

Cell Model Ideas

Biology

Use the information on this sheet to help prepare you for creating your thematic cell models. These models should include all of the structures in the table below that are appropriate for the cell type you choose (you should pick either an animal cell or a plant cell – you will get extra points for choosing plant cells). This is an individual assignment. When you are done, e-mail your work to dan.bregar@corvallis.k12.or.us with the subject line “per x your name cell model ideas”.

		Thematic Model Idea #1: Shopping Mall	Thematic Model Idea #1:
Name of Structure	Function	Analogy for Idea #1	Analogy for Idea #2
<i>Cell membrane</i>	Keeps the insides of a cell separate from the outsides	The drywall of the mall – keeps the indoors separate from the outdoors	
<i>Cell wall (plants only)</i>	Provides structure to the cell	The outer brick wall of the mall – provides structure and support to the building	
<i>Nucleus</i>	The part of the cell where DNA is stored	The main computer systems of the mall where financial and other information are kept	
- <i>Nuclear envelope</i>	The membrane surrounding the nucleus	The walls surrounding the room where the main computer systems are kept	
- <i>Nucleolus</i>	A dark spot in the nucleus where ribosomes are made	The location of printers attached to the main computer system that print out financial information	
- <i>Chromosomes</i>	Strings of nucleic acid that store genetic information	The memory chips in the computers that store the financial information	
<i>Cytoplasm</i>	The “goo” inside the cell – the fluid and all the structures of a	Everything inside the mall – including the air, people, buildings,	

	cell	and merchandise	
<i>Mitochondria</i>	Process molecules to generate energy for the cell	Generators for the mall that run on gasoline (previously stored energy)	
<i>Chloroplasts (plants only)</i>	Plastids that contain chlorophyll – where most photosynthesis occurs	Solar panels (of one particular type that is very efficient)	
<i>Ribosomes</i>	Substances that interact with nucleic acids to produce proteins	The printers used to print out financial information	
<i>Endoplasmic Reticulum</i>	An extension of the nuclear envelope where ribosomes attach – the site of protein production	An extension of the walls surrounding the room where computers are kept – there are printers (ribosomes) installed on shelves along this wall	
<i>Golgi Apparatus</i>	A structure that “packages” molecules and substances for shipment around a cell	The shipping department of the mall	
<i>Lysosomes</i>	Waste processing structures – they destroy unneeded substances in a cell	Garbage disposal units in the mall	
<i>Vacuoles</i>	Pouches where other materials are stored / digested	Storage lockers, closets, and rooms in the mall	
<i>Plastids (plants only)</i>	Pigment-containing structures that play a role in energy production through photosynthesis	All different types of solar panels mounted on the roof of the mall	