

Week 4 Unit 12

Online Learning Water and Solutions

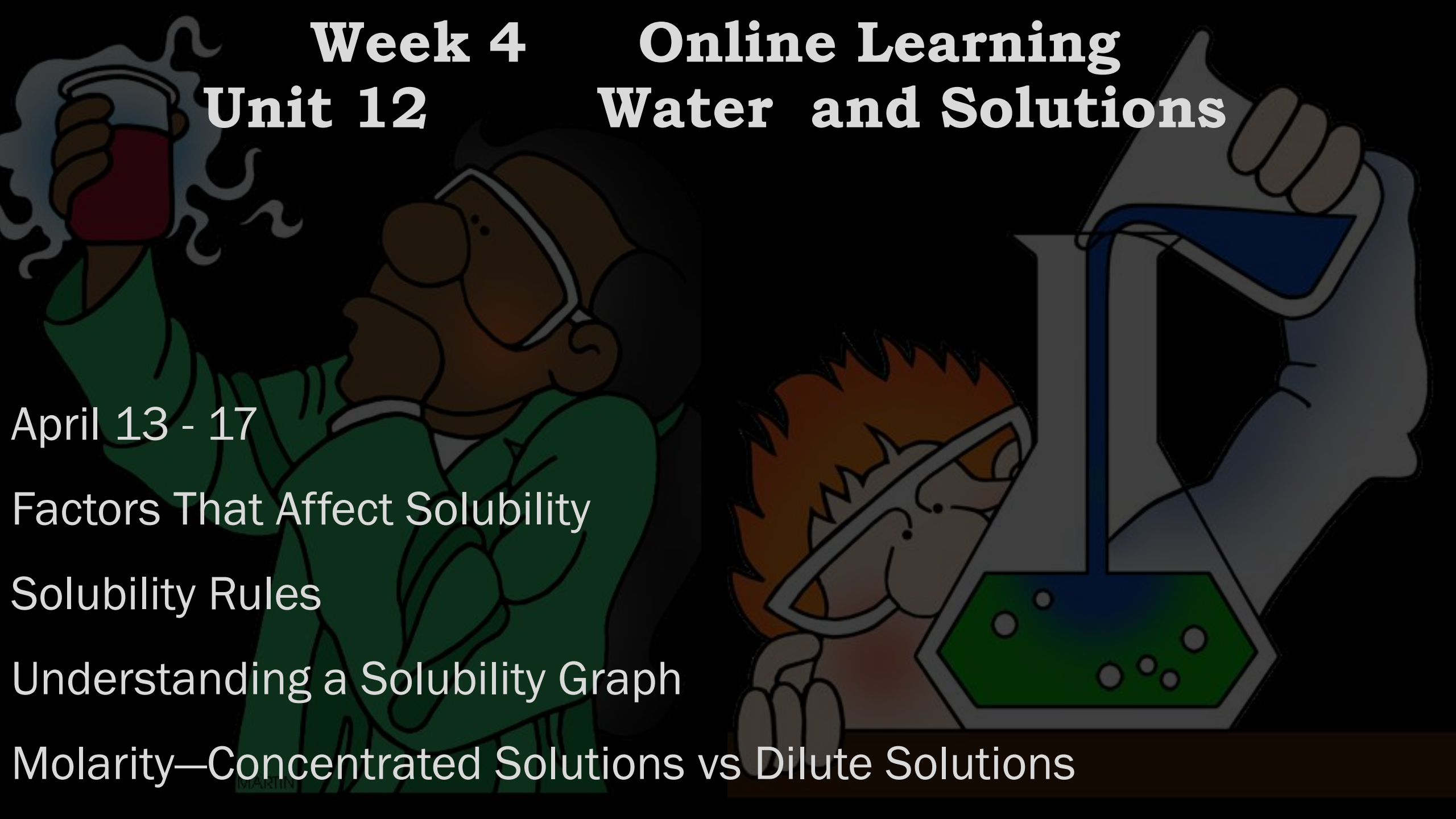
April 13 - 17

Factors That Affect Solubility

Solubility Rules

Understanding a Solubility Graph

Molarity—Concentrated Solutions vs Dilute Solutions



Monday, April 13

FACTORS THAT AFFECT SOLUBILITY

Week4- Assignment #1 Add your \$.02



Think about a time when you were preparing a solution....maybe you were adding chocolate syrup to a cup of milk for delicious chocolate milk....or maybe you were adding sugar to sweeten your iced tea in a restaurant, or have you ever added crystal light to your water bottle? Describe two ways in which you could get more of the solute to dissolve. Discuss in the discussions tab.

