Brunswick School Department Grade 9 Science Methods

	Causation: Nothing "just happens". Everything is caused.
Essential	Interrelatedness: Everything in the universe is connected to
Understandings	everything else in the universe.
	Dynamism: Everything is changing in some way all the time
	 Entropy: Change has direction. Generally, simple precedes.
	Entropy. Change has direction. Generally, simple precedes
	complex. Generally, order changes toward disorder.
	 Uniformitarianism: The way the universe works today is the way it
	worked yesterday and the way it will work tomorrow.
	 How can two people in different locations measure a similar item
Fssential	and get consistent results?
Questions	■ What is the nurnose of measuring?
Questions	- What is the purpose of measuring:
	How can observations be visually depicted to yield a conclusion?
	How do different measurement systems compare?
	 Scientists use a standard measuring system called SI.
Essential	 Measuring is a human creation used to describe and compare
Knowledge	objects and events.
g.	 Graphs are used to effectively display or describe relationships
	 Measurements consist of numbers and units
	- Measurements consist of numbers and units.
	■ <u>lerms</u> :
Vocabulary	 Graphs: Line, Bar, Pie
	 Meter, Liter, Kilogram, Kelvin, Second
	• Derived Units
	 Density
	 Dependent and Independent Variables
	- Controlo and constants
	O Controls and constants
	 Convert from one SI unit to another SI unit using dimensional
Essential	analysis
Skills	 Correctly show data on a graph
	 Correctly interpret data shown on a graph and predict new
	outcomes
	Measure items precisely and accurately
	 Use a process to experimentally solve problems
	P1 The Skills and Traits of Scientific Inquiry
	BT THE Skills and Trails of Scientific Inquiry
	Students methodically plan, conduct, analyze data from, and
	communicate results of in-depth scientific investigations,
	including experiments guided by a testable hypothesis.
	a. Identify guestions, concepts, and testable hypotheses that guide
	scientific investigations
	h Design and safely conduct methodical scientific investigations
	including experiments with controls
	including experiments with controls.
	c. Use statistics to summarize, describe, analyze, and interpret

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	results.
	d. Formulate and revise scientific investigations and models using
	logic and evidence.
	f Recognize and analyze alternative explanations and models
	using scientific criteria
	a Communicate and defend scientific ideas
	g. Communicate and defend scientific ideas.
	C1 Understandings of Inquiry
	Students describe key aspects of scientific investigations: that they are guided by scientific principles and knowledge, that they are performed to test ideas, and that they are communicated and defended publicly.
	a Describe how hypotheses and past and present knowledge
	quide and influence scientific investigations
	h Describe how scientists defend their evidence and evilanations
	using logical arguments and verifiable results
Samplo	
	Measurement Lab
Lessons	 MedSulement Lab St Conversion Workshoots
	 Si Conversion worksneets Decorde contract two different measurement
Activities	 Research, compare and contrast two different measurement
Comula	Systems
Sample	 Si Conversion Quiz Observe Test
Classroom	Chapter Test
Assessment	 Lab Reports
Methods	
	Publications:
Sample	 Discover Magazine
Resources	Publications:
	 Glencoe <u>Physical Science</u>
	 MARVEL Data bases *
	 GALE Resource Data bases **
	 Videos:
	 The Mechanical Universe
	ESPN Sports Figures
Technoloav	http://www.brunswick.k12.me.us/curriculum
Link	 * Data base may also be accessed from home
	http://www.maine.gov/marvel
	 ** Data base may also be accessed from home with logon and
	password http://infotrac.galegroup.com/itweb