Scientific theory

Concepts to cover when developing your questions:

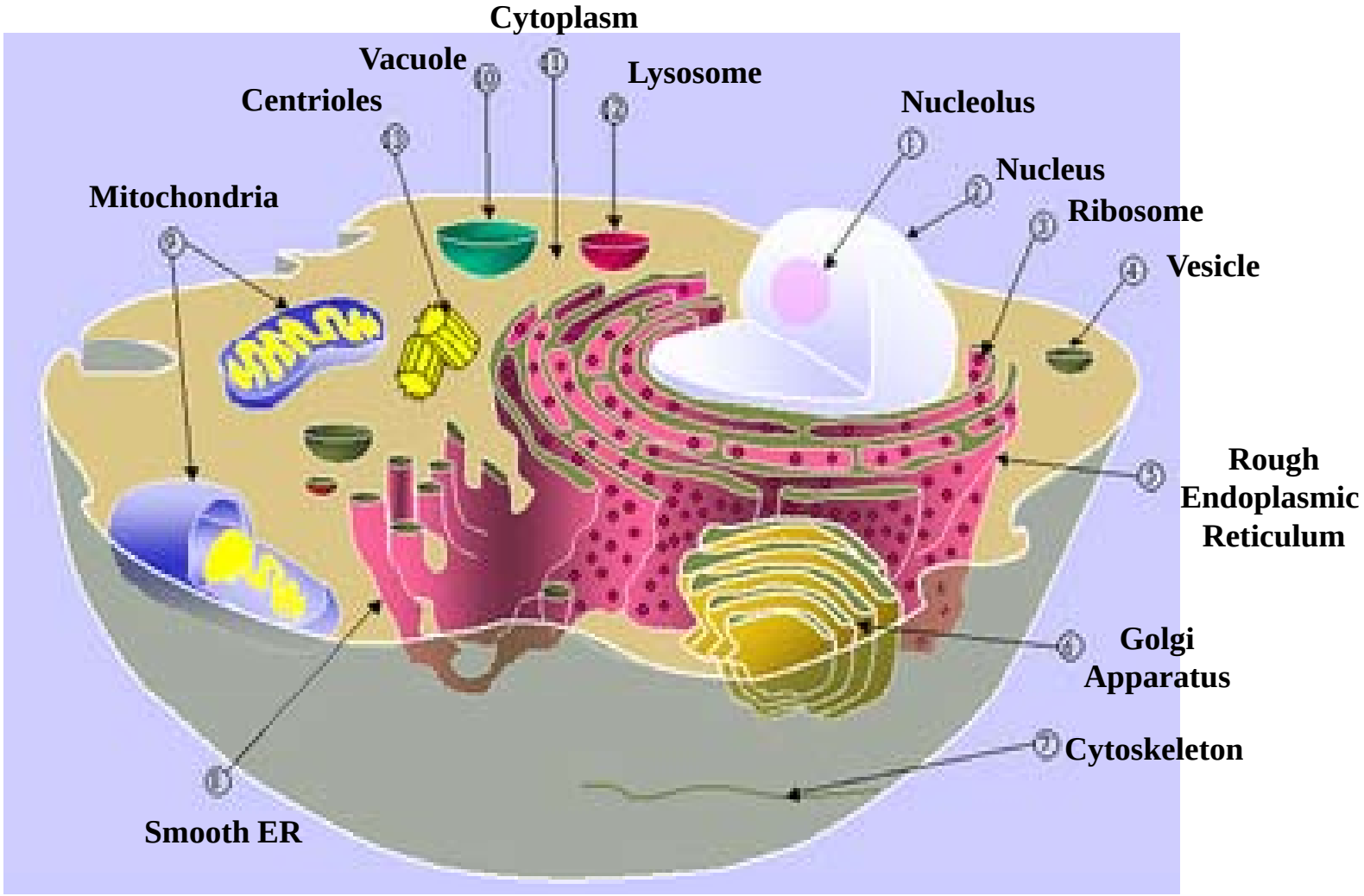
- Designing an experiment (good to use visuals/ pictures)
- Controls
- Independent vs. dependent variables
- Summary of procedure
- Data table / graph

Organic Compounds

Concepts to cover when developing your questions:

- 4 different groups of organic compounds
- Examples of compounds
- How would you encounter these compounds in your everyday life?/ Why are these compounds important to you and/or your classmates?
- The location of the compounds inside/ on the cell