FACTORS THAT AFFECT SOLUBILITY

Solutions & Solubility

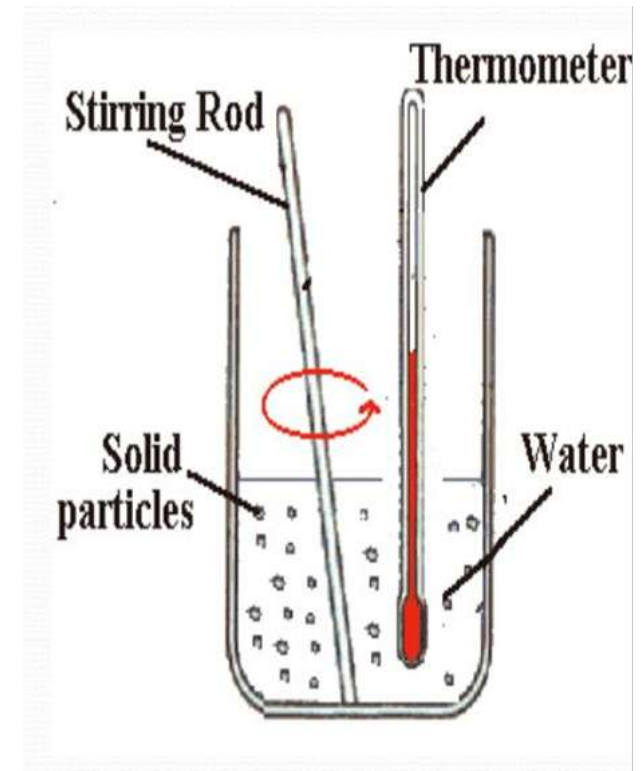
FACTORS THAT AFFECT THE RATE OF DISSOLVING AND SOLUBILITY

ACTIVITY 2: Who Can Dissolve the Most Salt?

Factor	Affect on rate of dissolving/solubility
Temperature	Higher temperatures allow more molecules to dissolve
Agitation	Stirring/agitation allows more molecules to dissolve
Surface area	Increasing the surface area allows more molecules to dissolve

FACTORS THAT AFFECT SOLUBILITY

FACTOR	EFFECT (READ: as temp increases, solubility of solids...)	EXCEPTIONS
TEMPERATURE	T ↑ <u>solids</u> ↑	Gases react in Opposite way: T ↑ <u>gases</u> ↓
PRESSURE	No effect on Solubility of <u>Solids</u> or <u>liquids</u>	Has an effect On gases: P ↑ <u>gases</u> ↑
POLARITY	Polar dissolves polar Nonpolar dissolves nonpolar	



Tuesday, April 14

Do You Know Your Solubility Rules?

<https://www.youtube.com/watch?v=xbCP3-fmLw4>

Watch the video! Take Notes

Assignment #2 Complete the practice problems using your solubility chart and check the answer key tomorrow!



PbI_2 *insoluble*
 ZnSO_4 *soluble*
 $(\text{NH}_4)_2\text{SO}_4$ *soluble*
 CaS

SOLUBILITY OF COMMON IONIC COMPOUNDS IN WATER	
Soluble, compounds contain	Common exceptions
CH_3COO^- , ClO_2^-	None
Br^-	None
NO_3^-	None
Cl^-	None
CO_3^{2-}	None
SO_4^{2-}	None
OH^-	Compounds of Ag^+ , Pb^{2+} , and Hg_2^{2+}
I^-	Compounds of Ag^+ , Pb^{2+} , and Hg_2^{2+}
S^{2-}	Compounds of Ag^+ , Pb^{2+} , and Hg_2^{2+}
F^-	Compounds of Ca^{2+} , Sr^{2+} , and Ba^{2+}
Insoluble, compounds contain	Common exceptions
CO_3^{2-}	Compounds of NH_4^+ and the alkali metal cations
NO_3^-	Compounds of NH_4^+ and the alkali metal cations
OH^-	Compounds of NH_4^+ and the alkali metal cations
O_2C^-	Compounds of NH_4^+ and the alkali metal cations
S^{2-}	Compounds of NH_4^+ , the alkali metal cations, Ca^{2+} , Sr^{2+} , and Ba^{2+}
F^-	Compounds of NH_4^+ , the alkali metal cations, Ca^{2+} , Sr^{2+} , and Ba^{2+}

Wednesday, April 15th

UNDERSTANDING SOLUBILITY GRAPHS

<https://www.texasgateway.org/resource/types-solutions-saturated-supersaturated-or-unsaturated>

TODAY, WE WILL LEARN THE FOLLOWING:

Unsaturated, Saturated, and Supersaturated Examples

How to Read a Solubility Graph

Practice Reading a Solubility Graph—Part 1

Practice Reading a Solubility Graph—Part 2

This lesson is divided into the four sections listed above. When you click on any of the links above, it takes you directly to the instructions and practice questions for that section. If you scroll up and down throughout the lessons, you are able to study any of them and do the practice. Start with a review of unsaturated, saturated and supersaturated. Then work at your own pace.

