

Goal: Be able to talk about
what goes on inside a
cell. What are the parts
and what do they do?

		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 cell	Everything inside the mall – including the air, people, buildings, 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	