Animal Cell:

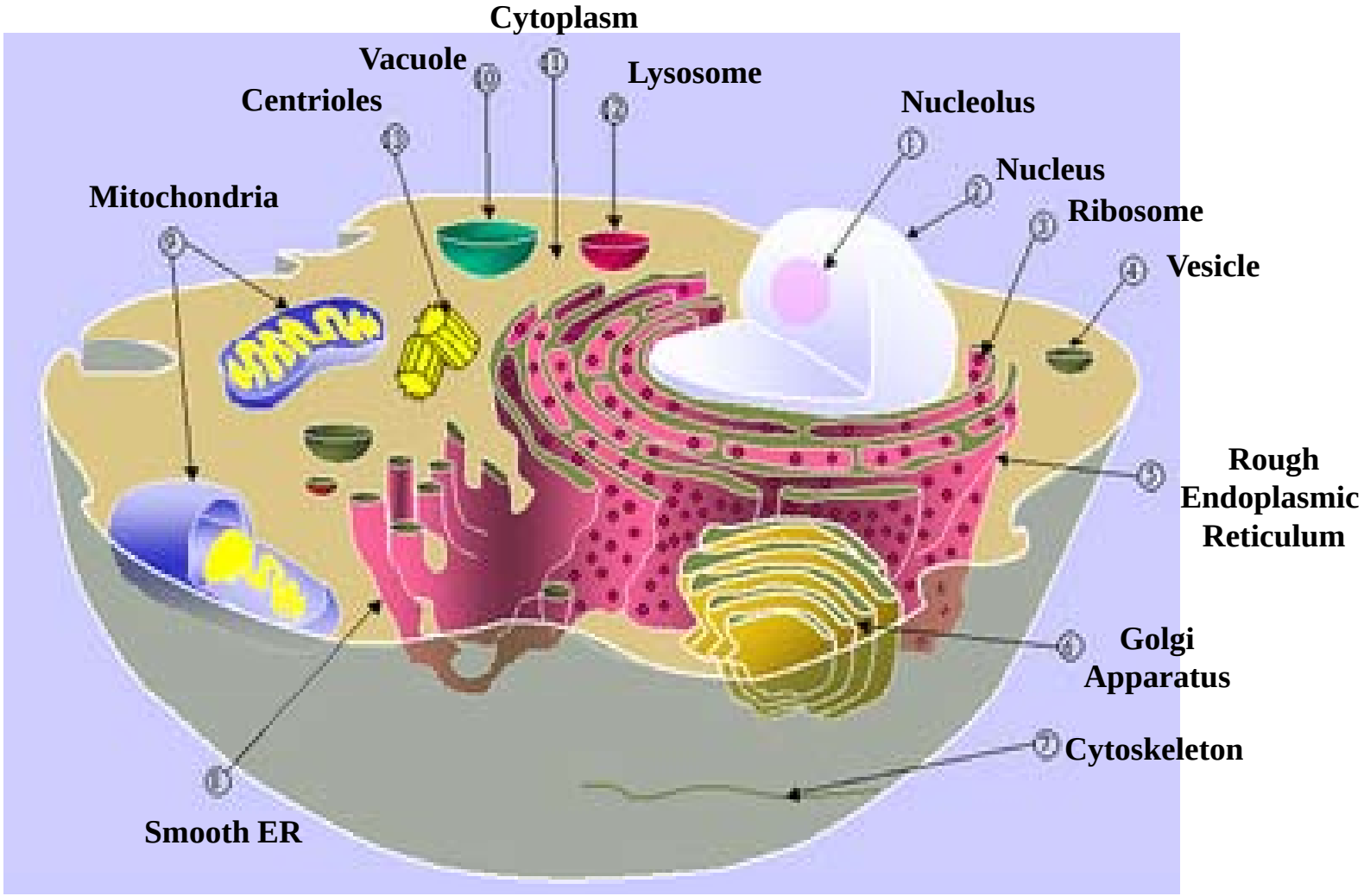

Cytoplasm
Vacuole
Lysosome
Centrioles
Nucleolus
Nucleus
Mitochondria
Ribosome
Vesicle
Rough Endoplasmic Reticulum
Golgi Apparatus
Cytoskeleton
Smooth ER

Cell Structure / Function

Concepts to cover when developing your questions:

