

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #:	grade	topic	Performance Standard	student text	detail	investigation	detail
Content Stand				pg		pg	
A.12.01 Science Connections	by the end of grade 12		Apply the underlying themes of science to develop defensible visions of the future	20	how will speed change?	21	construct reasonable explanation based on data
				24	predicting speed from a graph	35	study data and determine importance of height on speed of marble
				42	predict the speed of a car	45	analyze data and explain a rule
						76	use data to predict best string length for a pendulum clock
						121	use graph to predict mass of six objects
						156	make predictions about solubility

**Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual**

Standard #:	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
A.12.02 Science Connections	by the end of grade 12		Show how conflicting assumptions about science themes lead to different opinions and decisions about evolution, health, population, longevity, education,...	10 20 73	process of reviewing hypothesis explained explain your reasoning impact of Da Vinci's work	6 9 35 37 39 39 39 39 47 77 77	asking questions and learning about natural world present conclusions to the class what evidence is there in support of your hypothesis? describe the flow of energy based on experimental graph give a brief presentation to the class critique group's explanation of energy transformations review energy theory in context of everyday scenarios analyze energy transformations in different scenarios present and defend an explanation show how energy loss data could be applied to designing a real clock compare law of conservation of energy to motion of pendulum

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
						145	present findings and methods used
						151	present results to the class
						151	review your hypothesis
						167	did you prove or disprove your hypothesis?
A.12.03 Science Connections	by the end of grade 12		Give examples that show how partial systems, models, and explanations are used to give quick and reasonable solutions that are accurate enough for basic needs	20	how will speed change?	21	construct reasonable explanation based on data
				24	predicting speed from a graph	35	study data and determine importance of height on speed of marble
				42	predict the speed of a car	45	analyze data and explain a rule
						76	use data to predict best string length for a pendulum clock
						121	use graph to predict mass of six objects
						156	make predictions about solubility

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #:	grade	topic	Performance Standard	student text	detail	investigation	detail
Content Stand				pg		pg	
A.12.04 Science Connections	by the end of grade 12		Construct arguments that show how conflicting models and explanations of events can start with similar evidence	20	explain your reasoning	9 21 35 37 39 45 47 145 151	present conclusions to the class construct reasonable explanation based on data study data and determine importance of height on speed of marble describe the flow of energy based on experimental graph give a brief presentation to the class analyze data and explain a rule present and defend an explanation present findings and methods used present results to the class

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
A.12.05 Science Connections	by the end of grade 12		Show how the ideas and themes of science can be used to make real-life decisions about careers, work places, life-styles, and use of resources	20	explain your reasoning	6	asking questions and learning about natural world
				23	why make models?	9	present conclusions to the class
				24	what is a scientific model?	16	2nd law
				24	scientific models	20	force and motion with car and ramp
				34	Newton's research impacted mathematics	37	describe the flow of energy based on experimental graph
				48	Newton's laws explained and applied	39	study energy transformations in daily life scenarios
				50	Newton's second law applied	39	give a brief presentation to the class
				58	Newton on a skateboard	47	present and defend an explanation
				73	impact of technology	71	did draining the batteries affect motor speed?
				78	describe a problem that would be solved by an engineer	71	which motor gave the highest speed and why?
				120	circuits in your house	71	testing a motor for performance
				135	circuit board explained	145	present findings and methods used
				214	ultrasound technology	151	present results to the class
				214	ultrasound technology	163	consider a vehicle's fuel economy
				220	voice recognition technology		
				220	voice recognition technology		
				294	invention of Kevlar		
				294	invention of Kevlar		
				333	problems with disposing of plastics		

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
				355	recycling tires	163	economic impact of end-product of combustion reaction
				356	recycling discarded tires		
				364	petroleum	163	evaluating choice of favorite car
				368	limiting reactants		
				379	research fuel cells	163	research how trees offset accumulation of CO ₂
				379	research environmental impact of fuel cells	163	can trees compensate for manmade CO ₂ from vehicles and industry?
				379	hydrogen-powered cars and the environment	163	too much CO ₂
				379	research economic impact of fuel cells	172	perform water quality tests
				379	research fuel cells	172	save water for houseplants
				392	storage of nuclear waste		
				395	fossil fuels	174	wise use of water supply
				400	economic impact of pollution	175	maintaining water supply quality
				400	clean air act of 1970	178	investigate effect of acid rain on microorganisms
				400	economic impact of reducing air pollution		
				400	problems caused by airborne pollutants		
				421	wise use of water		
				425	water cycle and conservation		
				430	water usage and quality		
				444	acid rain explained		

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #:	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
Content Stand							
				448	research the issue of acid rain		
				448	research economic impact of producing gases that cause acid rain		

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
A.12.06 Science Connections	by the end of grade 12		Identify and, using evidence learned or discovered, replace inaccurate personal models and explanations of science-related events	10 58 78 120	process of reviewing hypothesis explained Newton on a skateboard describe a problem that would be solved by an engineer circuits in your house	6 21 35 35 39 39 39 39 45 77 77	asking questions and learning about natural world construct reasonable explanation based on data what evidence is there in support of your hypothesis? study data and determine importance of height on speed of marble study energy transformations in daily life scenarios critique group's explanation of energy transformations review energy theory in context of everyday scenarios analyze energy transformations in different scenarios analyze data and explain a rule show how energy loss data could be applied to designing a real clock compare law of conservation of energy to motion of pendulum

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
						151 review your hypothesis 151 does your experiment agree with law of conservation of mass? 163 evaluating choice of favorite car 167 did you prove or disprove your hypothesis?	

