

# Learn at Home

## Earth Science



**Department of  
Education**

Chancellor Richard A. Carranza Updated 2020

# Unit Overview

This computer-based packet of resources is designed for students and their parents who wish to support in-school learning with activities that can be done independently at home. The packet includes ten days of assignments that support the scientific work of Earth Science with a particular focus on Regents preparation. These activities should each take 40-60 minutes and are best done in the order written.

## How to use this guide

Before doing any of this work, please try to contact your teacher to see if he or she has something else for you to do that fits better with what your classmates are doing.

Make sure your earth science reference tables are readily available. If you do not have them, you can get them here: <http://www.p12.nysed.gov/assessment/reftable/earthscience-rt/esrt2011-enqr.pdf>

Earth science reference tables in Chinese, Haitian Creole, Korean, Russian, and Spanish are here: <http://www.p12.nysed.gov/assessment/resources/home.html#es-trans-11>

For each activity, you will find:

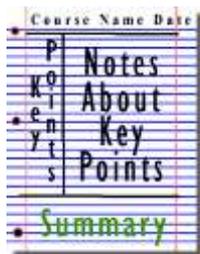
- A note-writing section
- A study section
- A practice section
- A final review section

For some activities this work extends across two days and for other activities all of the sections are done in one day.

## An alternative learning option

NASA's Jet Propulsion Laboratory activities - <https://www.jpl.nasa.gov/edu/teach/tag/search/Earth+Science>  
Enjoy a variety of explorations – from using satellite data to help determine the greatest renewable energy potentials to modeling the position of the planets around the Sun. The activities found here are both entertaining and educational. Children and adults can learn about the Earth Science together.

# Day 1 Cornell Notes



## Notes

One way of taking notes is called the Cornell note-taking system. You are going to be taking Cornell notes throughout this packet, so it is important to learn how to do it correctly. You may already know how to do this. If so, use the method you were already taught. If not, here are some instructions:

<http://coe.jmu.edu/learningtoolbox/cornellnotes.html>

Here is a sheet you may find useful:

[http://lsc.cornell.edu/wp-content/uploads/2015/10/Cornell-Note\\_Taking-System.pdf](http://lsc.cornell.edu/wp-content/uploads/2015/10/Cornell-Note_Taking-System.pdf)

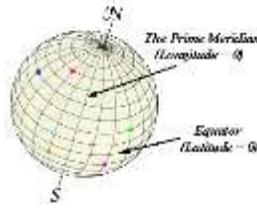
Basically, you write your notes on the right-hand side of a piece of notebook paper and the key points on the left-hand side. You can also put questions on the left. Try to line the key points and questions up with the corresponding information written on the right. At the bottom of the paper, you write a summary of the whole thing.

- Get out a piece of paper and go to <https://www.space.com/15567-north-star-polaris.html>
- Read the article and write Cornell notes on the information on Polaris.
- Now go to <http://www.pbs.org/wgbh/nova/longitude/find/samplea.html>
- Finish up your Cornell notes on this small graphic on longitude. Don't forget to write the key points/questions on the left and summary at the bottom.

## Study

- Cover up the right-hand side of the paper and quiz yourself on the questions and key points you wrote on the left to see if you can remember the details that you wrote on the right-hand side.

# Day 2 Longitude and Latitude



## Notes

You are going to use the notes you took during Day 1.

- Get the notes from Day 1.

## Study

- Review your notes. Cover up the right-hand side of the paper and quiz yourself on the questions and key points you wrote on the left to see if you can remember the details that you wrote on the right-hand side.

## Practice

- Go to <http://www.pbs.org/wgbh/nova/longitude/find.html> and click on the appropriate “Play Find Your Longitude” link. Go to at least **ten** locations. Write those locations down here:

- |          |           |
|----------|-----------|
| 1) _____ | 6) _____  |
| 2) _____ | 7) _____  |
| 3) _____ | 8) _____  |
| 4) _____ | 9) _____  |
| 5) _____ | 10) _____ |

## Final Review

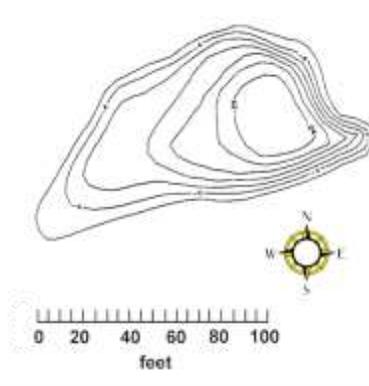
- Go to <https://www.hpcsd.org/site/handlers/filedownload.ashx?moduleinstanceid=598&dataid=2885&FileName=interactive%20mapping%20review.pdf>
- Scroll down to page 2, the second question. It starts with “A person knows the solar time on the Prime Meridian...”
- On the chart on the next page of this document, find the first words of the question, and record the answer you chose (before you looked at the correct answer by scrolling over the question mark) and the correct answer on your paper. If you got the question wrong, write down anything you need to remember to answer correctly next time.
- Repeat for the rest of the first column of questions, skipping the contour map question.

