Accomack County Public Schools

High School Science
Learning Plans

These plans are also available on our website:

www.accomack.k12.va.us

Please note: The online portion of these plans is optional.

High School Learning Plans

Earth Science/Meteorology/Astronomy

Activities to Support Instruction During Extended School Closures

The purpose of this document is to provide an overview of suggested activities available to ACPS students. These suggestions can be used by families to support the continuity of education. The learning experiences developed and provided will give students opportunities to go deeper into concepts, ideas, and skills independently. These activities do not require copies or additional supplies.

ACTIVITY OPTION #1: INFOGRAPHIC

You will research one of the topics (your choice!) covered throughout the year. The information collected will be used to create an infographic (or poster) that describes the topic. Think about what makes your particular topic unique and the type of information you would want others to know about the specific topic.

As you gather information about your chosen topic, take notes and think about how you can organize this information and put it into your own words. For the topics that we have already covered you should explore another aspect of that topic such as; a new discovery in that field, invention or emerging innovation. Your final project will need to include *references to material* you included. *Pictures are necessary* to make your presentation interesting to your audience, which are your classmates.

Online Options:

Create a digital infographic based on the information gathered. See the rubric below for expectations.

Offline Options:

Create an infographic (on paper) based on the information gathered. See the rubric below for expectations.

Topics:

- **Scientific Method/Investigation:** Framework, Variables, Design, Data Collection Methods, and Graphs
- **Astronomy:** Big Bang, Galaxies, Stellar Formation/Evolution, Our Solar System, Sun, Planets, Other Solar Bodies, Earth-Moon Relationships, Seasons, Tides and Eclipses
- **Cartography/Mapping:** Latitude & Longitude, Types of Maps, How to Read a Map, Topography and GPS
- **Interior of the Earth, Minerals & Rocks:** Layers of the Earth, Mineral Groups, Mineral Uses, Rock Types and the Rock Cycle

Rubric:

	Meets expectations	Approaching expectations	Below expectations
Title	Title relates to graphic	Title does not relate to graphic	No Title
Overall Characteristics	Easy to Read and Grasp Relatable information on the System	Somewhat confusing information or hard to understand	Information does not relate to subject or is nonsensical
Visual Appeal	Pleasing and Relatable Graphics/Pictures/Fonts	Minimal Creativity or Not Relatable	No Connection to System
Accuracy of Information	Information is accurate and relatable	Some incomplete information/inaccuracy/un-relatable	No Information, source unreliable or wrong information
References	Complete Reference Information	Incomplete References Information	No Reference

ACTIVITY OPTION #2: PROPERTIES OF THE EARTH AND ITS SATELLITES

Online Options:

1. Use the internet to research common household minerals.
2. Locate 10 minerals in your home or yard.

3. Create a data table to collect the following information: Mineral name, Mineral Use, Picture
4. Submit via google classroom or email.
5. **Challenge**: Using your data table, create a google slides presentation identifying each mineral, a picture, and mineral usage **- OR -**
   Challenge: Using the graphic organizer, plan and conduct and experiment to test the effect of water temperature on crystal sizes (directions below).

Offline Options:

1. Use the textbook pages 34-62, 54-55 Table 2 *Common Minerals and Properties*, to research common household minerals.
2. Locate 10 minerals in your home or yard.
3. Create a data table to collect the following information: Mineral name, Mineral Use, Picture
4. Submit at a later date as communicated by your teacher.
5. **Challenge**: Using your minerals found, complete a one-pager (directions below) on your 10 minerals **-OR-**
   Challenge: Using the graphic organizer below, plan and conduct an experiment to test the effect of water temperature on crystal sizes (instructions below).

Supporting Materials if applicable:

One-Pager Instructions
Experimental Graphic Organizer: Crystal Growth

One-Pager Instructions:

A One-Pager is a creative response to your learning experience. It allows you to respond imaginatively while being brief and concise in making connections. The best learning occurs when you create your own idea from an experience that you have participated in. Your personal thinking about what you have experienced should be understood by the audience that views the One-Pager.

