)).
2. Sort these terms into the correct order from smallest to largest: organ, tissue, cell, organism. Write the sequence as a chain using arrows (for example: cell !' ...) ([Outcome](#), [Topic](#)).
3. In one sentence, explain the difference between a single-celled organism and a multicelled organism. Use an example from your own life or from nature (an amoeba, a bacterium, a tree, a dog) ([Outcome](#)).

Stage 2: Apply it (14 min)

Answer each question in full sentences.

4. Diffusion moves substances from an area of high concentration to an area of low concentration. Explain why oxygen moves into your blood cells in the lungs but carbon dioxide moves out of them. Use the word "concentration" in your answer ([Outcome](#)).
5. Choose two of the following human body systems: respiration, circulation, digestion, excretion, sensory awareness. For each one you choose, write two to three sentences describing its job and naming at least one organ involved ([Outcome](#)).
6. Pick one specific cell type from this list: nerve cell, muscle cell, blood cell, skin cell, bone cell. Describe how that cell type contributes to keeping your body healthy ([Outcome](#)).
7. Your heart rate rises when you run to catch a bus, and it drops back down once you're sitting on it. Describe this change and explain what triggers it. Then give one more example of your body changing its function in response to a changing condition (temperature, exercise, a sudden loud noise) ([Outcome](#)).
8. Different animals gather food in very different ways: a hawk uses talons, an earthworm absorbs nutrients through its skin, a bee uses a proboscis to drink nectar. Choose two organisms (from this list or your own examples) and explain how their food-gathering structures differ even though the function, getting food, is the same ([Outcome](#)).

Stage 3: Consolidate (8 min)

9. Write a short paragraph (four to six sentences) that connects the idea of "system" to your own body. Start with the sentence: "My body is made of cells that combine into tissues, organs, and systems." Then explain, using one system as your example, how its parts work together to keep you healthy ([Outcome](#), [Outcome](#), [Topic](#)).
10. Check your Stage 1 diagram. Circle one structure in each cell that shows a real difference between plant and animal cells, and write a one-sentence explanation of why that difference matters for how the cell functions.

Self-check

- Can you name two structures found in a plant cell but not in a typical animal cell?
- Can you explain, using the word "concentration," why gases move into and out of cells during diffusion?
- Can you describe one human body system, name an organ in it, and explain how that system responds when your body's conditions change (for example, during exercise)?