- Animal vs. plant cell
- Photosynthesis and Respiration
- Eukaryotes vs Prokaryotes
- Important organelles of the mammalian cell and their function

Animal Cell: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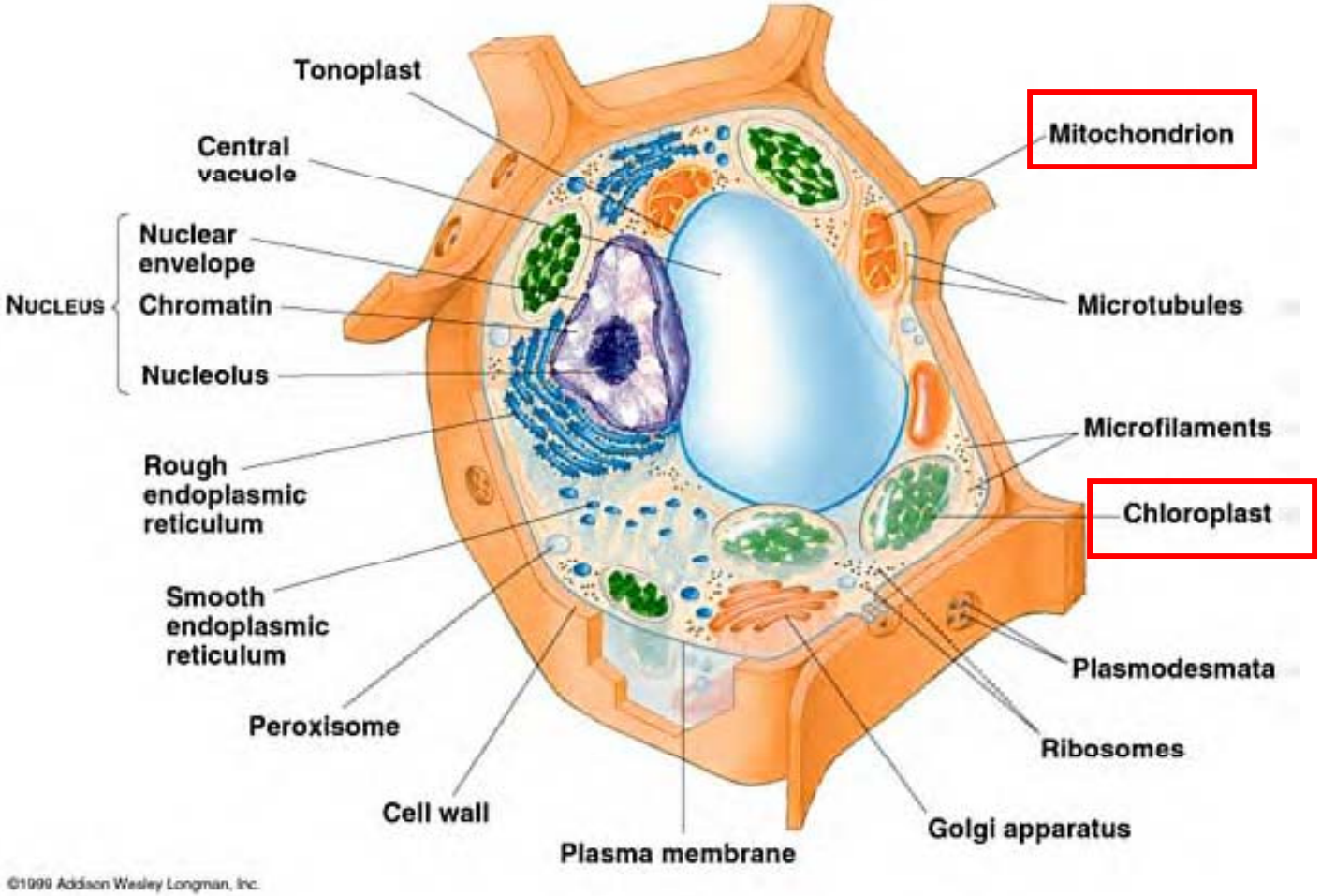
Plant Cell:

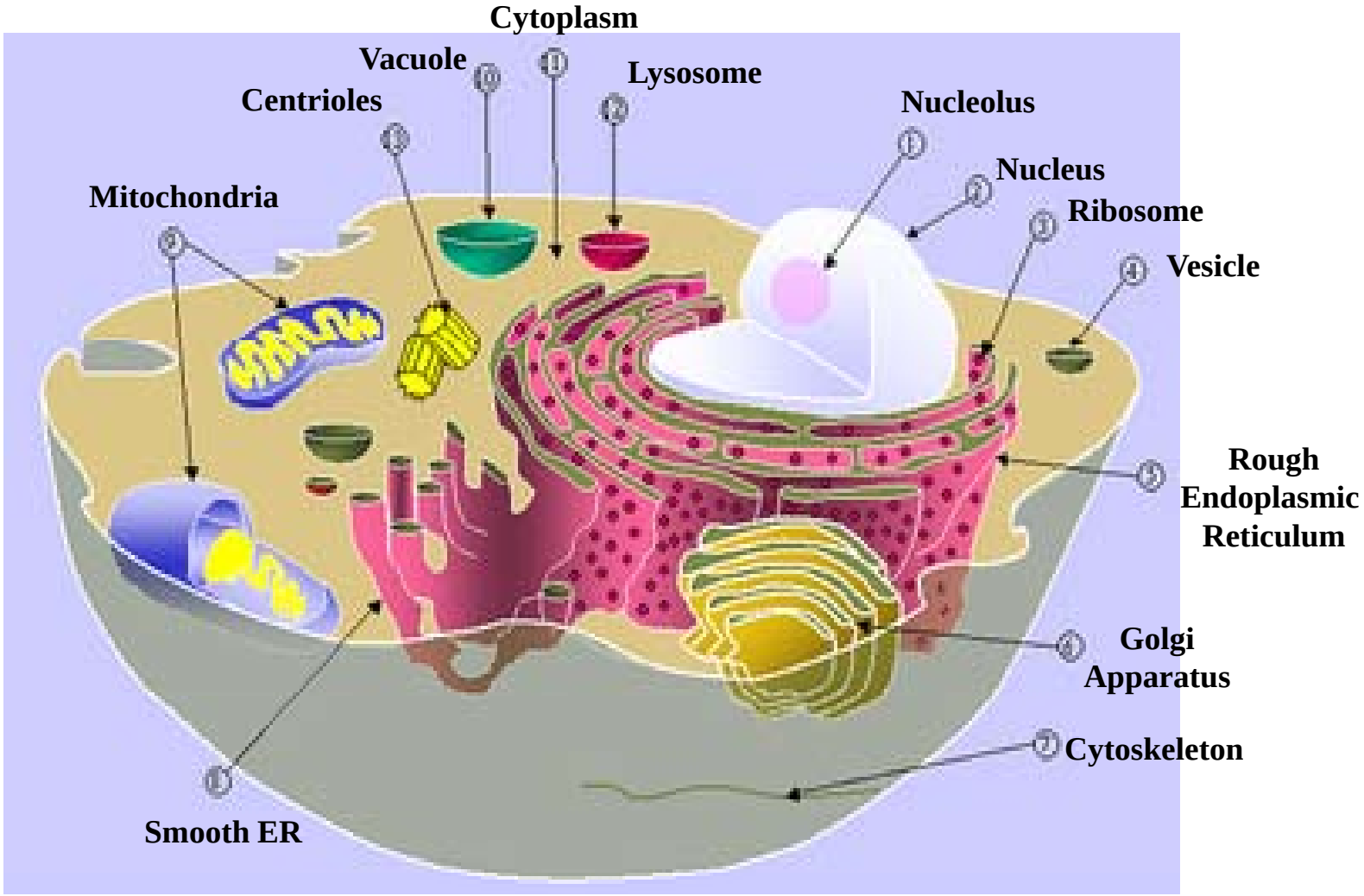

Tonoplast
Central vacuole
Nucleus
Nuclear envelope
Chromatin
Nucleolus
Rough endoplasmic reticulum
Smooth endoplasmic reticulum
Peroxisome
Cell wall
Plasma membrane
Golgi apparatus
Ribosomes
Plasmodesmata
Chloroplast
Microfilaments
Microtubules
Mitochondrion
©1999 Addison Wesley Longman, Inc.

