

Unit 6: Cell Growth, Division and Reproduction

Content Area: **Template**
Course(s):
Time Period:
Length:
Status: **Published**

State Mandated Topics Addressed in this Unit

State Mandated Topics Addressed in this Unit	
N/A	N/A

Unit 6: Cell Growth, Division and Reproduction

Learning Objectives

- How do cells differentiate into different cell types?
- How do organisms grow and repair tissue?
- What are organs? How do they develop? What are organ systems and how do they work together to form a multicellular organism?

Essential Skills

- Apply data representations and new models to revise predictions and explanations
- Describe how a disease is the result of a malfunctioning system, organ, and cell, and relate this to possible treatment interventions.
- Describe modern applications of the regulation of cell differentiation and analyze the benefits and risks.
- Distinguish between the processes of cellular growth and development.
- Reflect on and revise observations as new evidence emerges

Standards

- | | |
|---------------|---|
| 9-12.HS-LS3-2 | Make and defend a claim based on evidence that inheritable genetic variations may result from (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors. |
| 9-12.HS-LS1-4 | Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms. |

Instructional Tasks/Activities

- Chapter Test
- Exit cards
- Mitosis Microscope Slides Lab: students observe pre-prepared slides of onion root tip. Students indicate which phase of mitosis each slide shows. Students describe what is occurring during each phase
- Review game
- Surface Area vs. Volume Cubes: Students may create their own cubes of indicated sizes or they may use prepared cubes to measure their surface area and volume. Students combine cubes then compare the surface area volume ratio as the cube grows larger. Students compare this process to a cell as it grows larger
- Vocabulary Quizzes

Assessment Procedure

- Analyze Cyclins Activity: students analyze and interpret graph of cyclins present in each phase of mitosis and answer analysis questions
- Analyze Differentiation Activity: students complete data table and interpret the data in order to answer analysis questions
- Classroom Total Participation Technique
- Classwork
- DBQ
- Essay
- Exit Ticket/Entrance Ticket/Do Now
- Foldables – organization of material (surface area vs. volume, movement of materials across cell membrane, phases of mitosis)
- Group discussion
- Journal / Student Reflection
- Kahoot
- Mitosis Plates: Students draw and label each organelle present in the proper location in each phase on a different plate
- Mitosis Wheel: students draw and label each organelle present in the proper location during each phase on a different plate
- Mitosis Worksheet: Label phase and indicate organelles involved in process of mitosis
- Other named in lesson
- Peer Review
- Performance
- PowerPoint presentation of material
- Problem Correction
- Project
- Quiz
- Rubric
- Teacher Collected Data

- Test
- Think, pair, share (read assigned section of text individually, discuss with a partner, present material in pairs to class – use PowerPoint as a reference)
- Worksheet

Recommended Technology Activities

- Appropriate Content Specific Online Resource
- Chromebook
- Copy/Paste Content Specific Link Here
- Copy/Paste Content Specific Link Here
- Copy/Paste Content Specific Link Here
- Gimkit
- GoGuardian
- Google Classroom
- Google Docs
- Google Forms
- Google Slides
- Kahoot
- MagicSchool AI
- Other- Specified in Lesson
- Quiziz
- Screencastify

Accommodations & Modifications & Differentiation

Accommodations and Modifications should be used to meet individual needs. Their IEP and 504 plans should be used in addition to the following suggestions.

Gifted and Talented

- Compare & Contrast
- Conferencing
- Debates
- Jigsaw
- Peer Partner Learning
- Problem Solving
- Structured Controversy

- Think, Pair, Share
- Tutorial Groups

Instruction/Materials

- alter format of materials (type/highlight, etc.)
- color code materials
- eliminate answers
- extended time
- extended time
- large print
- modified quiz
- modified test
- Modify Assignments as Needed
- Modify/Repeat/Model directions
- necessary assignments only
- Other (specify in plans)
- other- named in lesson
- provide assistance and cues for transitions
- provide daily assignment list
- read class materials orally
- reduce work load
- shorten assignments
- study guide/outline
- utilize multi-sensory modes to reinforce instruction

Environment

- alter physical room environment
- assign peer tutors/work buddies/note takers
- assign preferential seating
- individualized instruction/small group
- modify student schedule (Describe)
- other- please specify in plans
- provide desktop list/formula

Honors Modifications

N/A

Resources

- Resource 1
- Resource 2
- Resource 3
- Resource 4
- Resource 5