

**Pro-Vision Academy Charter School**  
**High School Science Distance Learning Plan**

# Biology Chemistry Distance Learning Plan

## Week of March 30<sup>th</sup> - April 3, 2020

**Biology Activities**  
**(Suggested: 45 minutes of off-line activities)**  
**Please contact L. Thomas with any questions at [lthomas@pvacademy.org](mailto:lthomas@pvacademy.org)**

**TEKS: B4.C**

### **Monday**

Have anyone of you ever missed an important event because you had a viral infection?

- List as many viral diseases that you can think of.
- What makes a viral infection different than a bacterial infection?

**Copy vocabulary words in a notebook or a sheet of paper (some are a repeat from 1st semester).**

- Cell – a system of molecules that form structures that perform all of the functions of life
- Eukaryote – a living organism whose cell or cells contain nuclei and membrane-bound organelles
- Prokaryote – a single-celled living organism that lacks a nucleus and membrane-bound organelles
- Virus – a nonliving, infective agent composed of nucleic acids surrounded by a protein coat.
- Bacteriophage
- Capsid
- Cell membrane
- Cell wall
- Cytoplasm
- DNA virus Human Immunodeficiency Virus
- Influenza
- Nucleus
- Organelle
- Plastid
- Ribosomes
- RNA virus
- Surface membrane proteins

You will need your composition notebook for the notes on the Powerpoint (see attachment in resources or Google Classroom).

Make sure you date all your assignments. You are to copy 15 sides per day (5)

# Pro-Vision Academy Charter School

## High School Science Distance Learning Plan

### Tuesday

Create a dichotomous key to identify the following cells and virions: E. coli, coronavirus, bacteriophage, sperm cell, Streptococcus, human skin cell, plant stem cell, and plant epidermal cell.

### Wednesday

How does a virus make more copies of itself? Why can a virus remain in a particular host cell only for a limited time?

- Viral Reproduction (Lytic cycles)

### Thursday

What is the role of viruses in causing diseases like HIV and influenza?

#### HIV Model

- Students will create a model of the HIV virus and will be able to label the parts of the virus as well as answer key questions about how the virus is transmitted.

#### Review Viral Reproduction

### Friday

- Use PPT to discuss viral diseases
  - Common cold
  - Influenza
  - Herpes, Hepatitis, HPV, and HIV
  -
- Students will model the process of spreading viruses using a real-world example.

**Pro-Vision Academy Charter School**  
**High School Science Distance Learning Plan**

**Chemistry**

**(Suggested: 45 minutes of off-line activities)**

**Please contact L. Thomas with any questions at [lthomas@pvacademy.org](mailto:lthomas@pvacademy.org)**

**TEK: C.10 H**

**Monday**

What do you remember about acids and bases from the previous semester?

Fold a sheet of paper into 6 equal parts. Have one side be information over acids (properties, strong, weak) and the other side be information over bases (properties, strong, weak).

Use the Power point for notes to be written.

Based off the properties, you will identify foods you have eaten as either an acid or base.

Identify chemicals as either a strong or weak acid/base

You may use the following videos as a resource to assist you.

<https://www.khanacademy.org/science/chemistry/acids-and-bases-topic>

PowerPoint listed below can be found under the Resources tab on the school website or in Google Classroom.

[https://www.stjoes.org/ourpages/auto/2013/9/9/47972430/Ch19%20Lessons19\\_2.ppt](https://www.stjoes.org/ourpages/auto/2013/9/9/47972430/Ch19%20Lessons19_2.ppt)

**Tuesday**

How to calculate the pH of a solution with a known concentration

Because pH is determined by the hydrogen ion concentration, explain how to use the hydroxide ion concentration to determine pH.

Calculate the pH of chemical if given the hydrogen or hydroxide ion concentration.

PowerPoint listed below can be found under the Resources tab on the school website or in Google Classroom.

[https://www.stjoes.org/ourpages/auto/2013/9/9/47972430/Ch19%20Lessons19\\_2.ppt](https://www.stjoes.org/ourpages/auto/2013/9/9/47972430/Ch19%20Lessons19_2.ppt)

# Pro-Vision Academy Charter School

## High School Science Distance Learning Plan

### Wednesday

Watch the titration lab.  
Write a lab report on what you witness.

<https://youtu.be/HVjvFydMOc8>

### Thursday

What do you remember about oxidation reduction reactions?  
A redox reaction is short for oxidation reduction reaction and is just a reaction where electrons are transferred from one element to another Recall from previous units have when it forms an ion) and explain how to assign oxidation numbers to elements in a compound.  
Difference between element being oxidized or reduced (single element) and oxidizing or reducing agent (entire compounds).

Copy the Powerpoint notes in your notebook or a sheet of paper. Complete example problems listed.

[http://mrscoyleschemistry.weebly.com/uploads/3/2/1/4/32140015/oxidation-reduction\\_reactions\\_2.ppt](http://mrscoyleschemistry.weebly.com/uploads/3/2/1/4/32140015/oxidation-reduction_reactions_2.ppt)

### Friday

Review all your notes from the Powerpoint. Complete defining all key terms in a notebook or a sheet of paper.

acid  
base  
salt  
neutralization  
Arrhenius acids and bases  
ionization constant of water  
Brønsted-Lowry  
acids and bases  
dissociation constant  
pH  
hydronium ion  
hydroxide ion  
titration  
standard solution  
oxidation-reduction reaction  
precipitation reaction  
acid-base reaction

# Pro-Vision Academy Charter School

## High School Science Distance Learning Plan

**Human Anatomy**  
**(Suggested: 90 minutes of off-line activities)**  
Please contact A. Jackson with any questions at [ajackson@pvacademy.org](mailto:ajackson@pvacademy.org)

### Monday

Create a job description for a biotechnologist. Job description should include but not limited to purpose for recruitment, qualifications and skills and potential salary information. Students that have access to technology, you can research STEM occupations at PBS Learning Media. The link can also be found under the "Resources" tab in the At-Home Learning Hub on the school's website.

<https://www.pbslearningmedia.org/>

### Tuesday

Write a summary and description of bioethics, including but not limited to the principles of bioethics, what it means to be ethical and why ethics is important in science.

### Wednesday

Create a brochure for genetic testing, included but not limited to the pros and cons for genetic testing.

### Thursday

Create a set of matching/trading cards detailing the characteristics of viruses and bacteria. Cards should include but not be limited to, bacteria/virus morphology and methods of replication.

### Friday

Create a graphic organizer included but not limited to concept map, bubble map, Venn diagram of the types of tissues found in the body.

**Pro-Vision Academy Charter School**  
**High School Science Distance Learning Plan**

**Physics**  
**(Suggested: 90 minutes of off-line activities)**  
Please contact A. Jackson with any questions at [ajackson@pvacademy.org](mailto:ajackson@pvacademy.org)

**Monday**

Create a graphic organizer including, but not limited to - concept map, Venn diagram, flowchart, bubble map - of the difference between vectors and scalar quantities.

**Tuesday**

Identify and describe motion relative to different frames of reference, for example, create a scenario involving, people, cars, trains etc. Sketch the vectors representing motion of each object.

**Wednesday**

Create a 10-most wanted information sheet for the 3 conservation laws, please include examples of each with an image (can be hand-drawn).

**Thursday**

Create a flowchart/timeline of classical and modern physics, detailing the major differences and contributors of that era.

**Friday**

Write or draw a representation of the law of universal gravitation, making sure to label all variables/dimensions of the equation.