Thursday, April 15th

UNDERSTANDING SOLUBILITY GRAPHS continued

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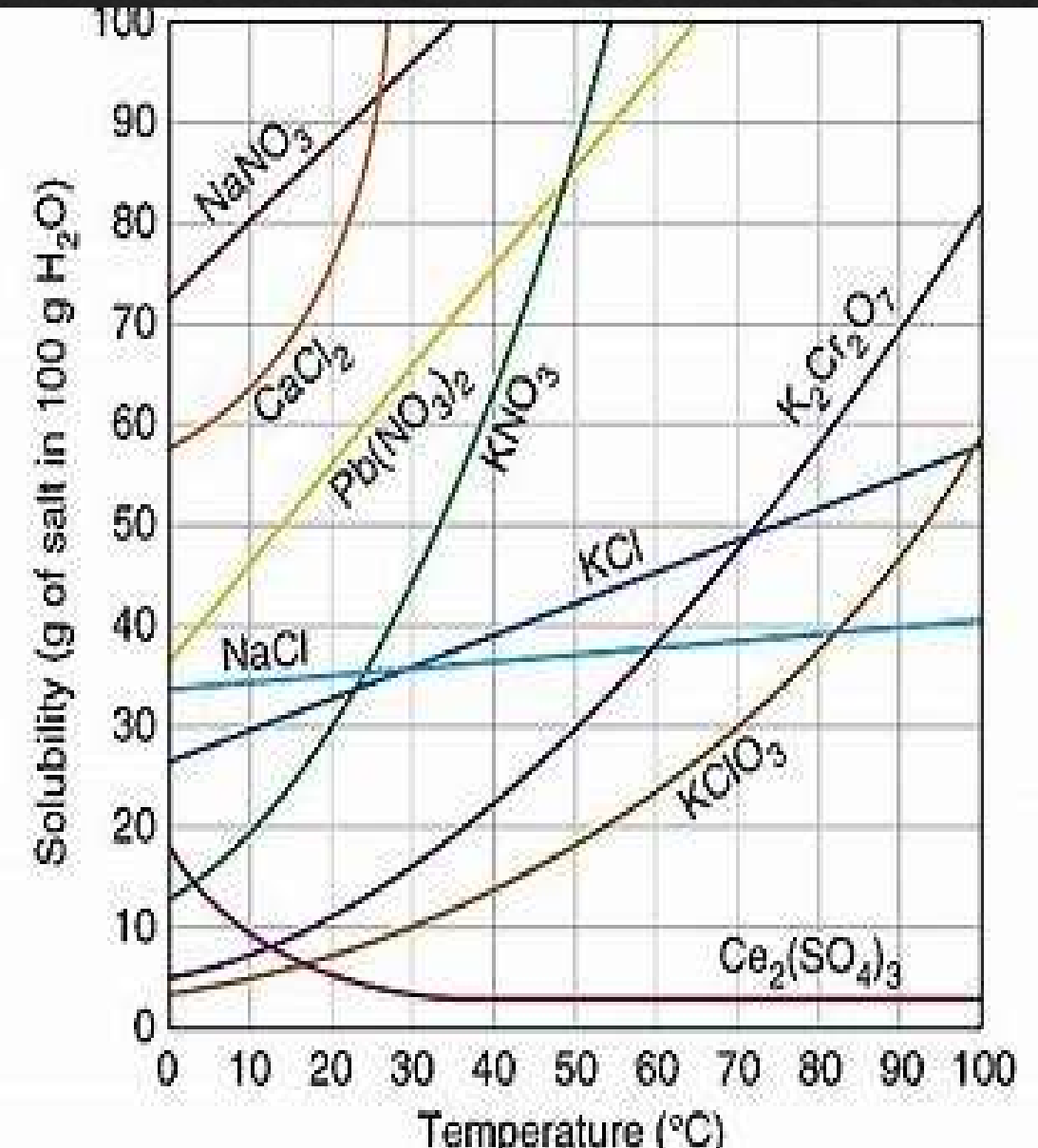
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Thursday, continued

Check for Understanding



At 40°C, how much KNO_3 can be dissolved in 200 grams of water?

A saturated solution of KClO_3 is formed from one hundred grams of water. If the saturated solution is cooled from 80°C to 50°C, how many grams of precipitate are formed?

Which salt is the most soluble at 20°C?

How many grams of NaCl will dissolve in 200g of water at 70°C?

At what temperature would you have a saturated solution of NaNO_3 if you have 90g of NaNO_3 dissolved in 100g of water?

If you have a solution of 50g of KClO_3 in 100g of water at 60°C, is it saturated, unsaturated, or supersaturated?

Friday, April 16th

Let's Review and Practice!



What are the factors that affect solubility? The solubility of gas solutions is different in what way? Explain.

Do you know your solubility rules?

How do we read solubility graphs?

Week 4 Assignment#3 STUDY GUIDE

Due Today.....

Have a Safe Weekend!