**The chart is on the next page of this document.**

## Final Review (continued)

Topic	First Words of Question	Your Answer	Correct Answer	I need to remember . . .
Longitude & Latitude	A person			
	What could			
	At which latitude			
	An observer			
	Cities located			
	The diagram below	SKIP	SKIP	
	As a person travels			
	As a person travels			

# Day 3 Topographic Maps Notes



## Notes

You are going to take Cornell notes again. Here are the instructions from Day 1:

One way of taking notes is called the Cornell note-taking system. You are going to be taking Cornell notes throughout this packet, so it is important to learn how to do it correctly. You may already know how to do this. If so, use the method you were already taught. If not, here are some instructions:

<http://coe.jmu.edu/learningtoolbox/cornellnotes.html>

Here is a sheet you may find useful:

[http://lsc.cornell.edu/wp-content/uploads/2015/10/Cornell-Note\\_Taking-System.pdf](http://lsc.cornell.edu/wp-content/uploads/2015/10/Cornell-Note_Taking-System.pdf)

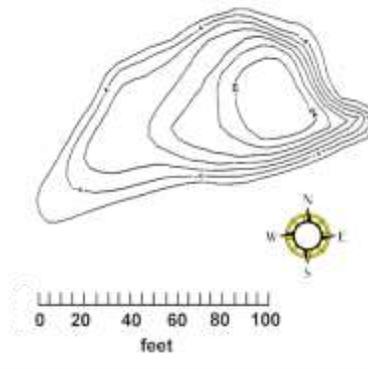
Basically, you write your notes on the right-hand side of a piece of notebook paper and the key points on the left-hand side. You can also put questions on the left. Try to line the key points and questions up with the corresponding information written on the right. At the bottom of the paper, you write a summary of the whole thing.

- Get out a piece of paper and go to [http://www.classzone.com/books/earth\\_science/terc/content/investigations/es0307/es0307page01.cfm](http://www.classzone.com/books/earth_science/terc/content/investigations/es0307/es0307page01.cfm)
- Click through the slides and write Cornell notes on the information on mapping.
- Now go to <https://digitalatlas.cose.isu.edu/geog/basics/topo.htm>
- Continue to take Cornell notes on this webpage on topographic maps. Don't forget to write the key points/questions on the left and summary at the bottom.

## Study

- Cover up the right-hand side of the paper and quiz yourself on the questions and key points you wrote on the left to see if you can remember the details that you wrote on the right-hand side.

# Day 4 Topographic Maps Practice I



## Notes

You are going to use the notes you took during Day 3.

- Get the notes from Day 3.

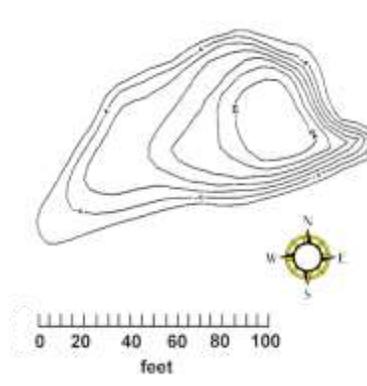
## Study

- Cover up the right-hand side of the paper and quiz yourself on the questions and key points you wrote on the left to see if you can remember the details that you wrote on the right-hand side.

## Practice

- Go to [http://academic.brooklyn.cuny.edu/geology/leveson/core/linksa/contour\\_quiz\\_menu.html](http://academic.brooklyn.cuny.edu/geology/leveson/core/linksa/contour_quiz_menu.html)
- Click on each of the activities and practice until you get the answers right.

# Day 5 Topographic Maps Practice II



## Notes

You are going to use the notes you took during Day 3.

- Get the notes from Day 3.