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
A.12.07 Science Connections	by the end of grade 12		Re-examine the evidence and reasoning that led to conclusions drawn from investigations, using the science themes	10	process of reviewing hypothesis explained	6	predict which car will move fastest
				20	how will speed change?	7	test the effect of one other variable
				24	predicting speed from a graph	21	construct reasonable explanation based on data
				42	predict the speed of a car	27	think about the variables
						34	where does the marble move the fastest?
						35	what evidence is there in support of your hypothesis?
						35	study data and determine importance of height on speed of marble
						39	analyze energy transformations in different scenarios
						39	review energy theory in context of everyday scenarios
						39	critique group's explanation of energy transformations
						43	how did A and B tapes acquire different charge?
						45	analyze data and explain a rule

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
						75	investigate variables that affect the period of a pendulum
						76	use data to predict best string length for a pendulum clock
						77	show how energy loss data could be applied to designing a real clock
						77	compare law of conservation of energy to motion of pendulum
						121	use graph to predict mass of six objects
						151	explain how hypothesis compares to results
						151	does your experiment agree with law of conservation of mass?
						151	review your hypothesis
						151	do the data support the hypothesis
						151	perform the experiment you designed
						156	make predictions about solubility
						157	add new rules to list based on findings
						167	what was happening at molecular level?

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
						167	did you prove or disprove your hypothesis?
B.12.01 Nature of Science	by the end of grade 12		Show how cultures and individuals have contributed to the development of major ideas in the earth and space, life and environmental, and physical sciences	34 45 54 105 107 312 320 391 393	Aristotle vs. Newton Newton's Laws of Motion Newton and the force of gravity Benjamin Franklin Charles-Augustin Coulomb contributions of Fermi the quests of alchemists scientific discovery and the atomic age contributions of Marie and Pierre Curie		
B.12.02 Nature of Science	by the end of grade 12		Identify the cultural conditions that are usually present during great periods of discovery, scientific development, and invention	73 320 391	impact of Da Vinci's work the quests of alchemists scientific discovery and the atomic age	6	asking questions and learning about natural world

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
B.12.03 Nature of Science	by the end of grade 12		Relate the major themes of science to human progress in understanding science and the world	23	why make models?	70	using engineering design cycle
				24	what is a scientific model?		
				24	scientific models		
				34	Aristotle vs. Newton		
				45	Newton's Principia		
				45	Newton's Laws of Motion		
				54	Newton and the force of gravity		
				55	Newton and the apple legend		
				73	impact of Da Vinci's work		
				73	relationship between science and technology		
				73	Leonardo DaVinci		
				86	James Watt		
				105	Benjamin Franklin		
				107	Charles-Augustin Coulomb		
				110	research Franklin's electricity experiments		
				115	Volta's batteries		
				131	Georg Ohm's work with circuits		
				160	Faraday's contributions		
				214	ultrasound technology		

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
				220	voice recognition technology		
				294	invention of Kevlar		
				312	Dalton's contributions		
				312	contributions of Fermi		
				320	the quests of alchemists		
				321	contributions of Mendeleev		
				321	Mendeleev's periodic table		
				332	Linus Pauling and electronegativities		
				363	Antoine Lavoisier		
				370	research Lavoisier's contributions		
				391	scientific discovery and the atomic age		
				393	contributions of Marie and Pierre Curie		
				393	accomplishments of Marie Curie		
				393	Marie and Pierre Curie		
				400	clean air act of 1970		
				456	contributions of Joule		

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
B.12.04 Nature of Science	by the end of grade 12		Show how basic research and applied research contribute to new discoveries, inventions, and applications	23	why make models?	6	asking questions and learning about natural world
				24	what is a scientific model?		
				24	scientific models	70	using engineering design cycle
				34	Newton's research impacted mathematics	130	investigate Rutherford's gold foil experiment
				34	Aristotle vs. Newton		
				45	Newton's Laws of Motion		
				45	Newton's Principia		
				54	Newton and the force of gravity		
				55	Newton and the apple legend		
				73	impact of Da Vinci's work		
				73	impact of technology		
				73	Leonardo DaVinci		
				73	relationship between science and technology		
				86	James Watt		
				105	Benjamin Franklin		
				107	Charles-Augustin Coulomb		
				110	research Franklin's electricity experiments		
				115	Volta's batteries		
				131	Georg Ohm's work with circuits		

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
				160	Faraday's contributions		
				214	ultrasound technology		
				220	voice recognition technology		
				294	invention of Kevlar		
				312	Dalton's contributions		
				312	contributions of Fermi		
				313	development of atomic theory		
				321	contributions of Mendeleev		
				321	Mendeleev's periodic table		
				324	research and create a poster to illustrate development of atomic model		
				332	Linus Pauling and electronegativities		
				363	Antoine Lavoisier		
				370	research Lavoisier's contributions		
				393	Marie and Pierre Curie		
				393	accomplishments of Marie Curie		
				393	contributions of Marie and Pierre Curie		

