

Name: _____ Period: _____ Date: _____

“Incredible Human Machine”

National Geographic Video

Circulatory/Respiratory System(Part 4, 0:00-2:05, 4:12-6:02, 9:48-11:00)

1. Every second of every day, our cells need _____ to survive.
2. A _____ of blood needs to travel through 60,000 miles of arteries, veins, and capillaries, and the _____ drives the whole system.
3. The heart is a muscular _____, made of cardiac cells.
4. _____ cells live in many tissues in the body. They can develop into almost any kind of cell and are used to repair the body.
5. Once out of the heart, blood carries oxygen through _____, reaching a smaller network of capillaries.
6. _____ billion capillaries fan through the body so our organs and tissues are never far from a fresh supply of _____.
7. Carbon dioxide and other toxins need to get out and _____ are crucial drain pipes, carrying the blood back to the heart then to the _____ for cleaning.
8. The more oxygen our cells burn, the _____ our heart and blood vessels need to work.
9. In a single drop of blood, more than 400,000 _____ blood cells are constantly seeking out germs and attacking them—this is also part of the immune system.
10. If white blood cells don't work, cells can _____ out of control—this is cancer.

Digestive System(Part 5, 0:00-5:28)

11. What molecules do we need from food?
12. Where does digestion begin?
13. _____ are found in saliva to help break down food.
14. New taste buds grow back in a _____ to _____ days
15. Food moves from the mouth to the _____.
16. What happens to food in the stomach?
17. Food moves from the stomach into the _____ intestine. The small intestine breaks down and absorbs nutrients into the _____ stream.
18. After the small intestine has absorbed nutrients, the remainder moves to the _____ intestine where water is removed and bacteria help break down the last of the food. The rest we don't need is flushed.

Muscular System(Part 5, 5:28-9:36 to Part 6, 0:00-0:32)

19. What tissue helps us move?
20. As many as _____ muscles are needed to speak one word.
21. Walking is a highly coordinated series of falls and requires _____ skeletal muscles.
22. Two _____, actin and myosin, link and relax to cause muscle movement.
23. The _____ sends impulses to the muscles telling the actin and myosin proteins to bind and release.

Skeletal System(Part 6, 4:14-7:58)

24. At the base, each muscle is attached to _____.
25. The human body has 206 bones, and can support up to _____ times our body weight.

Name: _____ Period: _____ Date: _____

26. Bones are what give us our _____.
27. Deep in the center of many bones, in tissue called the _____; white and red blood cells are created here.
28. Bone is made of the mineral, _____ phosphate, and the _____, collagen—the collagen protein helps bones maintain flexibility and strength, and calcium provides structure.

Reproductive System(Part 7, 5:02 to Part 8, 3:35)

29. Reproduction improves the adaptations of a _____.
30. Amoebas make exact _____ of themselves—an example of **asexual reproduction**.
31. **Sexual reproduction** mixes up _____ to increase survival. **Sensory organs** help animals find mates.
32. TRUE or FALSE—Men produce new sperm cells every day.
33. TRUE or FALSE—Women are born with all the egg cells they will ever have, though not all of them get released.
34. DNA is a complete genetic blueprint packaged into _____.
35. TRUE or FALSE—Each sex cell (gamete) has the full set of DNA.
36. A fertilized egg begins to divide. Division of cells is called **mitosis**. Each new cell is _____.
37. Cells begin to _____ as the baby develops.
38. All of the organ systems are present at _____ weeks.

Nervous System(Part 8, 3:35-10:30)

39. Every system in the body is complex, but the brain guides, guards, and gives orders to our body.
40. Nerve cells are called neurons.
41. Why is the brain so important? List 2 reasons.
42. The brain does not have _____ receptors so Brandon cannot feel pain during the surgery. He must remain awake so surgeons can remove the tumor without damaging his brain.
43. Each human brain is different from every other. For example, male brains have more _____, and female brains have more _____.

Follow-up Questions

1. What body systems did you see in the movie?
2. What is the smallest unit of organization in the body? (What is the body made of?)
3. Fill in the levels of organization below:
_____ → _____ → _____ → _____ → _____
4. THINK: Do body systems work individually? Can one system work without the other? Explain your answer and give evidence from the video.
5. All of these systems help our bodies do what 7 characteristics processes of living things?
6. All of our systems work together to maintain _____.