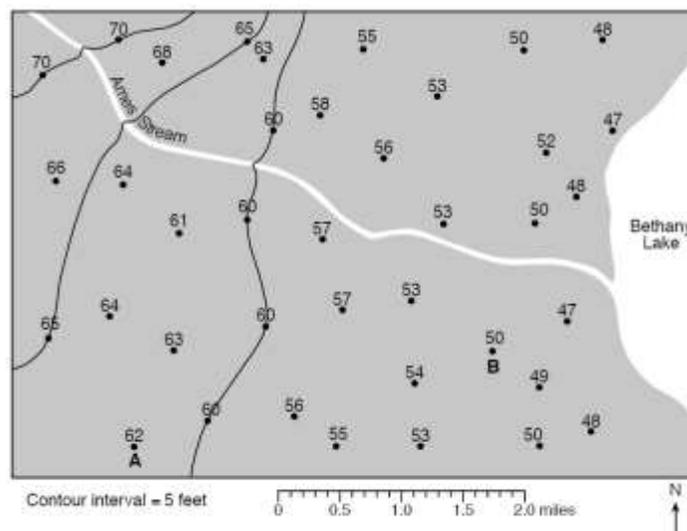
## Study

- Cover up the right-hand side of the paper and quiz yourself on the questions and key points you wrote on the left to see if you can remember the details that you wrote on the right-hand side.

## Practice

- Go to [https://www.sylvum.com/cgi/online/fillin.cgi/exam/regents/earth\\_science/jan\\_2018.tdf?3](https://www.sylvum.com/cgi/online/fillin.cgi/exam/regents/earth_science/jan_2018.tdf?3)
- Scroll down to question 56 and answer questions 56-58 below.

56)



57) \_\_\_\_\_ ft/in

58) Compass Direction: \_\_\_\_\_

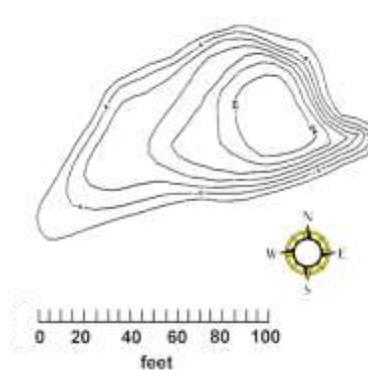
Evidence: \_\_\_\_\_  
\_\_\_\_\_

- Go back to [https://www.syvum.com/cgi/online/fillin.cgi/exam/regents/earth\\_science/jan\\_2018.tdf?3](https://www.syvum.com/cgi/online/fillin.cgi/exam/regents/earth_science/jan_2018.tdf?3), scroll down to the bottom of the page and click “score and show answers.” Look at the answers to questions 56-58 and compare them to your answers.

What did you do well with questions 56-58?

What do you need to remember for the future for questions like 56-58?

# Day 6 Topographic Maps Review



## Notes

You are going to use the notes you took during Day 3.

- Get the notes from Day 3.

## Study

- Cover up the right-hand side of the paper and quiz yourself on the questions and key points you wrote on the left to see if you can remember the details that you wrote on the right-hand side.

## Final Review

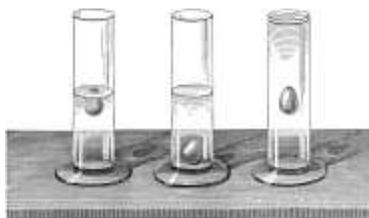
- Go to <https://www.hpcsd.org/site/handlers/filedownload.ashx?moduleinstanceid=598&dataid=2885&FileName=interactive%20mapping%20review.pdf>
- Scroll down to page 2. You will start with the second column, which begins with “Base your answer to the following question on the contour map below.”
- Find the first words of the question, write the answer you chose (before you looked at the correct answer by scrolling over the question mark) and the correct answer on your paper. If you got the question wrong, write down anything you need to remember to answer correctly next time.
- Repeat through page 6.

**The chart is on the next page of this document.**

## Final Review (continued)

Topic	First Word of Question	Your Answer	Correct Answer	I need to remember . . .
Topographic Maps	Which diagram			
	Which latitude			
	In which section			
	Which locations			
	Mill River			
	What is the elevation			
	What is the elevation			
	Approximately what			
	What is the approximate			
	Approximately how many			
	The diagram below			
	The diagram below			
	Which diagram			
	What is the latitude			
	Which profile			

# Day 7 Density



## Notes

You are going to take Cornell notes again. Here are the instructions from Day 1:

One way of taking notes is called the Cornell note-taking system. You are going to be taking Cornell notes throughout this packet, so it is important to learn how to do it correctly. You may already know how to do this. If so, use the method you were already taught. If not, here are some instructions:

<http://coe.jmu.edu/learningtoolbox/cornellnotes.html>

Here is a sheet you may find useful:

[http://lsc.cornell.edu/wp-content/uploads/2015/10/Cornell-Note\\_Taking-System.pdf](http://lsc.cornell.edu/wp-content/uploads/2015/10/Cornell-Note_Taking-System.pdf)

Basically, you write your notes on the right-hand side of a piece of notebook paper and the key points on the left-hand side. You can also put questions on the left. Try to line the key points and questions up with the corresponding information written on the right. At the bottom of the paper, you write a summary of the whole thing.

