SOL 5.5 Living System	**Question/Answer Packet**
The student will investigate and understand that organisms are made of one or more cells and have distinguishing characteristics that play a vital role in the organism's ability to survive and thrive in its environment. Key concepts include:	
5.5a) basic cell structures and functions	
1. What are cells?	The smallest unit of life.
2. What are the 3 parts of the cell theory?	• All living things are made up of cells. • Cells carry out all life processes. • New cells come from existing cells.
3. How can cells be seen?	**With a microscope**- Cells are too small to be seen by the unaided eye
4. What are organelles	Small structures inside a cell that carry on the cell functions: Nucleus Vacuole Cytoplasm Cell membrane Chloroplasts Cell Wall
5. Nucleus	The control center of the cell. It holds the organism's DNA.
6. Cell membrane	The outside layer of the cell that controls what goes in and out of the cell. (The gate keeper)
7. Cytoplasm	The fluid or jelly-like substance inside a cell.
8. Vacuole	The part of a cell that stores food, water, and waste. (Think of it as the refrigerator and the trash can)
9. Chloroplast	A plant cell part where photosynthesis happens, using sunlight to convert air and water into sugar
10. Cell Wall	A thick, strong layer that runs outside the cell membrane of a plant cell and provides extra support.
11. Explain the difference between a plant cell and an animal cell.	• Plant cells tend to be rectangular • Animal cells tend to be spherical or at times irregular. • Plant cells have chloroplasts and a cell wall. Animal cells do not. • Plant cells have a large central vacuole. • Animal cells have small vacuoles.
12. Who discovered cells?	Robert Hooke
13. Cells were first discovered in what material?	Cork

5.5 b) classification of organisms using physical characteristics, body structures, and behavior of the organism;	
14. What is an organism?	Any living thing, such as a plant, animal, fungus, yeast, or bacterium
15. What are the life processes?	• Eating • Breathing • Getting rid of waste • Growing • reproducing
16. Organisms made of only one cell are called-	Unicellular
17. Organisms made of more than one cell are called-	Multicellular (All plants and animals are multicellular)
18. What two groups can animals be divided into?	Vertebrates (having a backbone) Invertebrates (not having a backbone)
19. What is a vertebrate?	An animal with a backbone: All fish, amphibians, reptiles, mammals, and birds are vertebrates (FARM B)
20. What is an invertebrate?	Animals without backbones: This includes insects, spiders, crabs, and worms Many invertebrates have a hard outer covering. 95% of Earth's animals are invertebrates
21. What is the big difference between plants and animals?	The BIG difference is that plants produce their own food. Animals must eat other things to get their energy.
22. Plants can be classified into which two basic categories?	Vascular Nonvascular
23. Which classification of plants has an organized system to transport food and water?	Vascular
24. Which classification of plants does not have an organized system to transport food and water?	Non vascular
25. Describe vascular plants, and give examples	• They use roots to absorb water, and xylem to move the water upwards. Phloem moves sugars to the plants cells. • MOST PLANTS ARE VASCULAR • Examples: Trees, shrubs flowering plants, & plants that produce fruit or vegetables
26. Describe nonvascular plants and give examples.	• They do not have true roots, stems, or leaves • They mostly use spores to reproduce. • Examples: Moss, liverworts, and hornworts

5.5c) traits of organisms that allow them to survive in their environment	
27. What do all organisms need to survive?	Food, water, & protection from harm
28. What are some ways that animals have evolved (adapted) to protect themselves from predators?	Camouflage Mimicry
29. What is camouflage?	A **structural adaptation** that lets an animal blend into an environment so that it is almost impossible to see
30. What is mimicry?	A **structural adaptation** that lets certain species look like other more dangerous ones.
31. What is a way that an animal can adapt to its environment during times when there is little food?	An animal can **hibernate** - (A deep winter sleep that allows an animal's body to slow down so much that it can survive without eating or drinking.) a **behavioral adaptation**
32. What adaptation will allow a plant to survive by conserving water and saving energy?	**Dormancy**- A period of inactivity