

Unit 3 - Weather and Gas Laws

Chemistry

11 Days

Topics from the NYC Scope and Sequence

The Physical Behavior of Matter
Chemical Bonding
Atomic and Molecular Models

New York State Core Curriculum Alignment

The Physical Behavior of Matter: 3.4a, 3.4b, 3.4d, 3.4e
Chemical Bonding: 5.2e
Atomic and Molecular Models 3.2a

Pacing Guide (*This guide is based on 50-minute lesson length*)

Day	Living by Chemistry Lesson Title	Additional Resource
1	<p>We suggest you skip the following lessons from Living by Chemistry because they are not necessary for Regents preparation:</p> <ul style="list-style-type: none"> 3.1 -Weather or Not: Weather Science 2 3.2- Raindrops Keep Falling: Measuring Liquids 11 3.3- Having a Meltdown: Density of Liquids and Solids 20 3.4-Hot Enough: Thermometer 	
	<p>3.5- Absolute Zero Kelvin Scale</p>	Phet simulation for the computer portion of the activity: Link
2-3	<p>3.6- Sorry, Charlie: Charles's Law</p> <ul style="list-style-type: none"> For the optional demo: Will be difficult to get liquid nitrogen for this lesson. It is easier to find dry ice. You will need to buy a lot of dry ice to make sure it doesn't all sublime before you use it in the lab: Lesson 8. In order to fit the lesson into 50 minutes you may want to pick and choose specific questions from the worksheets for students You can also spend more time on the lesson and complete it over two days 	<p>Lava lamp video</p> <ul style="list-style-type: none"> Will be easier to use for the chem catalyst then bringing in an actual lava lamp
	<p>We suggest you skip the following lessons from Living by Chemistry because it is not necessary for Regents preparation</p> <ul style="list-style-type: none"> 3.7- Front and Center Density, Temperature, and Fronts 	
4-5	<p>3.8- It's Sublime: Gas Density</p> <ul style="list-style-type: none"> Mini lesson: Review properties of solid, liquids, and gases/ vapor pressure(Table H) before going into the lab Make sure to also explain deposition 	<p>Boo Bubbles</p> <ul style="list-style-type: none"> Great demo to do with the dry ice
6	<p>3.9- Air Force: Air pressure</p>	

	<ul style="list-style-type: none"> It is recommended to do the activities as teacher led demos so they all can be completed within the 45-50 minute lesson period 	
7	3.10- Feeling Under Pressure: Boyle's Law <ul style="list-style-type: none"> In order to fit the lesson into 50 minutes you may want to pick and choose specific questions from the worksheets for students 	Video: Exploding Watermelon <ul style="list-style-type: none"> Great example of Boyle's Law
8	3.11- Egg in a Bottle: Gay Lussac's Law <ul style="list-style-type: none"> In order to fit the lesson into 50 minutes you may want to pick and choose specific questions from the worksheets for students 	
9	3.12- Be the Molecule: Molecular view of pressure <ul style="list-style-type: none"> In order to fit the lesson into 50 minutes you may want to pick and choose specific questions from the worksheets for students 	
10-11	3.13- What Goes Up: Combined Gas Law <ul style="list-style-type: none"> Make sure students can do Combined Gas Law problems that: <ul style="list-style-type: none"> are given in Celsius and they need to convert to Kelvin are in STP and they need to use values from table A to solve Students know how to solve if the pressure is given in atm or kpa 	
	Regents alignment: An additional activity is required to address the following topics: <ul style="list-style-type: none"> Students must know the properties and differences between real and ideal gasses 	
	We suggest you skip the following lessons from Living by Chemistry because it is not necessary for Regents preparation. <ul style="list-style-type: none"> 3.14- Cloud in a Bottle: High and Low Air Pressure 3.15- n Is for Number: Pressure and Number Density 3.16-STP: The Mole and Avogadro's Law 3.17-Take a Breath: Ideal Gas Law 3.18-Feeling Humid: Humidity, Condensation 3.19- Hurricane!: Extreme Physical Change 3.20- Stormy Weather: Unit Review 	