Cell Structure / Function

Concepts to cover when developing your questions:

- Transport across the cell membrane
- Movement of water

Animal Cell: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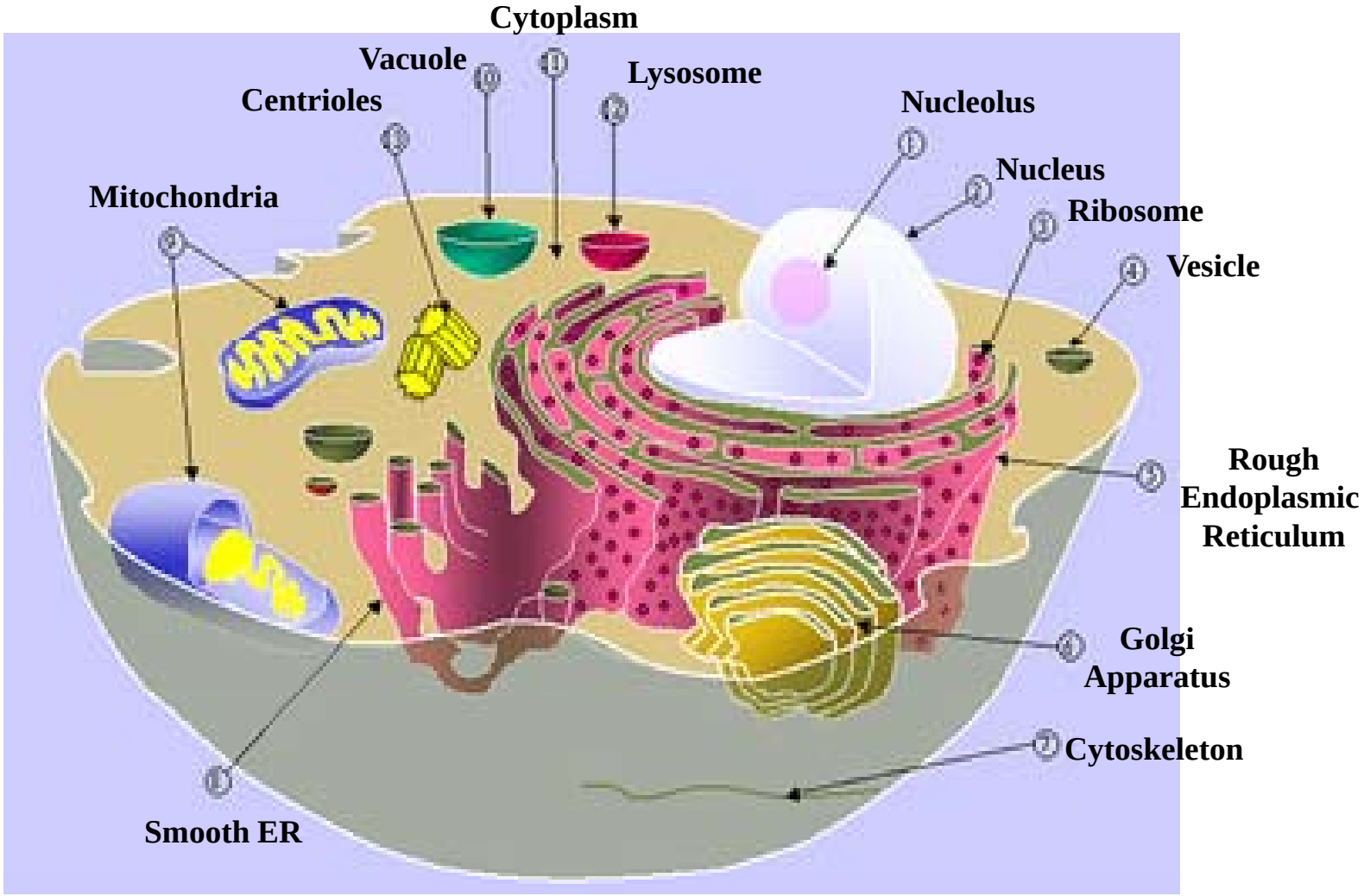
Mitosis and Meiosis

Concepts to cover when developing your questions:

- **Mitosis:**
  - What happens during the process?
  - The final outcome of this process
  - The purpose of the process?
  - Cancer
- **Meiosis:**
  - What happens during the process?
  - The final outcome of this process
  - The purpose of the process?

