

KEY WORDS AND PHRASES FOR PROKARYOTIC AND EUKARYOTIC CELLS CONCEPT MAP

1. Prokaryotic cells include the domain *Bacteria* and the domain *Archae*.
2. Eukaryotic cells belong to the domain *Eukarya* and include animals, plants, algae, protozoans, and fungi.
3. The larger a cell, the smaller is its surface-to-volume ratio; A small surface-to-volume ratio means nutrients cannot rapidly diffuse to all interior parts of the cell. That is why eukaryotic cells require a variety of specialized internal organelles to carry out metabolism, provide energy, and transport chemicals throughout the cell.
4. The smaller a cell, the greater is its surface-to-volume ratio; A large surface-to-volume ratio means that nutrients can easily and rapidly reach any part of the cells interior so internal compartmentalization is not needed.
5. The nuclear body is not bounded by a nuclear membrane, contains one circular chromosome, has no nucleoli, and is called a nucleoid.
6. The nuclear body is bounded by a nuclear membrane, contains one or more paired, linear chromosomes, has nucleoli, and is called a nucleus.
7. The ribosomes are composed of a 60S and a 40S subunit that come together during protein synthesis to form an 80S ribosome.
8. The ribosomes are composed of a 50S and a 30S subunit that come together during protein synthesis to form a 70S ribosome.
9. Internal membrane-bound organelles such as mitochondria, endoplasmic reticulum, Golgi apparatus, vacuoles, and lysosomes are absent.
10. Internal membrane-bound organelles such as mitochondria, endoplasmic reticulum, the Golgi apparatus, vacuoles, and lysosomes are present.
11. The electron transport system is located in the inner membrane of the mitochondria. It contributes to the production of ATP molecules via chemiosmosis.
12. The electron transport system is located in the cytoplasmic membrane. It contributes to the production of ATP molecules via chemiosmosis.
13. Many prokaryotes have flagella, each composed of a single, rotating fibril and usually not surrounded by a membrane. There are no cilia.
14. Eukaryotic cells may have flagella or cilia. Flagella and cilia consist of a distinct arrangement of sliding microtubules surrounded by a membrane. The microtubule arrangement is referred to as a 2X9+2 arrangement.