

## 8th Grade Science Framework

### State Goal and Percentage: 11 – Scientific Inquiry 20%

**State Goal 11: Understand the process of scientific inquiry and technological design to investigate questions, conduct experiments, and solve problems.**

**Standard and Skills: 11 A Scientific Inquiry 10%**  
**Stage: H**

Standard	Assessment Objective	Instruction & Assessment		Cross curricular connection		Additional Resources
		Instruction and guided practice	Assessment	Reading Assessment number	Math Assessment number	
11.A.3a To formulate hypotheses that can be tested by collecting data	11.7.01	<ul style="list-style-type: none"> <li>▪ Eggspirement lab</li> <li>▪ Concentration of solutions lab</li> <li>▪ DNA extraction lab</li> <li>▪ Weight watchers lab</li> <li>▪ Science Fair Project</li> </ul>	<ul style="list-style-type: none"> <li>▪ Scientific scenario is given, students must investigate and apply scientific method</li> <li>▪ Lab write-ups</li> <li>▪ Section review questions</li> <li>▪ Power Point Presentation Board</li> <li>▪ Research Paper</li> </ul>	1.6.08	8.6.07	Other books, internet resources, etc.  (time frame estimated August – mid Sept.)
11.A.3b Conduct scientific experiments that control all but one variable	11.7.02			7.8.01		
11.A.3c Collect and record data accurately using consistent measuring and recording techniques and media	11.7.03			7.8.03		
	11.7.04			7.8.05		
	11.7.06			6.8.15		
				6.8.17		
11.A.3d Explain the existence of unexpected results in a data set					6.8.18	
11.A.3e Use data manipulation tools and quantitative (e.g., mean, mode, simple equations) and representational methods (e.g., simulations, image processing) to analyze measurements						

<p>11.A.3f Interpret and represent results of analysis to produce findings</p>					
<p>11.A.3g Report and display the process and results of a scientific investigations</p>				<p>Above labs also cover these state standards</p>	<p>13.7.01 13.7.02 13.7.03 13.7.04 13.7.05 13.7.06</p>
<p>13.A.3a Identify and reduce potential hazards in science activities</p>	<p>13.A.3c Explain what is similar and different about observational and experimental investigations</p>	<p>13.B.3c Describe how occupations use scientific and technological knowledge and skills</p>			

## 8th Grade Science Framework

### State Goal and Percentage: 11 – Scientific Inquiry 20%

**State Goal 11: Understand the process of scientific inquiry and technological design to investigate questions, conduct experiments, and solve problems.**

**Standard and Skills: 11B – Technological Design 10%**  
**Stage: H**

Standard	Assessment Objective	Instruction & Assessment		Cross curricular connection		Additional Resources
		Instruction and guided practice	Assessment	Reading Assessment number	Math Assessment number	
11.B.3a Identify an actual design problem and establish criteria for determining the success of a solution	11.7.07	<ul style="list-style-type: none"> <li>▪ Lego Lab</li> <li>▪ Index card tower</li> </ul>	Rubric for boat success  Lab Write up	1.8.06	7.6.01	Other books, internet resources, etc.
	11.7.08			3.8.01	9.8.01	
	11.7.09			3.8.03	9.8.02	
	11.7.10				9.8.09 10.8.08	
11.B.3b Sketch, propose, compare design solutions to the problem considering available materials, tools, cost effectiveness and safety						
11.B.3c Select the most appropriate design and build a prototype or simulation						
11.B.3d Test the prototype using available materials,						

<p>instruments and technology and record the data</p>													
<p>11.B.3e Evaluate the test results based on established criteria, note sources of error and recommend improvements</p>													
<p>11.B.3f Using available technology, report the relative success of the design based on the test results and criteria</p>													
<p>13.A.3a Identify and reduce potential hazards in science activities</p>						<p>13.7.01</p>							
<p>13.A.3b Analyze historical and contemporary cases in which the work of science has been affected by both valid and biased scientific practices</p>						<p>13.7.02</p>							
<p>13.A.3c Explain what is similar and different about observational and experimental investigations</p>						<p>13.7.03</p>							
<p>13.B.3a Identify and explain ways that scientific knowledge and economics drive technological development</p>						<p>13.7.04</p>							
						<p>13.7.05</p>							
						<p>13.7.06</p>							

<p>13.B.3b Identify important contributions to science and technology that have been made by individuals and groups from various cultures</p> <p>13.B.3c Describe how occupations use scientific and technological knowledge and skills</p> <p>13.B.3d Analyze the interaction of resource acquisition, technological development and ecosystem impact.</p>						
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## 8th Grade Science Framework

State Goal and Percentage: 12 – Integrated Science 60%

**State Goal 12: Understand the fundamental concepts, principles and interconnections of the life, physical, and earth/space sciences**

