

Teacher: J. Haut  
Class: AP Biology  
Period: 3  
Assignments: Week 3

The work in this packet is due 5/15/2020. If working online, you may turn in work digitally before the deadline. I encourage you to turn work in as you complete it. I have broken the work down into daily tasks to help you manage your time.

My office hours are 10AM-12PM, M-F. You can email me at [jhaut@tusd.net](mailto:jhaut@tusd.net), post a question in Teams, or call me at (209) 625-9540 with questions. Please continue to check your email and Teams Classroom regularly. College Board will be reaching out to you via email!!

### Wk3/Day 1: Unit 3 Cellular Energetics Review: Enzymes

Unit 3 is all about energy. This unit relies heavily on the knowledge gained in Unit 2, with a focus on organelles and cellular transport. Cellular respiration and photosynthesis are the two biggest topics in this unit.

- Review Enzyme Structure, Function, and Environment impacts on Function**—you choose method to review from below
  - Review pp. 152-160 in your textbook-take notes as needed
  - Khan Academy Review <https://www.khanacademy.org/science/ap-biology/cellular-energetics> (first three boxes/sections)
    - Work through videos, resources, and practice questions
    - Take notes as needed
  - College Board AP Review Videos:** AP Biology: Enzymes  
<https://www.youtube.com/watch?v=Tth4hDzzCew&list=PLoGgviqq4847VchRdUdvbDPzsp9ResrjD&index=16>
    - Watch and take notes as needed.
    - Pay close attention to the Guided Practice for FRQs at the end of each video.
- By the end of this review lesson you should be able to answer the following questions.
  - Describe the properties of enzymes.
  - Explain how enzymes affect the rate of biological reactions.
  - Explain how changes to the structure of an enzyme may affect its function.
  - Explain how the cellular environment affects enzyme activity.
- Free Response Question (due 5/15/20):** Go to Assignments in the AP Classroom and complete the Assignment called **Wk3/Day 1 FRQ** and submit in AP Classroom.
- Optional: Take the Personal Progress Checks for Unit 3 in AP Classroom.

### Wk3/Day 2: Unit 3 Cellular Energetics Review: Photosynthesis

- Review Photosynthesis**—you choose method to review from below
  - Review Ch. 10 in your textbook-take notes as needed
  - Khan Academy Review <https://www.khanacademy.org/science/ap-biology/cellular-energetics/photosynthesis/v/photosynthesis>
    - Work through videos, resources, and practice questions
    - Take notes as needed
  - College Board AP Review Video:** AP Biology: Photosynthesis  
<https://www.youtube.com/watch?v=IUT7ksSYpWQ&list=PLoGgviqq4847VchRdUdvbDPzsp9ResrjD&index=17>
    - Watch and take notes as needed
    - Pay close attention to the Guided Practice for FRQs at the end of each video

The graphic shows 'UNIT 3 Cellular Energetics' with a blue header. Below it, a bar indicates '~14-17 Class Periods' and '12-16% AP Exam Weighting'. A table lists seven topics with their respective AP Exam weights:

Topic	AP Exam Weighting
3.1 Enzyme Structure	1
3.2 Enzyme Catalysis	3
3.3 Environmental Impacts on Enzyme Function	6
3.4 Cellular Energy	6
3.5 Photosynthesis	6
3.6 Cellular Respiration	4
3.7 Fitness	6

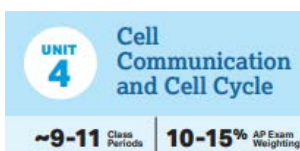
- By the end of this review lesson you should be able to answer the following questions.
  - Describe the photosynthetic processes that allow organisms to capture and store energy.
  - Explain how cells capture energy from light and transfer it to biological molecules for storage and use.
- Free Response Question (due 5/15/20):** Go to Assignments in the AP Classroom and complete the Assignment called **Wk3/Day 2 FRQ** and submit in AP Classroom.
- Optional: Take the Personal Progress Checks for Unit 3 in AP Classroom.