Animal Cell: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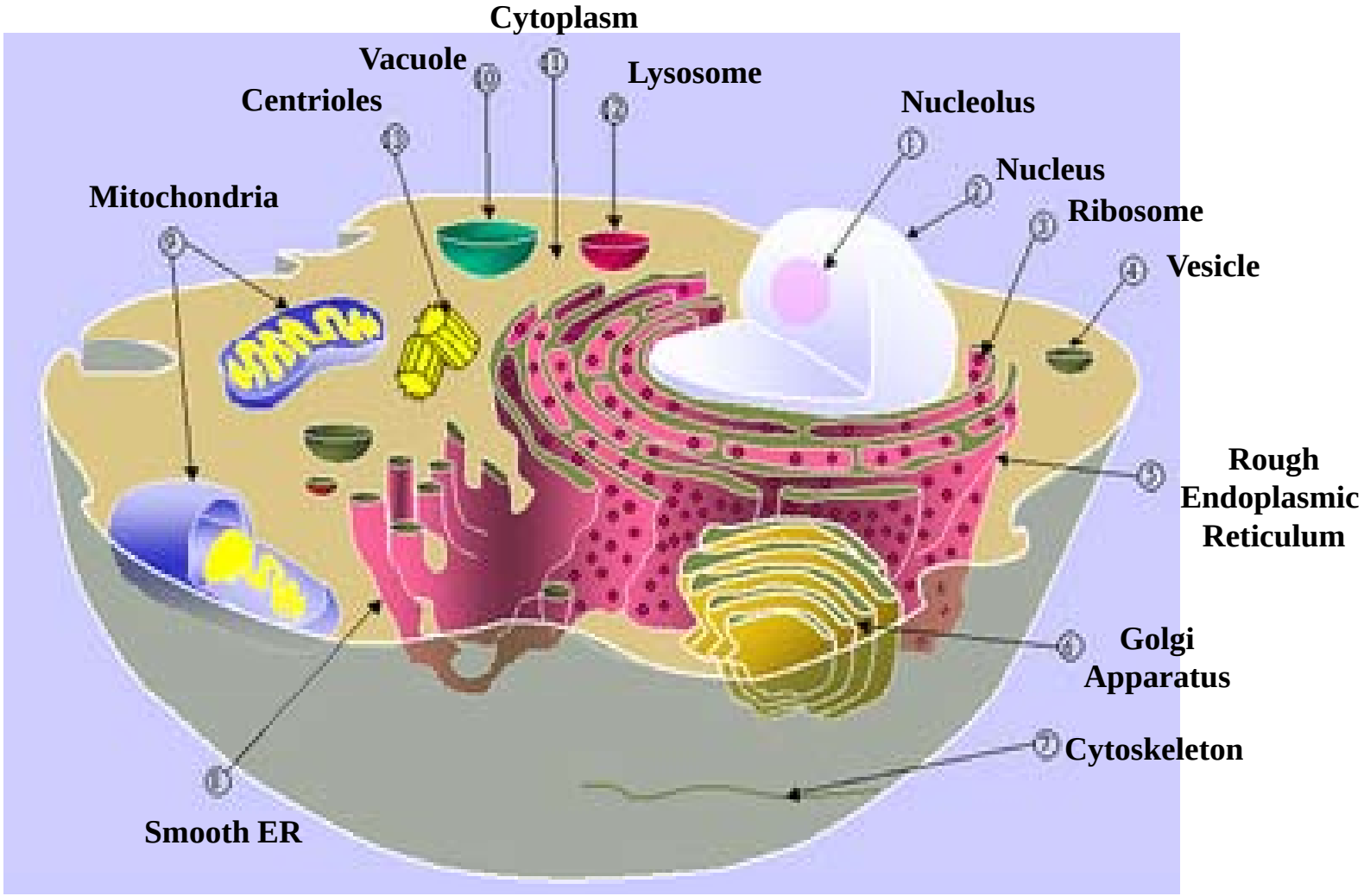
Transcription and translation

Concepts to cover when developing your questions:

- The "central dogma" DNA ---- RNA ---- Protein
  (transcription: DNA ---- RNA; translation: RNA ---- Protein)
- What happens during these two processes?
- Where do these two processes occur in the cell?
- The benefits of these two processes—Why must these processes occur?