- Get out a piece of paper and go to <http://www.usetute.com.au/density.html>
- Write Cornell notes on that webpage of information on density. Don't forget to write the key points/questions on the left and summary at the bottom.

## Study

- Cover up the right-hand side of the paper and quiz yourself on the questions and key points you wrote on the left to see if you can remember the details that you wrote on the right-hand side.

## Practice

- Go to <http://www.nyu.edu/pages/mathmol/textbook/density.html> and do the calculations on that page and then identify the materials the blocks are made of on the next page of this document.

**Block I** is made of \_\_\_\_\_

**Block II** is made of \_\_\_\_\_

## Practice (continued)

- Go to <https://www.explorelarning.com/index.cfm?method=cResource.dspView&ResourceID=362> and calculate the density of three objects that float in water (liquid density=1 g/ml) and three that sink.

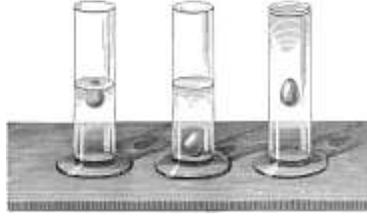
Object	Mass	Volume	Density

- Circle the densities in your chart of the objects that float in water (liquid density=1 g/ml).
- The density of water is  $1\text{g/cm}^3$  or  $1\text{g/cc}$  or  $1\text{ g/ml}$ . What do you notice about the densities of the floaters compared to the density of water?

---

---

# Day 8 Density Review



## Notes

You are going to use the notes you took during Day 7.

- Get the notes from Day 7.

## Study

- Cover up the right-hand side of the paper and quiz yourself on the questions and key points you wrote on the left to see if you can remember the details that you wrote on the right-hand side.

## Final Review

- Go to <https://www.hpcsd.org/site/handlers/filedownload.ashx?moduleinstanceid=598&dataid=2886&FileName=unit%20one%20interactive.pdf>
- Scroll down to question 13. It begins with “As a volume of air expands...”
- Write the question number, the answer you chose (before you looked at the correct answer by scrolling over the question mark) and the correct answer on your paper. If you got the question wrong, write down anything you need to remember to answer correctly next time.
- Repeat through at least question 23.

**The chart is on the next page of this document.**

## Final Review (continued)

Topic	Question Number	Your Answer	Correct Answer	I need to remember . . .
Density	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			
	26			
	27			
	28			
	29			
	30			
	31			
	32			
	33			
	34			

# Day 9 Space School Musical



You are going to take Cornell notes again. Here are the instructions from Day 1:

One way of taking notes is called the Cornell note-taking system. You are going to be taking Cornell notes throughout this packet, so it is important to learn how to do it correctly. You may already know how to do this. If so, use the method you were already taught. If not, here are some instructions:

<http://coe.jmu.edu/learningtoolbox/cornellnotes.html>

Here is a sheet you may find useful:

[http://lsc.cornell.edu/wp-content/uploads/2015/10/Cornell-Note\\_Taking-System.pdf](http://lsc.cornell.edu/wp-content/uploads/2015/10/Cornell-Note_Taking-System.pdf)

Basically, you write your notes on the right-hand side of a piece of notebook paper and the key points on the left-hand side. You can also put questions on the left. Try to line the key points and questions up with the corresponding information written on the right. At the bottom of the paper, you write a summary of the whole thing.

- Get out a piece of paper and go to <https://www.jpl.nasa.gov/edu/teach/activity/space-school-musical/>
- Write Cornell notes on Planetary Posse (Scroll down to the second item under “materials.”), focusing on things you think you need to know for the Regents. You can use both the video and the transcript to use to write your notes. Don’t forget to write the key points/questions on the left and summary at the bottom.

## Study

- Cover up the right-hand side of the paper and quiz yourself on the questions and key points you wrote on the left to see if you can remember the details that you wrote on the right-hand side.

## Practice

- Look at the [Earth Science Reference Tables](#), page 15, and note any connections you can between Planetary Posse and the Solar System Data table.

<b>Planetary Posse</b>	<b>Solar System Data Table</b>

