

Unit 5: Cell Growth and Division

Chapters: chapter 11

Standards:

- HS-LS1-4: Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms
- HS-ETS1-1 Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants

Objectives:

1. Describe why cell size is limited
2. Compare sexual and asexual reproduction
3. Describe the benefits of sexual reproduction
4. Explain the role of chromosomes in cell division
5. Describe the main events of the cell cycle
6. Describe what happens during the phases of mitosis
7. Describe how both animal and plant daughter cells split apart after mitosis
8. Describe how the cell cycle is regulated
9. Describe how cancer cells differ from other cells
10. Describe how cells become specialized for different functions
11. Describe stem cells
12. Describe possible issues associated with stem cell research

Vocabulary:

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|------------------------|-----------------|-------------------|
| • Cell division | • Mitosis | • Tumor |
| • Asexual reproduction | • Cytokinesis | • Embryo |
| • Sexual reproduction | • Prophase | • Blastocyst |
| • Chromosome | • Metaphase | • Differentiation |
| • Chromatin | • Anaphase | • Stem cell |
| • Chromatid | • Telophase | • Totipotent |
| • Centromere | • Growth factor | • Pluripotent |
| • Centriole | • Cyclin | • Multipotent |
| • Cell Cycle | • Apoptosis | |
| • Interphase | • Cancer | |