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
				395	impact of industrial revolution		
				400	clean air act of 1970		
				456	contributions of Joule		

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
B.12.05 Nature of Science	by the end of grade 12		Explain how science is based on assumptions about the natural world and themes that describe the natural world	20	how will speed change?	6	asking questions and learning about natural world
				24	predicting speed from a graph	13	graph distance vs. time
				24	making a graph	15	construct a quantitative graphical model
				24	interpretations of patterns in data	15	interpret a speed vs. time graph
				26	creating graphs	21	construct reasonable explanation based on data
				27	reading a graph	35	study data and determine importance of height on speed of marble
				41	make a graph	37	organize data into a graph of speed vs. height
				42	predict the speed of a car	39	study energy transformations in daily life scenarios
				58	Newton on a skateboard	45	analyze data and explain a rule
				73	relationship between science and technology	51	graph voltage vs. current
				78	describe a problem that would be solved by an engineer	70	using engineering design cycle
				78	analyze lever diagram	76	use data to predict best string length for a pendulum clock
				120	circuits in your house	121	use graph to predict mass of six objects
						121	graph mass vs. volume

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
						147	organize observations into a category table
						151	does your experiment agree with law of conservation of mass?
						156	make predictions about solubility
						181	construct a graphical model
						183	construct a temperature vs. time graph

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
C.12.01 Science Inquiry 12	by the end of grade		When studying science content, ask questions suggested by current social issues, scientific literature, and observations of phenomena, build hypotheses that might answer some of these questions, ...	135	circuit board explained	52	the cost of using electrical appliances
				172	generating electric power	163	economic impact of end-product of combustion reaction
				333	problems with disposing of plastics	163	too much CO ₂
				355	recycling tires	163	consider a vehicle's fuel economy
				356	recycling discarded tires	163	research how trees offset accumulation of CO ₂
				364	petroleum	163	can trees compensate for manmade CO ₂ from vehicles and industry?
				368	limiting reactants	172	save water for houseplants
				379	research environmental impact of fuel cells	172	perform water quality tests
				379	research economic impact of fuel cells	174	wise use of water supply
				379	research fuel cells	175	maintaining water supply quality
				379	research fuel cells	178	investigate effect of acid rain on microorganisms
				379	hydrogen-powered cars and the environment		
				391	impact of nuclear energy		
				391	nuclear vs. fossil fuels		
				392	storage of nuclear waste		
				395	fossil fuels		
				400	problems caused by airborne pollutants		
				400	economic impact of pollution		
				400	economic impact of reducing air pollution		

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
				400	reducing pollution		
				421	wise use of water		
				425	water cycle and conservation		
				430	water usage and quality		
				444	acid rain explained		
				444	impact of using fossil fuels		
				448	research the issue of acid rain		
				448	research economic impact of producing gases that cause acid rain		

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #:	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
C.12.02 Science Inquiry	12	by the end of grade	Identify issues from an area of science study, write questions that could be investigated, review previous research on these questions, and design and conduct responsible and safe investigations to help answer the questions	7	experimentation begins with a question	4	difference between precise and accurate data
				9	steps in the scientific method	6	how do we ask questions and get answers from nature?
				10	forming a hypothesis	6	predict which car will move fastest
				10	process of reviewing hypothesis explained	6	electronic timer and release technique
				10	the research question and hypothesis	7	record time interval
				11	control and experimental variables	7	doing a controlled experiment
				12	importance of reliable and accurate data collection	7	design your own experiment
				19	which group did the best experiment?	7	test the effect of one other variable
				19	design your own experiment	7	compare results with hypothesis
				19	design your own experiment	7	perform your own experiment
				20	finding variability in data	9	design three experiments using car and ramp
				20	how will speed change?	9	conduct three experiments with appropriate equipment
				24	predicting speed from a graph	9	collect speed data
				26	independent and dependent variables	9	design three experiments and choose equipment
				28	identifying cause and effect relationships		
				41	identify cause and effect		

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
				42	predict the speed of a car	9	design three experiments and choose technology
				42	devise an experiment	10	conduct car/ramp experiment
				73	impact of Da Vinci's work	10	selecting ramp and photogates
				79	look at force data and decide the usefulness of a machine	12	select equipment and set up experiment
				288	find the thickness of a single card	16	investigate Newton's 2nd law
						16	decide how to vary the force on the car for this experiment
						17	record times
						18	use data to describe relationship between force and motion
						18	evaluate graphs as to whether or not they show relationships between variables
						19	use data to infer correct relationship between variables
						20	safety tip for car/ramp setup
						21	evaluate percent change for data collected

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
						21	choose independent and dependent variables for graph
						21	determine effect of increasing mass
						21	construct reasonable explanation based on data
						21	think about percent change
						24	collect weight data
						24	ropes and pulley safety
						26	what variables can be changed?
						26	safety tip for hanging weights from lever
						27	think about the variables
						27	recognize variables
						30	rigging block and tackle
						30	interpret block and tackle data
						34	where does the marble move the fastest?
						34	investigate motion on a rollercoaster
						35	what evidence is there in support of your hypothesis?

