



Science eLearning Guide – Week 5

Biology: Animal Systems Part 1

- Students will describe the interactions that occur among systems that perform the functions of transport, reproduction, and response in animals.
- Students will analyze the levels of organization in biological systems and relate the levels to each other and to the whole system.

Chemistry: Calorimetry and Law of Conservation of Energy

- Students will describe energy and its forms, including thermal energies.
- Students will describe the law of conservation of energy and the processes of heat transfer in terms of calorimetry.

Physics: Wave Motion Part 3

- Students will investigate and analyze the characteristics of waves, including velocity, frequency, amplitude, and wavelength.
- Students will describe the characteristics and behaviors of longitudinal waves, including light waves.

IPC: Solutions Part 2

- Students will investigate the properties of water solutions and factors affecting solid solubility, including the nature of solute, temperature, and concentration.

Biology - WEEK 5

Objectives

- Students will describe the interactions that occur among systems that perform the functions of transport, reproduction, and response in animals.
- Students will analyze the levels of organization in biological systems and relate the levels to each other and to the whole system.

Note: Beginning the week of April 14th and in alignment with our Adjusted Grading Guidelines, teachers in grades 6-12 may assign student work from the Digital Backpack eLearning guide, or from the teacher's itsLearning course, for a grade.

For Parents

- Please make sure your student has access to the internet and a technology device.
- If able, please print: this at-home [homeostasis experiment](#); this [concept reinforcement](#); and this [3 scenarios](#) worksheet.

For Students

- Explore human systems interactions through this [activity: tinyurl.com/sxgm8dZ](#)
Answer these questions: How did you keep the athlete running? How did you know which response was needed?
- Review this animated [tutorial](#) of the human body systems: [tinyurl.com/vfwyysz](#)
- Watch this [video](#) on human system interactions: [tinyurl.com/gtdkLxw](#)
- Try this at-home [homeostasis *experiment](#): [tinyurl.com/u7cgdLr](#)
*Note: you can substitute jumping jacks for jump rope
- Watch this [video](#) on feedback systems: [tinyurl.com/y5cts52k](#)
- Try this [concept reinforcement](#): [tinyurl.com/rwz4snq](#)
- Pick [3 scenarios](#) and answer the page that follows: [tinyurl.com/rencs6g](#)

AP Resources:

- Continue with the following:
 - Take the diagnostic test for AP Biology and proceed through drills and practice based on your results. [Log in directions](#)
 - Find the corresponding [Bozeman Science video tutorials](#) for the areas you need support.
- Continue, as applicable, with the review at:
<https://apstudents.collegeboard.org/coronavirus-updates>

Resources

- Read more about levels of organization [here: tinyurl.com/sfkz463](#)
- Read more about system interactions and homeostasis [here: tinyurl.com/yx7435rf](#)
- Watch this [tutorial](#) on homeostasis and feedback: [tinyurl.com/d9je7wh](#)

Chemistry - WEEK 5

Objectives

- Students will describe energy and its forms, including thermal energies.
- Students will describe the law of conservation of energy and the processes of heat transfer in terms of calorimetry.

Note: Beginning the week of April 14th and in alignment with our Adjusted Grading Guidelines, teachers in grades 6-12 may assign student work from the Digital Backpack eLearning guide, or from the teacher's itsLearning course, for a grade.

For Parents

- Please make sure your student has access to the internet and a technology device.
- If able, please print: this [thinking experiment](#) and these [calorimetry problems](#).

For Students

- Watch this clip on [How Does a Thermos Work?](#): tinyurl.com/yd62ltgc
- Try this [thinking experiment](#) (no materials required!) on heat, temperature, & calorimetry: <http://tinyurl.com/ut4nnls>
- Watch this clip on a [melting spoon](#): tinyurl.com/pgnk73s
- Watch this clip on [What is a Calorimeter?](#): tinyurl.com/v32tbyh
- Visit this [website](#): tinyurl.com/y77kqcfg
Directions: Click on the **Experiment** tab. Then click **Run Demonstration**. Follow the directions for **Liquids** and **Solids**. If you want to continue with **Compounds**, that is fine. Be sure to select both the **Graph** and **Microscopic** view.
- Watch this [video](#) on solving calorimetry problems: tinyurl.com/w7qzbfh
- Try solving these [calorimetry problems](#): tinyurl.com/vdwc bha