Your One-Pager must include the following:

- Use unlined white paper.
- All parts are represented on one side.
- Use colored pens, pencils, or markers.
- Fill the entire page.
- Be purposeful about the arrangement of your One-Pager. For example, have a reason for using a certain color or placing an object in a certain place.
- Write two facts about the topic: notes, textbook, internet.
- Use three visual images, drawn or cut out from magazines, to create a central focus to your page. If you use a computer image, personalize it to make it your own.
- Place five essential vocabulary words or phrases around the image. The words should express the main ideas, your impressions, feelings or thoughts about what you have seen or read.
- Write a summary of the topic
- Include 2-3 higher level questions on the content.
- Put a symbolic colored border around the edges of the page
- Write your name on the back

Crystal Growth At-Home Experiment

Introduction:

This activity reinforces the effect of varying temperatures on crystal size growth.

Materials:

Clear container
Measuring cup for water
Measuring spoon for sugar OR salt
Sugar OR Salt
Hot Tap Water
Cold Tap Water
Data Table
Textbook pages: 732-737 [Science Skills Review & Safety]

Instructions: Fill in the following table to complete the activity. Be sure to read all instructions and include all information.

RESEARCH: What is the focus of your experiment, and what background research have you done on the subject to prepare you for the experiment? (Maximum 4 sentences. Include your source material: website, textbook, etc.)
QUESTION: What question do you hope to answer with your experiment? (1 sentence.)
HYPOTHESIS: In the "if...then..." format, create a hypothesis for the predicted outcome of your experiment. (1 sentence. Must be organized and testable.)
EXPERIMENT: Describe how your experiment will work. Make sure to include and identify your independent variable, dependent variable, control, at least 3 constants, safety precautions, experiment location & setup, and number of trials (at least 1 trial).
DATA: Develop a way to collect and record data. Data should be represented in a table and then a graph of the data.
CONCLUSIONS: Did the experiment support or disprove your hypothesis? How so? (Minimum 3 sentences)
ELABORATE: What is one potential question generated by your experiment?

ACTIVITY OPTION #3: ROCKS, MINERALS AND VIRGINIA RESOURCES

Students review the many Earth materials as they take different forms during their cycle through the geosphere. Students choose two squares from the choice board below and complete the activities described:

Rap	**Business Cards**	**Rock Poster – Art**
Write a Rock Cycle Rap. (Must have at least 20 lines.) **Challenge:** Perform the rap and record it to your phone or other platform.	Design a business card for each of the ten minerals listed on the Moh's Hardness Scale. Properties and common uses should be listed on cards.	Go on a field trip around your house to find at least 7 items that are made from rocks or minerals. Show ways in which the rocks and/or minerals are used by taking pictures. Make a google slide presentation that shows what you found. Each slide should include a photo and explanation of use.
Comic Strip	**Name Game**	**Informative Flyer**
Research Dominion Power electric power plant. Find out which methods it uses to produce electricity. Take in consideration the way the plant produces power, its location, the pollution it produces, and the number of people it serves.	Choose one of the following resources: coal, limestone, or granite, that are harvested from the one of the Physiographic Provinces of Virginia. Discuss how it is formed, harvested, and used. Include the type of technology that is needed to "mine"	Research the use of fossil fuels in your community. Make a flyer with a catchy slogan to suggest ways to reduce your community's use of the fossil fuel. The flyer should include at least 3 graphics, information on how the fossil fuel is used, an alternative, and a reference page.

Make a 6 square comic strip on the plant's impact on the environment and on your community. Post on Google Slides.	the resource. Discuss the negative impacts on the environment as a result of harvesting this resource. Present the results in google slide presentation.	

Adapted from:

Frontiers Archives Fall 1990 to Spring 2000
The Shape of Life – Public Broadcasting Company (PBS)

Online Options:
Utilize Google Docs, Google Drawings, Google Slides, Lucidpress, etc. Complete research online, with digital textbook, etc.

Offline Options:
Complete assignments on poster board or computer paper. Complete research with textbook and other reference books you have available.