Animal Cell: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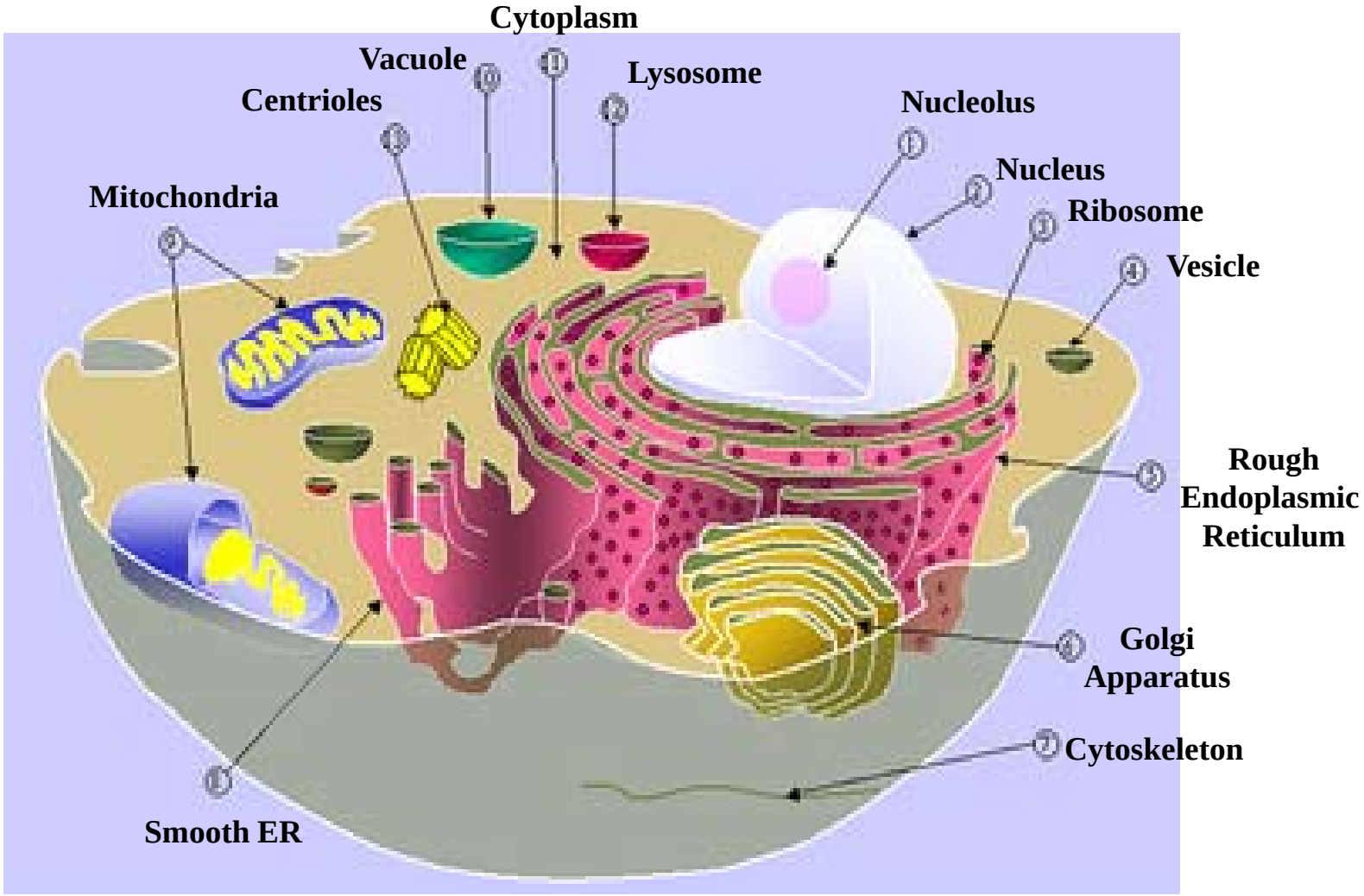
Genetics and Bioengineering

Concepts to cover when developing your questions:

- Monohybrid cross (vocabulary: hybrid, heterozygous, pure, homozygous, carrier)
- Genotype vs. phenotype
- Sex linked traits
- Incomplete dominance
- Co-dominance
  - Blood type: AO, BO, **AB**, OO, AA, BB

Animal Cell: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Evolution

Concepts to cover when developing your questions:

- Homologous structures
- Vestigial structures
- Common Ancestry
- Theory of Evolution
- Natural Selection Process
- Why evolution matters now (bacterial evolution)