### **Wk3/Day 3: Unit 3 Cellular Energetics Review:** Cellular Respiration

- Review Cellular Respiration**—you choose method to review from below
  - Review Ch. 9 in your textbook-take notes as needed
  - Khan Academy Review <https://www.khanacademy.org/science/ap-biology/cellular-energetics/cellular-respiration-ap/v/introduction-to-cellular-respiration>
    - Work through videos, resources, and practice questions
    - Take notes as needed
  - College Board AP Review Video:** AP Biology: Cellular Respiration <https://www.youtube.com/watch?v=ggRAAaNMqj4&list=PLoGgviqq4847VchRdUdvbDPzsp9ResrjD&index=18>
    - Watch and take notes as needed
    - Pay close attention to the Guided Practice for FRQs at the end of each video
- By the end of this review lesson you should be able to answer the following questions.
  - Describe the processes that allow organisms to use energy stored in biological macromolecules.
  - Explain how cells obtain energy from biological macromolecules in order to power cellular functions.
- Free Response Question (due 5/15/20):** Go to Assignments in the AP Classroom and complete the Assignment called **Wk3/Day 3 FRQ** and submit in AP Classroom.
- Optional: Take the Personal Progress Checks for Unit 3 in AP Classroom.

### **Wk3/Day 4: Unit 4 Cell Communication & Cell Cycle:** Cell Communication

Unit 4 discusses the multiple methods in which cells communicate with each other, with a focus on signal transduction pathways. The topic of mitosis and the regulation of the cell cycle are also major topics. Feedback mechanisms with relation to the many different body systems are also discussed in this unit.



IST	4.1	Cell Communication
IST	4.2	Introduction to Signal Transduction
IST	4.3	Signal Transduction
IST	4.4	Changes in Signal Transduction Pathways
ENE	4.5	Feedback
IST	4.6	Cell Cycle
IST	4.7	Regulation of Cell Cycle

- Review Cell Communication**—you choose method to review from below
  - Review Ch. 11 in your textbook-take notes as needed
  - Khan Academy Review <https://www.khanacademy.org/science/ap-biology/cell-communication-and-cell-cycle> (first 3 boxes/sections)
    - Work through videos, resources, and practice questions
    - Take notes as needed
  - College Board AP Review 2 Videos:** AP Biology: Cell communication <https://www.youtube.com/watch?v=fsRy8cF0bLY&list=PLoGgviqq4847VchRdUdvbDPzsp9ResrjD&index=19>
    - Watch and take notes as needed
    - Pay close attention to the Guided Practice for FRQs at the end of each video
- By the end of this review lesson you should be able to answer the following questions.
  - Explain how cells communicate with one another over short and long distances.
  - Describe the components of a signal transduction pathway and their role in producing a cellular response.
  - Describe the role of the environment in eliciting a cellular response.
  - Describe the different types of cellular responses elicited by a signal transduction pathway.
  - Explain how a change in the structure of any signaling molecule affects the activity of the signaling pathway.
  - Describe positive and/or negative feedback mechanisms and explain how each maintains or affects homeostasis.

3. **Free Response Question (due 5/15/20):** Go to Assignments in the AP Classroom and complete the Assignment called **Wk3/Day 4 FRQ** and submit in AP Classroom.
4. Optional: Take the Personal Progress Checks for Unit 4 in AP Classroom.

**Wk3/Day 5: Unit 4 Cell Communication & Cell Cycle:** Mitosis & Cell Cycle

1. **Review Mitosis & the Cell Cycle**—you choose method to review from below
  - Review Ch. 12 in your textbook-take notes as needed
  - Khan Academy Review (2 sections) <https://www.khanacademy.org/science/ap-biology/cell-communication-and-cell-cycle/cell-cycle/v/interphase> and <https://www.khanacademy.org/science/ap-biology/cell-communication-and-cell-cycle/regulation-of-cell-cycle/v/cell-cycle-control>
    - Work through videos, resources, and practice questions
    - Take notes as needed
  - **College Board AP Review Video:** AP Biology: Cell Cycle; Mitosis Investigation 7 <https://www.youtube.com/watch?v=JLqEzrqH2x0&list=PLoGgviqq4847VchRdUdvbDPzsp9ResrjD&index=20>
    - Watch and take notes as needed
    - Pay close attention to the Guided Practice for FRQs at the end of each video
5. By the end of this review lesson you should be able to answer the following questions.
  - Describe the events that occur in the cell cycle.
  - Explain how mitosis results in the transmission of chromosomes from one generation to the next.
  - Describe the role of checkpoints in regulating the cell cycle.
  - Describe the effects of disruptions to the cell cycle on the cell or organism.
6. **Free Response Question (due 5/15/20):** Go to Assignments in the AP Classroom and complete the Assignment called **Wk3/Day 5 FRQ** and submit in AP Classroom.
7. Optional: Take the Personal Progress Checks for Unit 4 in AP Classroom.