**Standard and Skills: 12A Living Things – 10%**  
**Stage: H**

Standard	Assessment Objective	Instruction and guided practice	Assessment	Cross curricular connection		Additional Resources
				Reading Assessment number	Math Assessment number	
12.A.3a Explain how cells function as “building blocks” of organisms and describe the requirements for cells to live  12.A.3b Compare characteristics of organisms produced from a single parent with those of organisms produced by two parents  12.A.3c Compare and contrast how different forms and structures reflect different functions	12.7.01	Chapter 4 – Heredity	Chapter Tests	1.8.03	6.8.15	Other books, internet resources, etc.
	12.7.02	Chapter 5 – Genes and DNA	Lab Write ups	1.8.07	10.7.02	
	12.7.03	Bug Lab	Rubric assessment	1.8.08	10.7.03	
	12.7.04	Tracing Traits Lab	Chapter Quizzes	1.8.19		
	12.7.05	Tic Tac Toe Project	KWL Project	1.8.23		
	12.7.06	Meiosis Lab	Punnett Squares			
	12.7.07	Pedigree Lab				
	12.7.08	Double Punnett Square				
	12.7.09					
	12.7.10					
	12.7.11					
	12.7.12					
	12.7.13					
	12.7.14					
	12.7.15					
	12.7.16					
	12.7.17					

	12.7.18 12.7.19 12.7.20 12.7.21 12.7.22 12.7.23 12.7.24					
13.A.3a Identify and reduce potential hazards in science activities	13.7.01 13.7.02 13.7.03 13.7.04 13.7.05 13.7.06					

## 8th Grade Science Framework

State Goal and Percentage: 12 – Integrated Science 60%

**State Goal 12: Understand the fundamental concepts, principles and interconnections of the life, physical, and earth/space sciences**

**Standard and Skills: 12B Environment and Interactions of Living Things – 10%**  
**Stage: G**

Standard	Assessment Objective	Instruction & Assessment	Cross curricular connection		Additional Resources
		Instruction and guided practice	Reading Assessment number	Math Assessment number	Other books, internet resources, etc.
12.B.3a Identify and classify biotic and abiotic factors in an environment that affect population density, habitat, and placement of organisms in an energy pyramid	12.7.25 12.7.26 12.7.27 12.7.28 12.7.29 12.7.30 12.7.31	Chapter 6 – Evolution of Living Things	1.8.03 1.8.07 1.8.08 1.8.11 1.8.19	8.8.10 10.7.02 10.7.03	
12.B.3b Compare and assess features of organisms for their adaptive, competitive and survival potential		Chapter quizzes Chapter tests Designer Animals			
12.A.3c Compare and contrast how different forms and structures reflect different functions					

13.A.3a Identify and reduce potential hazards in science activities	13.7.01						
	13.7.02						
	13.7.03						
	13.7.04						
	13.7.05						
	13.7.06						

## 8th Grade Science Framework

State Goal and Percentage: 12 – Integrated Science 60%

**State Goal 12: Understand the fundamental concepts, principles and interconnections of the life, physical, and earth/space sciences**

**Standard and Skills: 12C Matter and Energy – 10%**

**Stage: H**

Standard	Assessment Objective	Instruction & Assessment		Cross curricular connection		Additional Resources
		Instruction and guided practice*	Assessment	Reading Assessment number	Math Assessment number	
12.C.3a Explain interactions of energy with matter including changes of state and conservation of mass and energy  12.C.3b Model and describe the chemical and physical characteristics of matter	12.7.33	<ul style="list-style-type: none"> <li>▪ Chapter 17 – The Properties of Matter</li> <li>▪ Chapter 18 – States of Matter</li> <li>▪ Chapter 19 – Elements, Compounds, and Mixtures</li> <li>▪ Chapter 20 – Introduction to Atoms</li> <li>▪ Chapter 21 – The Periodic Table</li> <li>▪ Chapter 22 – Chemical Bonding</li> <li>▪ Chapter 23 – Chemical Reactions</li> </ul>	Chapter tests	1.8.08	7.7.01	Other books, internet resources, etc.  (mid Sept. – mid Oct.)
	12.7.34		Chapter quizzes		7.7.03	
	12.7.35		Lab write ups			
	12.7.36		Ice Cream Lab			
	12.7.37		Periodic Table Color Code			
	12.7.38		Marshmallow Lab			
	12.7.39		Building compounds with plastic models			
	12.7.40					
	12.7.41					

	12.7.42 12.7.43	<ul style="list-style-type: none"> <li>▪ Chapter 24 – Chemical Compounds</li> </ul>	Concentration of Solutions Lab Density Lab Flip Chart Boyle's Law Lab Charles Law Lab "Where do you find it?" Investigation			
13.A.3a Identify and reduce potential hazards in science activities  13.A.3c Explain what is similar and different about observational and experimental investigations	13.7.01 13.7.02 13.7.03 13.7.04 13.7.05 13.7.06					

## 8th Grade Science Framework

**State Goal and Percentage: 12 – Integrated Science 60%**

**State Goal 12: Understand the fundamental concepts, principles and interconnections of the life, physical, and earth/space sciences**

