Directions:

In the sentence below, a code has been substituted for each letter of the alphabet. To find out what the sentences say, use the following key to decode them. In the key, the code letters are shown directly below the alphabet letter they stand for. Write the correct letter above each code letter, and then read the sentence to yourself. The first word has been done for you.

 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

 Z Y X W V U T S R Q P O N M L K J I H G F E D C B A

1. A L L \_\_\_\_\_\_\_\_\_\_\_\_­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 Z O O L I T Z M R H N H Z I V X V O O H

2. \_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_

 Z X V O O R H G S V Y Z H R X F M R G L U

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_

 H G I F X G F I V Z M W U F M X G R L M R M

\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Z M L I T Z M R H N

3. \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

 V E V I B X V O O X L N V H U I L N Z M L G S V I X V O O

4. \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 G S R H R H X Z O O V W G S V X V O O G S V L I B

Answer the following questions.

1. Who was the first person to see cells and name them?
2. In what material were cells first seen?
3. Where the cells that were first seen living or nonliving?
4. What did Schleiden and Schwann conclude about cells?
5. What is the name of the instrument that uses light and lenses to view cells?

*Complete this worksheet after you have finished reading Chapter 4, Section 1.*

Each of the boxes below represents a different method cells use to bring small particles into the cell or to take small particles out of the cell. Add the notes at the bottom of the page to the appropriate box. Be careful—some notes can be used more than once.

**Small Particle Transport**

|  |  |  |
| --- | --- | --- |
| Osmosis | Passive Transport | Active Transport |
|  |  |  |

**Notes**

* Particles move through protein doorways
* Particles move though cell membrane between phospholipid molecules
* Sugar or amino acids
* Requires ATP
* Particles move from an area of high concentration to an area of low concentration
* Does not require ATP
* Particles move from an area of low concentration to an area of high concentration
* Water