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
						35	study data and determine importance of height on speed of marble
						36	collect precise speed and height data
						39	analyze energy transformations in different scenarios
						39	critique group's explanation of energy transformations
						39	review energy theory in context of everyday scenarios
						40	electrical safety
						40	choose circuit parts to light a bulb
						43	how did A and B tapes acquire different charge?
						44	short circuit safety warning
						45	analyze data and explain a rule
						56	short circuit safety warning
						58	short circuit safety warning
						75	evaluate statistical significance

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
						75	perform self-designed experiment
						75	collect mass and amplitude data
						75	plan three experiments to determine which variable affects the period of a pendulum
						75	investigate variables that affect the period of a pendulum
						75	design pendulum experiment
						76	use data to predict best string length for a pendulum clock
						77	compare law of conservation of energy to motion of pendulum
						77	show how energy loss data could be applied to designing a real clock
						93	decision trees and the advantage of doing multiple trials
						121	use graph to predict mass of six objects
						141	build models of Na and Cl and use them to explain bonding

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
						145	plan a procedure and select necessary equipment
						145	carry out procedure and select equipment
						146	safety in the lab
						150	chemistry safety
						151	perform the experiment you designed
						151	plan procedures and select materials
						151	select materials from list
						151	review your hypothesis
						151	do the data support the hypothesis
						151	design experiment to find out if mass is conserved
						151	explain how hypothesis compares to results
						156	make predictions about solubility
						157	add new rules to list based on findings
						158	wear goggles and apron
						164	safety equipment
						166	what three factors influence dissolving rate?

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
						166	which factor will produce fastest dissolving rate?
						166	which method will give fastest dissolving rate?
						167	what was happening at molecular level?
						167	evaluate method based on data
						167	did you prove or disprove your hypothesis?
						167	collect time data and record observations
						168	hot water safety
						172	safety tip for water testing
						174	visit local water supply and perform testing
						175	safety tip for testing local surface water
						177	research pH indicators
						180	thermometer safety
						182	heat safety
						186	thermometer safety
						192	heat safety
						198	heat safety
						198	which type of food contains the most energy?
						200	safely using rubber bands

**Correlation to Wisconsin Model Academic Standards for Science
 Foundations of Physical Science Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
						201	research electricity generation
C.12.03 Science Inquiry	12	by the end of grade	Evaluate the data collected during an investigation, critique the data-collection procedures and results, and suggest ways to make any needed improvements	24 26 41	making a graph creating graphs make a graph	13 15 37 51 70 71 71 71 121 147 151 167 181 183	graph distance vs. time construct a quantitative graphical model organize data into a graph of speed vs. height graph voltage vs. current proposing and comparing different electric motor designs testing a motor for performance which motor gave the highest speed and why? did draining the batteries affect motor speed? graph mass vs. volume organize observations into a category table do the data support the hypothesis what was happening at molecular level? construct a graphical model construct a temperature vs. time graph

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
C.12.04 Science Inquiry	by the end of grade 12		During investigations, choose the best data-collection procedures and materials available, use them competently, and calculate the degree of precision of the resulting data	11	controlling variables in experiments	4	difference between precise and accurate data
				12	importance of reliable and accurate data collection	6	electronic timer and release technique
				19	did you run a controlled experiment?	7	what variables should be controlled?
				20	what factors could explain the variability in their data?	7	record time interval
						9	collect speed data
				24	making a graph	11	calculate % error
				26	creating graphs	13	graph distance vs. time
				41	make a graph	14	record three different time intervals
						15	construct a quantitative graphical model
						17	record times
						24	collect weight data
						25	collect force data
						27	write down the number of weights you use
						36	collect precise speed and height data
						37	organize data into a graph of speed vs. height
						51	graph voltage vs. current
						71	testing a motor for performance

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
						71	did draining the batteries affect motor speed?
						71	which motor gave the highest speed and why?
						75	collect mass and amplitude data
						76	calculate % error
						121	graph mass vs. volume
						129	control the height of the liquid
						147	organize observations into a category table
						150	record data as you perform experiment
						165	what does the word "control" mean?
						165	why was plain water tested?
						167	collect time data and record observations
						181	construct a graphical model
						183	construct a temperature vs. time graph

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
C.12.05 Science Inquiry	12	by the end of grade	Use the explanations and models found in the earth and space, life and environmental, and physical sciences to develop likely explanations for the results of their investigations	20 24 31 38 42 42	how will speed change? predicting speed from a graph determining slope of a line determining slope of a line analyze a speed/distance graph predict the speed of a car	6 11 11 15 18 21 25 27 35 35 39 45 45 76	compare results with other groups analyze speed change of car graph speed vs. position calculating acceleration from the slope of the line study data table for relationship between force and motion construct reasonable explanation based on data analyze block and tackle data analyze lever equilibrium data study data and determine importance of height on speed of marble does data support hypothesis? review energy theory in context of everyday scenarios did battery voltage change? analyze data and explain a rule analyze pendulum data

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
						76	use data to predict best string length for a pendulum clock
						121	use graph to predict mass of six objects
						147	students analyze chemical change lab results
						151	does your experiment agree with law of conservation of mass?
						151	do the data support the hypothesis
						156	make predictions about solubility
						167	what was happening at molecular level?

