|  |  |
| --- | --- |
| Structure/Function | How it is related to Diffusion |
| Pseudopod | This structure depends on assembling proteins into a skeletal framework beneath the cell membrane to push out a pseudopod. Both the assembled proteins and the cellular fuel that allow this are present mainly through diffusion inside the cell. |
| Cilia | This structure depends on the presence of a cellular fuel to make the cilia bend. This fuel is produced inside the cell, and then diffuses through it. |
| Flagellum | This structure depends on the presence of a cellular fuel to make the flagellum spin. This fuel is produced inside the cell, and then diffuses through it. |
| Cell Wall | This structure does not allow anything through it except at its pores, and so prevents diffusion and osmosis. It also provides resistance to a cell breaking open when it swells in a hypotonic solution. |
| Cell Membrane | This structure allows osmosis, and lets some other types of particles diffuse in and out of a cell. It is basically the filter that separates the inside environment of the cell from the outside. |
| Cell Surface Transport Proteins | These can act to facilitate diffusion through the membrane, or to actively transport (the opposite of diffusion) materials through the membrane. |
| Active Transport | This process is the opposite of diffusion, moving diffused molecules into a more highly concentrated state. |
| Passive Transport | Duh. This IS Diffusion. |
| Cytoplasm | This is the liquid medium that molecules move freely through. If it didn’t allow that movement, diffusion could not occur. |
| Chromosome | This is where information in DNA is converted into mRNA molecules. These molecules move away from the chromosome through diffusion. |
| Ribosome | This is where mRNA information is turned into a protein. The amino acids that make up the protein are present because of diffusion, as are the mRNA molecules. |
| Thylakoid Membrane | At this membrane, particles are actively transported to one side of the membrane, where they are more concentrated. As they diffuse back through “gateways” in the membrane, they spin tiny wheels that manufacture cellular fuel. Without diffusion, cells could not make this fuel. |
| Photosynthesis | Photosynthesis uses light energy to actively move particles across the thylakoid membrane (against diffusion) to concentrate them, and then utilizes the resulting cellular fuel to build sugars from water and carbon dioxide. |

**Prokaryote Structures and Diffusion** Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ HR:\_\_\_\_\_\_\_\_\_\_\_\_\_\_