CHEMICAL SYSTEMS
2ND SEMESTER
CURRICULUM MAP

UNIT	NAME	Chapter
I	Water & Solutions	23
II	Earth's Water Systems	24
III	Thermal Energy	25
IV	Earth's Atmosphere	26
V	Weather & Climate	27
VI	The Changing Earth	28
VII	Formation of Rocks	29

Chemical Systems One-Year Curriculum Map
2nd semester, weeks 1-6

Month	**January**				**February**	
Week	**1**	**2**	**3**	**4**	**5**	**6**
Weeks on unit	**2.5**			**2.5**		
Unit Name	**Water and Solutions**			**Earth's Water Systems**		
Chapters	**23**			**24**		
Essential Questions	▪ What are the effects of acid rain on the environment? ▪ How does water quality affect living things? ▪ What is so special about water? (I.1.B.a.b.) (V.3.A.e.)			▪ How is water recycled on the Earth? ▪ Are we running out of water? ▪ Is new water created? ▪ What is our primary source of water? (I.1.D.a. V.1.B.a.)		
Content	▪ Water molecules ▪ Properties of water ▪ Solution chemistry ▪ Solubility ▪ Acid/Base ▪ pH ▪ Acid Rain			▪ Earth's hydrosphere ▪ Water cycle ▪ Water quality ▪ Acid rain ▪ Oceans and rivers ▪ Local water systems ▪ Water table ▪ Water purification ▪ Water management		
Skills	▪ Identify and describe unique properties of water. ▪ Identify the components of a solution. ▪ Categorize mixtures as solutions, suspensions, or colloids. ▪ Define solubility ▪ Describe saturated, unsaturated and supersaturated. ▪ Understand solubility factors. ▪ Identify the characteristic properties of acids and bases. ▪ Relate the pH scale to examples of acids and bases.			▪ Describe the water cycle on earth. ▪ Describe how water quality is analyzed. ▪ Understand the causes and effects of acid rain. ▪ How acid rain effects local area. ▪ Explain where water might have come from. ▪ Describe how the oceans and seas formed. ▪ Explain how the ocean is a sink for CO_2 gas. ▪ Describe the effects of toxic substance getting into water table.		
Assessments	▪ Properties of water lab ▪ Solutions lab ▪ Factors affecting solubility lab. ▪ Quiz ▪ Properties of acids and bases lab. ▪ Unit Exam			▪ Water cycle project poster. ▪ Water analysis lab. ▪ Research paper on local geological formations of Krast Topography. ▪ Unit Quiz ▪ Unit Exam		

Chemical Systems One-Year Curriculum Map
2nd semester, weeks 7-11

Month	**February**		**March**		
Week	**7**	**8**	**9**	**10**	**11**
Weeks on Unit	**2.5**		**2.5**		
Unit Name	**Thermal Energy**		**Earth's Atmosphere**		
Chapters in CPO	**25**		**26**		
Essential Questions	▪ How is temperature different from heat? ▪ How do instruments measure temperature? ▪ What is absolute zero? ▪ What does Kinetic energy have to do with temperature? (I.2.A.a.D.a.)		▪ What's in the Earth's atmosphere? ▪ How does the atmosphere change as you go up? ▪ How will depletion of the Ozone layer affect living organisms? (V.1.B.a.C.a.b.D.a.b.) (V.3.A.a.b.c.d.) (VII.3.B.a.b.c.) (VII.2.B.a.b.)		
Content	▪ Measuring heat ▪ Conversion between common temperature scales. ▪ Endo-& Exothermic reactions. ▪ Heat transfer ▪ Calories, calories ▪ Joules ▪ Specific heat ▪ Thermal expansion		▪ Formation of the atmosphere ▪ Layers of the atmosphere ▪ Atmospheric pressure ▪ Ozone layer ▪ Greenhouse affect ▪ Global warming		
Skills	▪ Measure temperature. ▪ Converting temperature scales. ▪ Describe the relationship between heat and energy. ▪ Describe the direction of heat transfer during exo-endothermic reactions. ▪ Describe the methods of heat transfer. ▪ Calculate the amount of energy transferred in a chemical reaction. ▪		▪ Describe the formation, layers, and composition of the atmosphere on Earth. ▪ Compare the atmosphere on Earth to other planets like Mars and Venus. ▪ Read a barometer. ▪ Describe the ozone layer and its role in our survival. ▪ Discuss greenhouse effect and global warming. ▪ Describe how their choices impact the environment.		
Assessment	▪ Energy in a nut lab. ▪ Exo-endothermic reaction lab. ▪ Quiz ▪ Unit Exam		▪ Measuring ozone in the school lab. ▪ Atmospheric pressure lab ▪ Research paper on ozone holes, greenhouse effect, or global warming. ▪ Alternative energy investigation. ▪ Quiz ▪ Unit Exam		