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #:	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
C.12.06 Science Inquiry	12	by the end of grade	Present the results of investigations to groups concerned with the issues, explaining the meaning and implications of the results, and answering questions in terms the audience can understand	20	explain your reasoning		
							vocabulary is presented in context of investigations
						9	present conclusions to the class
						37	describe the flow of energy based on experimental graph
						39	give a brief presentation to the class
						47	present and defend an explanation
						145	present findings and methods used
						145	present findings to the class
						151	present results to the class

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
C.12.07 Science Inquiry	12	by the end of grade	Evaluate articles and reports in the popular press, in scientific journals, on television, and on the Internet, using criteria related to accuracy, degree of error, sampling, treatment of data, and other standards of experimental design	10	the research question and hypothesis	6	how do we ask questions and get answers from nature?
				11	controlling variables in experiments	6	compare results with other groups
				19	did you run a controlled experiment?	7	what variables should be controlled?
				19	which group did the best experiment?	9	present conclusions to the class
				20	what factors could explain the variability in their data?	11	analyze speed change of car
				20	explain your reasoning	11	graph speed vs. position
				24	making a graph	11	calculate % error
				24	interpretations of patterns in data	13	graph distance vs. time
				26	creating graphs	15	construct a quantitative graphical model
				27	reading a graph	15	interpret a speed vs. time graph
				41	make a graph	15	discuss and test ideas with your group
				42	analyze a speed/distance graph	18	study data table for relationship between force and motion
				78	analyze lever diagram	18	evaluate graphs as to whether or not they show relationships between variables
						19	explain how you arrived at your answer

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
						21	evaluate percent change for data collected
						25	analyze block and tackle data
						27	analyze lever equilibrium data
						29	discuss what you learned about gears
						35	does data support hypothesis?
						37	organize data into a graph of speed vs. height
						37	describe the flow of energy based on experimental graph
						39	give a brief presentation to the class
						45	did battery voltage change?
						47	present and defend an explanation
						47	discuss an explanation with your group
						51	graph voltage vs. current
						75	evaluate statistical significance
						76	calculate % error
						76	analyze pendulum data
						121	graph mass vs. volume

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
						129	find average velocity
						129	control the height of the liquid
						129	explain your answer and justify
						145	present findings to the class
						145	present findings and methods used
						147	organize observations into a category table
						147	students analyze chemical change lab results
						151	present results to the class
						151	does your experiment agree with law of conservation of mass?
						165	what does the word "control" mean?
						165	why was plain water tested?
						167	average dissolving rate
						167	evaluate method based on data
						177	research pH indicators
						181	construct a graphical model

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
						183	construct a temperature vs. time graph
						201	research electricity generation
D.12.01 Physical Science	by the end of grade 12	Structure of Atoms and Matter	Describe atomic structure and the properties of atoms, molecules, and matter during physical and chemical interactions	311	protons/neutrons/electrons	132	building atom models
				311	location/size/charge of subatomic particles	133	location of electrons in atom
				318	proton/electron attraction	133	protons and neutrons
				353	physical and chemical changes and digestion	136	model stable and neutral atoms
				354	new substances are formed when a chemical change occurs	137	build atomic models
				355	physical and chemical changes in tire recycling	140	review subatomic particles
				357	chemical reactions involve rearrangement of atoms	146	investigate and observe chemical and physical changes in the lab
				372	determine if changes are chemical or physical	157	predict the products of double displacement reactions

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #:	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
D.12.02 Physical Science	by the end of grade 12	Structure of Atoms and Matter	Explain the forces that hold the atom together and illustrate how nuclear interactions change the atom	387	fusion and fission explained	136	ions
				388	nuclear vs chemical reactions	136	strong force
				389	strong nuclear force	138	nuclear reactions
				389	forces in the nucleus	138	fusion and fission
				389	electromagnetic force	141	whan an atom ionizes
				393	carbon dating	160	radioactive decay
				393	radioisotopes in science and medicine	160	how do you simulate nuclear decay?
				400	research pros and cons of nuclear technology	161	research pros and cons of uses for radioactive elements

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #:	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
D.12.03 Physical Science	by the end of grade 12	Structure of Atoms and Matter	Explain exchanges of energy in chemical interactions and exchange of mass and energy in atomic/nuclear reactions	321	groups of elements and valence shells	141	build model of Na and Cl atoms and explain why they bond to form a molecule
				329	periodic table columns and valence electrons	142	arrangement of electrons and groups of elements
				330	bonding and periodic table position	147	feel the heat generated by chemical reaction
				332	periodic table and electronegativities	158	measure energy changes in 3 different reactions
				335	periodic table and oxidation numbers	158	investigate energy changes in chemical reactions
				357	combustion reaction		
				357	chemical reactions involve rearrangement of atoms		
				361	heartburn reaction		
				363	history of law of conservation of mass		
				381	exothermic reactions and MREs		
				382	endothermic reactions and cold packs		