**Standard and Skills: 12D Force and Motion – 10%**

**Stage: H**

Standard	Assessment Objective	Instruction & Assessment		Cross curricular connection		Additional Resources
		Instruction and guided practice	Assessment	Reading Assessment number	Math Assessment number	
12.D.3a Explain and demonstrate how forces affect motion  12.D.3b Explain the factors that affect the gravitational forces on objects	12.7.63	Lego boat activity	Lab write up	1.8.03	7.8.05	Other books, internet resources, etc.  (mid Sept. – mid Oct.)
	12.7.64			1.8.07		
	12.7.65			1.8.08		
	12.7.66			1.8.19		
	12.7.67			1.8.23		
	12.7.68					
	12.7.69					
	12.7.43					

<p>13.A.3a Identify and reduce potential hazards in science activities</p> <p>13.A.3c Explain what is similar and different about observational and experimental investigations</p>	<p>13.7.01</p> <p>13.7.02</p> <p>13.7.03</p> <p>13.7.04</p> <p>13.7.05</p> <p>13.7.06</p>					
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## 8th Grade Science Framework

### State Goal and Percentage: 12 – Integrated Science 60%

**State Goal 12: Understand the fundamental concepts, principles and interconnections of the life, physical, and earth/space sciences**

**Standard and Skills: 12E Earth Science – 10%**

**Stage: H**

Standard	Assessment Objective	Instruction & Assessment		Cross curricular connection		Additional Resources
		Instruction and guided practice	Assessment	Reading Assessment number	Math Assessment number	
12.E.3a Analyze and explain large-scale dynamic forces, events, and processes that affect the Earth's land, water and atmospheric systems  12.E.3b Describe interactions between solid earth, oceans, atmosphere and organisms that have resulted in ongoing changes of Earth  12.E.3c Evaluate the biodegradability of renewable and nonrenewable natural resources	12.7.70	Chapter 12	Chapter quizzes	1.8.08	10.8.01	Other books, presentations, etc.  Prentice Hall Earth Science (mid Oct. – Jan)
	12.7.71	Chapter 13	Chapter tests	1.8.10 1.8.17	10.8.03	
	12.7.72	Chapter 15	Biome Poster	1.8.19 1.8.20 1.8.21		
	12.7.73	Chapter 16	Travel Brochure of Ring of Fire	1.8.22 1.8.23		
	12.7.74	Sugar Cube in Baby food Jar	Japan's Earthquake			
	12.7.75		Volcano Verdict Lab			
	12.7.76		Layered Book			
	12.7.77					
12.7.78						

	<p>12.7.79</p> <p>12.7.80</p> <p>12.7.82</p> <p>12.7.83</p> <p>12.7.100</p>		<p>Mapping Earthquakes and Volcanoes</p>			
<p>13.A.3a Identify and reduce potential hazards in science activities</p> <p>13.A.3b Analyze historical and contemporary cases in which the work of science has been affected by both valid and biased scientific practices</p> <p>13.A.3c Explain what is similar and different about observational and experimental investigations</p> <p>13.B.3a Identify and explain ways that scientific knowledge and economics drive technological development</p>	<p>13.7.01</p> <p>13.7.02</p> <p>13.7.03</p> <p>13.7.04</p> <p>13.7.05</p> <p>13.7.06</p>					

<p>13.B.3b Identify important contributions to science and technology that have been made by individuals and groups from various cultures</p> <p>13.B.3c Describe how occupations use scientific and technological knowledge and skills</p> <p>13.B.3d Analyze the interaction of resource acquisition, technological development and ecosystem impact.</p>						
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## 8th Grade Science Framework

### State Goal and Percentage: 12 Integrated Science 60%

**State Goal 12: Understand the fundamental concepts, principles and interconnections of the life, physical, and earth/space sciences**

**Standard and Skills: 12F Astronomy – 10%**

**Stage: G**

Standard	Assessment Objective	Instruction & Assessment		Cross curricular connection		Additional Resources
		Instruction and guided practice	Assessment	Reading Assessment number	Math Assessment number	
12.F.3a Simulate, analyze and explain the affects of gravitational force in the solar system	12.7.91 12.7.92 12.7.93 12.7.94 12.7.95	Chapter 25 – Atomic Energy	Concept Mapping Blocking radiation demonstration	1.8.17 1.8.18	6.8.16 7.8.06	Other books, internet resources, etc.  (est. Jan. – Mar.)
12.F.3b Describe the organization and physical characteristics of the solar system	12.7.96 12.7.97 12.7.98 12.7.99 12.7.100 12.7.101		Chapter Quiz Chapter Test			

<p>13.A.3a Identify and reduce potential hazards in science activities</p> <p>13.A.3b Analyze historical and contemporary cases in which the work of science has been affected by both valid and biased scientific practices</p> <p>13.A.3c Explain what is similar and different about observational and experimental investigations</p> <p>13.B.3a Identify and explain ways that scientific knowledge and economics drive technological development</p> <p>13.B.3b Identify important contributions to science and technology that have been made by individuals and groups from various cultures</p> <p>13.B.3c Describe how occupations use scientific and technological knowledge and skills</p>	<p>13.7.01</p> <p>13.7.07</p> <p>13.7.08</p> <p>13.7.09</p> <p>13.7.13</p>					
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13.B.3d Analyze the interaction of resource acquisition, technological development and ecosystem impact.						
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