Chemical Systems One-Year Curriculum Map
2nd semester, weeks 12-16

Month	**March**	**April**			
Week	**12**	**13**	**14**	**15**	**16**
Weeks on Unit	**2**		**3**		
Unit Name	**Weather and Climate**		**The Changing Earth**		
Chapters in CPO	**27**		**28**		
Essential Questions	▪ What influences the weather in the Midwest? ▪ How is weather related to human activity? ▪ How can changes in air density become so destructive? (V.2.A.a.B.a.b.c.d.e.f.) (V.2.F.a.b.) (V.2.G.a.b.)		▪ Why is the earth considered to be dynamic? ▪ Why do South America and Africa look like they fit together? ▪ Will your house survive an earthquake? (V.2.D.a)		
Content	▪ Heating and cooling of the earth's surface. ▪ Global winds and currents. ▪ Weather patterns. ▪ Storms ▪ Biomes ▪ Local weather patterns ▪ Changes in global weather patterns. ▪		▪ Composition of the earth's crust. ▪ Internal structure of the Earth. ▪ Plate tectonics ▪ Earthquakes		
Skills	▪ Describe how the earth is heated. ▪ Describe the formation of global winds. ▪ Describe the locations and direction of global winds. ▪ Describe convection currents. ▪ Describe the effect the earth's rotation has on global wind patterns. ▪ Describe what factors influence the weather. ▪ Describe the formation of storms ▪ Discuss the six different basic biomes.		▪ Describe the mechanism behind earth's changing surface. ▪ Describe convection currents. ▪ Describe plate tectonics. ▪ Describe the three main plate boundaries. ▪ Describe how earthquakes occur. ▪ Describe how seismic waves are used to explore the Earth's interior. ▪ Describe local plate boundaries.		
Assessment	▪ Report on local weather patterns. ▪ Tactile poster project on biome ▪ Quiz ▪ Unit Exam		▪ Model building of the Earth's crust and interior. ▪ Plate boundary modeling and activity. ▪ Quiz ▪ Plate Tectonic CD-ROM quiz ▪ Unit Exam ▪		

Chemical Systems One-Year Curriculum Map
2nd semester, weeks 16-18

Month	**April**	**May**	
Week	**16**	**17**	**18**
Weeks on Unit	**3**		
Unit Name	**Formation of Rocks**		
Chapter in CPO	**29**		
Essential Questions	▪ How are rocks and minerals formed? ▪ Does the Earth recycle itself? ▪ How can rocks be used to date an event? (V.3.A.f.g.)		
Content	▪ Rock cycle ▪ Rocks and minerals ▪ Volcanic activity ▪ Soil formation ▪ Erosion ▪ Weathering ▪ Relative dating		
Skills	▪ Identify the three main rock types. ▪ Identify local rocks and minerals. ▪ Discuss how plate tectonics causes volcanic activity. ▪ Describe the recycling process of the earth. ▪ Identify important minerals both local and throughout the country. ▪ Recognize the limited availability of major mineral deposits in the US. ▪ Describe the impact humans have had on mineral deposits.		
Assessment	▪ Local rock and mineral identification lab. ▪ Rock Cycle poster project ▪ Quiz ▪ Research on US strategic mineral reserve. ▪ Unit Exam ▪		