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
D.12.04 Physical Science	by the end of grade 12	Chemical Reactions	Explain how substances, both simple and complex, interact with one another to produce new substances	278	compounds are composed of elements	140	why do atoms form chemical bonds?
				330	ionic bonds	142	why do atoms combine in certain ratios?
				331	covalent bonds	143	classify ionic compounds
				332	distinguishing between ionic and covalent bonds	143	ionic compounds
				343	mole quantities	144	show ratios in which elements combine to form a compound
				354	new substances are formed when a chemical change occurs	150	investigate conservation of mass in effervescent tablet reaction
				357	chemical reactions involve rearrangement of atoms	156	predict products in a double displacement reaction
				357	combustion reaction	156	investigate double displacement reactions
				361	heartburn reaction	157	predict the products of double displacement reactions
				364	formation of petroleum is a very slow chemical reaction	158	measure energy changes in 3 different reactions
				364	carbon chains	162	carbon reactions and the environment
				375	synthesis or addition reactions		
				376	decomposition reactions		
				377	double displacement reactions		
				377	single displacement reactions		

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
D.12.05 Physical Science	by the end of grade 12	Chemical Reactions	Identify patterns in chemical and physical properties and use them to predict likely chemical and physical changes and interactions	278	compounds are composed of elements	133	using the periodic table
				294	development of Kevlar brand fiber	140	why do atoms form chemical bonds?
				320	groups of elements	142	why do atoms combine in certain ratios?
				330	ionic bonds	143	classify ionic compounds
				331	covalent bonds	143	predict chemical formulas
				332	distinguishing between ionic and covalent bonds	144	show ratios in which elements combine to form a compound
				336	writing a chemical formula	144	show ratios in which elements combine to form a compound
				336	writing chemical formulas		
				338	summary of chemical formula writing rules	145	determine empirical formula
				343	mole quantities	146	investigate and observe chemical and physical changes in the lab
				343	mole quantities		
				353	physical and chemical changes and digestion	149	balance these equations
				354	new substances are formed when a chemical change occurs	155	calculating product yield
				355	physical and chemical changes in tire recycling	156	investigate double displacement reactions
				368	predicting amount of product	158	investigate energy changes in chemical reactions
				371	which of the equations is balanced?	158	measure energy changes in 3 different reactions
				372	determine if changes are chemical or physical		

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
				375	synthesis or addition reactions		
				376	decomposition reactions		
				377	double displacement reactions		
				377	single displacement reactions		
				381	exothermic reactions and MREs		
				382	endothermic reactions and cold packs		
				421	why water is a nearly universal solvent		
D.12.06 Physical Science	by the end of grade 12	Chemical Reactions	Through investigations, identify the types of chemical interactions, including endothermic, exothermic, oxidation, photosynthesis, and acid/base reactions	354	new substances are formed when a chemical change occurs	158	investigate energy changes in chemical reactions
				357	chemical reactions involve rearrangement of atoms	158	measure energy changes in 3 different reactions
				381	exothermic reactions and MREs	176	measure pH
				382	endothermic reactions and cold packs	176	investigate acids and bases
				437	concentration of ions and pH	176	measure pH of everyday solutions
				440	examples of acid and base chemistry		
				443	pH and blood		

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
D.12.07 Physical Science	by the end of grade 12	Motions and Forces	Qualitatively and quantitatively analyze changes in the motion of objects and the forces that act on them and represent analytical data both algebraically and graphically	13	speed is relative	8	calculating speed
				14	how to calculate speed	9	collect data and calculate speed of car
				15	compare and contrast speed and velocity	10	calculate speed of the car
				18	what is the speed of an object that is standing still?	11	draw best fit curve
				20	find speed of bumblebee	12	model the car's motion graphically
				20	calculate speed of car	12	find speed of car at different positions
				24	accurate speed measurements	12	calculate speed of moving car
				25	conceptual models of motion	13	draw best fit curve
				26	drawing a best fit curve	13	make a position vs. time graph
				29	position vs. time graph discussion	14	calculate acceleration of car on ramp
				30	position vs. time graphs	14	exploring acceleration on a ramp
				32	average speed vs. instantaneous	14	calculate speed of car at two places on the ramp
				32	average speed discussed	14	acceleration is the rate at which speed changes
				33	understanding acceleration	15	changes in motion can be represented graphically
				35	how to calculate acceleration	15	make a speed vs. time graph
				36	examples of acceleration	16	2nd law
				37	speed vs. time graph discussion	16	thinking about force

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
				37	speed vs. time graphs	16	unbalanced forces and acceleration of car
				41	find acceleration of car	17	calculate speed of car
				42	calculate speed from distance/time graph	17	explore 2nd law and acceleration
				45	Newton's second law summarized	19	discover 2nd law of motion
				45	Newton's first law summarized	19	find correct relationship between force mass and acceleration
				45	Newton's third law summarized	20	force and motion with car and ramp
				46	force has potential to change motion	20	investigate effect of gravity on motion
				47	weight vs. mass	20	weight vs. mass
				48	Newton's laws explained and applied	21	effect of friction on the car
				48	Newton's first law in detail	22	car and ramp and Newton's 3rd law
				49	force is related to acceleration	23	using 3rd law to explain common phenomena
				49	Newton's second law in detail	24	measure force in newtons
				49	link between force and acceleration	25	discover mechanical advantage of ropes and pulleys
				50	Newton's second law applied	27	changing force and distance on a lever
				51	balanced and unbalanced forces	27	set up a lever that has mechanical advantage
				51	net force explained		
				52	gravity depends on mass		