AP Resources:

- Continue with the following:
 - Take the diagnostic test for AP Chemistry and proceed through drills and practice based on your results. [Log in directions](#)
 - Find the corresponding [Bozeman Science video tutorials](#) for the areas you need support.
- Continue, as applicable, with the review at:
<https://apstudents.collegeboard.org/coronavirus-updates>

Resources

- Read these pages on [Thermochemistry](#): tinyurl.com/rw3bryp
- Watch this [crash course on calorimetry](#): tinyurl.com/y3mms3jx

Physics - WEEK 5

Objectives

- Students will investigate and analyze the characteristics of waves, including velocity, frequency, amplitude, and wavelength.
- Students will describe the characteristics and behaviors of longitudinal waves, including light waves

Note: Beginning the week of April 14th and in alignment with our Adjusted Grading Guidelines, teachers in grades 6-12 may assign student work from the Digital Backpack eLearning guide, or from the teacher's itsLearning course, for a grade.

For Parents

- Please ensure your student has internet access and a technology device.
- If able, please print: this light wave intro [lab guide](#); this Snell's Law [lab guide](#); and these [light problems](#).

For Students

- Watch this [video](#) on light: tinyurl.com/obpak5a
- Explore light waves using this [light simulation](#): tinyurl.com/y4ruj9sg; follow the directions on this [lab guide](#): tinyurl.com/rp9d5b4
- Explore Snell's Law through this [simulation](#): tinyurl.com/h4veowr
Use this [guide](#) to help you navigate the sim and answer the questions: tinyurl.com/tvooxyh
- Watch this [video](#) on Snell's Law and refraction: tinyurl.com/y95qy3vs
- Try solving some [light problems](#) (speed of light, conceptual questions, & Snell's Law): tinyurl.com/wcp4yh3

AP Resources:

- Continue with the following:
 - Take the diagnostic test for AP Physics and proceed through drills and practice based on your results. [Log in directions](#)
 - Find the corresponding [Bozeman Science video tutorials](#) for the areas you need support.
- Continue, as applicable, with the review at: <https://apstudents.collegeboard.org/coronavirus-updates>

Resources

- [Snell's Law](#) tutorial: tinyurl.com/tzxbke2
- [Light waves & EM spectrum](#) tutorial (Crash Course Physics): tinyurl.com/mur2k2o
- For fun: How do [glow in the dark toys](#) work: <http://tinyurl.com/vqy9nLf>

IPC - WEEK 5

Objectives

- Investigate the properties of water solutions and factors affecting solid solubility, including the nature of solute, temperature, and concentration.

Note: Beginning the week of April 14th and in alignment with our Adjusted Grading Guidelines, teachers in grades 6-12 may assign student work from the Digital Backpack eLearning guide, or from the teacher's itsLearning course, for a grade.

For Parents

- Please be sure your student has internet access and a technology device.
- Please print, if able: this [note sheet](#), [interpreting some solubility curves practice](#); [create a solubility curve](#).

For Students

- Watch this [video](#): (tinyurl.com/stj4gdh). Respond on paper to the following question: How does your current understanding of solutions help you understand the science behind this phenomenon?
- Review this [presentation](#) (tinyurl.com/w4y2mzf) and take notes on this [note sheet](#): tinyurl.com/wwbmxdg
- Watch this [video](#) on factors affecting solubility: tinyurl.com/nrvkbeo
- Check your understanding with this [online graphic organizer](#): tinyurl.com/vpczsq
- Watch this [video](#) on reading solubility curves: tinyurl.com/y73felhm
- Try interpreting some solubility curves [here](#): tinyurl.com/tmwypd4
- Create a solubility curve [here](#): tinyurl.com/v9w8abp

Resources

- [Tutorial for reading solubility curves](#): tinyurl.com/yactz2hf