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
				52	the effect of gravity	30	exploring force and distance with ropes and pulleys
				53	acceleration due to gravity		
				53	how to calculate weight	36	find speed of marble
				54	Newton's law of universal gravitation		
				55	calculating gravitational force between objects		
				56	friction explained		
				59	Newton's third law in detail		
				60	how to calculate momentum		
				60	law of conservation of momentum		
				64	research effect of friction on human joints		
				64	solving problems using $f=ma$		
				64	calculate momentum		
				67	how simple machines manipulate forces		
				69	newtons and pounds		
				69	how to calculate mechanical advantage		
				70	mechanical advantage of block and tackle		
				71	how a lever works		

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
				71	pliers as an example of a lever		
				71	parts of a lever		
				71	the human body and simple machines		
				72	mechanical advantage of a lever		
				75	how gears work		
				78	set up a lever with MA greater than 1		
				78	design a toothbrush		
				79	calculate mechanical advantage		
				79	analyze block and tackle		
				79	analyze pulleys with different numbers of supporting strings		
				80	analyze block and tackle machine on a sailboat		
				80	analyze wheelbarrow		
				80	analyzing the jaw as a lever		
				80	analyze the human jaw as a simple machine		

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #:	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
D.12.08 Physical Science	by the end of grade 12	Motions and Forces	Understand the forces of gravitation, the electromagnetic force, intermolecular force, and explain their impact on the universal system	48	Newton's laws explained and applied	62	describing forces that magnets exert on each other
				50	Newton's second law applied	64	testing materials to see if they are affected by magnets
				52	gravity depends on mass	66	build an electromagnet
				54	Newton's law of universal gravitation	66	compare electromagnets and permanent magnets
				55	calculating gravitational force between objects	67	find out what happens to strength of electromagnet when current is increased
				106	electrical force is incredibly strong!	134	investigating visible light with a spectrometer
				106	electrical forces	136	strong force
				159	magnetism explained		
				163	understanding magnetic fields		
				164	what is an electromagnet?		
				166	increased current vs. strength of magnetic field		
				166	building an electromagnet		
				195	waves transmit energy		
				196	waves are all around us		
				237	microwave ovens		
				237	radio and television signals		
				237	visible light and the electromagnetic spectrum		

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
				237	light waves and the electromagnetic spectrum		
				250	identify uses of electromagnetic waves		
				272	identify uses of electromagnetic waves		
				389	electromagnetic force		
				389	forces in the nucleus		
				389	strong nuclear force		
				474	energy and radiation relationships		

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
D.12.09 Physical Science	by the end of grade 12	Motions and Forces	Describe models of light, heat, and sound and through investigations describe similarities and differences in the way these energy forms behave	88	potential and kinetic energy explained	37	investigating conservation of energy with rollercoaster
				90	conservation of energy explained	38	explore energy transformations
				91	understand basic forms of energy	38	conservation of energy and energy transformations
				91	energy conversions	39	identify type of energy involved
				92	energy transformations and conservation	83	find speed of a wave
				93	different forms of energy described	83	measure speed of a wave pulse
				96	prove that energy is conserved	86	investigate frequency and wavelength
				195	waves transmit energy	86	adjust frequency of a standing wave
				198	frequency and wavelength and amplitude	90	what is sound and how do we hear it?
				213	how the ear works	90	investigate human perception of sound
				215	properties of sound waves	94	does sound behave like other waves?
				217	loudness and decibels	119	adding heat energy to melt an ice cube
				219	frequency of sound and pitch	119	investigate temperature and energy transfer in melting process
				221	importance of wavelength of sound waves	134	investigating visible light with a spectrometer
				222	effect of temperature on speed of sound wave		
				222	effect of medium on speed of sound wave		

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
				237	light waves and the electromagnetic spectrum	147	feel the heat generated by chemical reaction
				237	visible light and the electromagnetic spectrum	182	relationship between heat and temperature
				242	properties of light waves	188	specific heat and conservation of energy
				451	increasing temperature means increasing motion of molecules	190	investigate conduction through all states of matter
				451	temperature and kinetic energy	192	investigate convection in liquids
				455	temperature and thermal energy and heat	194	investigate radiation emitted by liquids
				468	heat transfer through air	194	investigate radiation emitted by solids
				468	densely packed solids are good conductors of heat		
				470	warming hands over candle		
				470	convection currents and weather		
				472	convection currents in water		
				474	energy and radiation relationships		
				474	electromagnetic radiation		
				476	solid road surface emits radiation		
				478	apply knowledge of heat transfer to different situations		

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
				481	global warming		
				481	global warming and heat transfer by radiation		
				491	heat generated in mechanical systems		
				493	using heat to do mechanical work		

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #:	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
D.12.10 Physical Science	by the end of grade 12	Conservation of Energy and the Increase in Disorder	Using the science themes, illustrate the law of conservation of energy during chemical and nuclear reactions	88	potential and kinetic energy explained	37	investigating conservation of energy with rollercoaster
				90	conservation of energy explained	38	explore energy transformations
				91	understand basic forms of energy	38	conservation of energy and energy transformations
				91	energy conversions		
				92	energy transformations and conservation	39	identify type of energy involved
				93	different forms of energy described	138	fusion and fission
				96	prove that energy is conserved	138	nuclear reactions
				381	exothermic reactions and MREs	147	feel the heat generated by chemical reaction
				382	endothermic reactions and cold packs	158	investigate energy changes in chemical reactions
				387	fusion and fission explained	158	measure energy changes in 3 different reactions
				388	nuclear vs chemical reactions	160	radioactive decay
				393	carbon dating	160	how do you simulate nuclear decay?
				393	radioisotopes in science and medicine	161	research pros and cons of uses for radioactive elements
				400	research pros and cons of nuclear technology	188	specific heat and conservation of energy

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #:	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
D.12.11 Physical Science	by the end of grade 12	Interactions of Matter and Energy	Using the science themes, explain common occurrences in the physical world	35	how to calculate acceleration	14	calculate acceleration of car on ramp
				41	find acceleration of car	15	discuss and test ideas with your group
				49	link between force and acceleration	17	explore 2nd law and acceleration
				53	acceleration due to gravity	19	explain how you arrived at your answer
				58	Newton on a skateboard	27	changing force and distance on a lever
				60	how to calculate momentum	29	discuss what you learned about gears
				64	calculate momentum	29	design and construct complex gear machines
				68	compound machines	30	exploring force and distance with ropes and pulleys
				71	pliers as an example of a lever	36	energy conservation and the roller coaster
				78	describe a problem that would be solved by an engineer	39	study energy transformations in daily life scenarios
				78	design a toothbrush	39	make an energy flow chart
				79	analyze block and tackle	47	discuss an explanation with your group
				79	analyze pulleys with different numbers of supporting strings	82	study wave pulses on elastic cord
				80	analyze wheelbarrow	83	measure speed of a wave pulse
				80	analyze the human jaw as a simple machine		
				91	following an energy transformation		
				120	circuits in your house		

**Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
				197	transverse and longitudinal waves	84	make different types of waves in a ripple tank
				198	frequency and wavelength and amplitude	86	investigate frequency and wavelength
				205	standing waves on a string	129	explain your answer and justify
				215	properties of sound waves		
				242	properties of light waves		
				294	development of Kevlar brand fiber		
				354	chemical reactions and digestion		
				357	combustion reaction		
				361	heartburn reaction		
				489	metabolism and stored energy		
D.12.12 Physical Science	by the end of grade 12	Interactions of Matter and Energy	Using the science themes and knowledge of chemical, physical, atomic, and nuclear interactions, explain changes in materials, living things, earth's features, and stars				

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #:	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
E.12.01 Earth and Space Science	by the end of grade 12	Energy in the Earth System	Using the science themes, distinguish between internal energies (decay of radioactive isotopes, gravity) and external energies (sun) in the earth's systems and show how these sources of energy have an impact on those systems	316 387	isotopes explained fusion and fission explained	133 136 138 160	exploring isotopes understanding isotopes fusion and fission radioactive decay

Correlation to Wisconsin Model Academic Standards for Science
Foundations of Physical Science Student Text and Investigation Manual

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
E.12.04 Earth and Space Science	by the end of grade 12	The Origin and Evolution of the Earth System	Analyze the benefits, costs, and limitations of past, present, and projected use of resources and technology and explain the consequences to the environment	172 333 355 356 364 368 379 379 379 379 391 391 392 395 400 400 400 400	generating electric power problems with disposing of plastics recycling tires recycling discarded tires petroleum limiting reactants research environmental impact of fuel cells research economic impact of fuel cells hydrogen-powered cars and the environment research fuel cells research fuel cells impact of nuclear energy nuclear vs. fossil fuels storage of nuclear waste fossil fuels problems caused by airborne pollutants economic impact of pollution economic impact of reducing air pollution reducing pollution	52 163 163 163 163 163 172 172 174 175 178 201	the cost of using electrical appliances economic impact of end- product of combustion reaction too much CO ₂ consider a vehicle's fuel economy research how trees offset accumulation of CO ₂ can trees compensate for manmade CO ₂ from vehicles and industry? save water for houseplants perform water quality tests wise use of water supply maintaining water supply quality investigate effect of acid rain on microorganisms investigate different methods of generating electricity

Correlation to Wisconsin Model Academic Standards for Science
***Foundations of Physical Science* Student Text and Investigation Manual**

Standard #: Content Stand	grade	topic	Performance Standard	student text pg	detail	investigation pg	detail
				421	wise use of water		
				425	water cycle and conservation		
				430	water usage and quality		
				444	acid rain explained		
				444	impact of using fossil fuels		
				448	research the issue of acid rain		
				448	research economic impact of producing gases that cause acid rain		