



CORRELATION SUNSHINE STATE STANDARDS

SUBJECT/COURSE: SCIENCE/PRINCIPLES OF TECHNOLOGY 1

COURSE CODE NUMBER: 2003600

SUBMISSION TITLE: *PHYSICS IN CONTEXT*

PUBLISHER: CORD COMMUNICATIONS

GRADE 11-12

INTENDED OUTCOME: *Apply knowledge of forces and motions.*

STRAND: Force and Motion

STANDARD: The student understands that types of motion may be described, measured, and predicted. (SC.C.1.4)

BENCHMARK	PAGES(S) OR LOCATIONS(S) WHERE TAUGHT IN MAJOR TOOL I/M*	PAGES(S) OR LOCATIONS(S) FOR FOCUS/MINI LESSONS (ANCILLARIES)	Pages or Locations for MINI ASSESSMENTS (ANCILLARIES)	Pages or Locations for TUTORIALS (ANCILLARIES)	Pages or Locations for ENRICHMENTS (ANCILLARIES)
<p>1.Apply knowledge of forces and motions.</p> <p>SC.C.1.4.1 know that all motion is relative to whatever frame of reference is chosen and that there is no absolute frame of reference from which to observe all motion.</p> <p>SC.C.1.4.2 know that any change in velocity is an acceleration.</p>	<p>ST: 4-23, 122-136, 230-242, 326-351 and corresponding TG pages and notes</p> <p>ST: 333-335 and corresponding TG pages and notes</p> <p>ST: 128-131, 134-136 and corresponding TG pages and notes</p>	<p>LAB: 1.1, 2.1, 2.3, 6.1, 6.2, 6.3 and corresponding SJ pages</p> <p>LAB: 3.1 and corresponding SJ pages</p>	<p>LAB IG: 20, 44, 131 APTB: Q1.1, Q3.1, Q5.1, Q7.1, Q7.2, CHAPTER 7 TEST</p> <p>APTB: Q7.1</p> <p>LAB IG: 65 APTB: Q3.1</p>		<p>WEBSITE: 1.1, 3.1, 5.1, 7.1, 7.2</p> <p>WEBSITE: 7.1</p> <p>WEBSITE: 3.1</p>

INTENDED OUTCOME: Apply knowledge of forces and motions.

STRAND: The Nature of Matter

STANDARD: The student understands that the types of force that act on an object and the effect of that force can be described, measured, and predicted. (SC.C.2.4)

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<p>SC.C.2.4.1 know that acceleration due to gravitational force is proportional to mass and inversely proportional to the square of the distance between the objects.</p> <p>SC.C.2.4.2 know that electrical forces exist between any two charged objects.</p> <p>SC.C.2.4.3 describe how magnetic force and electrical force are two aspects of a single force.</p> <p>SC.C.2.4.4 know that the forces that hold the nucleus of an atom together are much stronger than electromagnetic force and that this is the reason for the great amount of energy released from the nuclear reactions in the sun and other stars.</p> <p>SC.C.2.4.5 know that most observable forces</p>	<p>ST: 17, 48-53, 173-174, 183 and corresponding TG pages and notes</p> <p>ST: 49-52, 109 and corresponding TG pages and notes</p> <p>ST: 266-276 and corresponding TG pages and notes</p> <p>ST: 50, 404-420 and corresponding TG pages and notes</p> <p>ST: 51-52 and corresponding TG</p>	<p>LAB: 3.1 and corresponding SJ pages</p> <p>LAB: 2.3 and corresponding SJ pages</p> <p>LAB: 5.3 and corresponding SJ pages</p> <p>LAB 9.2 and corresponding SJ pages</p>	<p>LAB IG: 65 APT: Q1.3, Q4.1</p> <p>LAB IG: 44 APT: Q1.3</p> <p>LAB IG: 107 APT: Q5.3</p> <p>LAB IG: 177 APT: 9.2</p>		<p>WEBSITE: 1.3, 4.1</p> <p>WEBSITE: 1.3</p> <p>WEBSITE: 5.3</p> <p>WEBSITE: 9.2</p>

can be traced to electric forces acting between atoms or molecules. SC.C.2.4.6 explain that all forces come in pairs commonly called action and reaction.	pages and notes ST: 332-336 and corresponding TG pages and notes		APTB: Q7.2		WEBSITE: 7.2
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INTENDED OUTCOME: Measure and calculate changes over time in linear and rotational motion in mechanical and fluid systems.

STRAND: PRINCIPLES OF TECHNOLOGY 1

STANDARD:

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3. Measure and calculate changes over time in linear and rotational motion in mechanical and fluid systems.	ST: 122-148, 230-261 and corresponding TG pages and notes	LAB: 3.1, 3.2, 5.1, 6.1, 6.2 and corresponding SJ pages	LAB IG: 65, 107, 131 APTB: Q3.1, Q3.2, Q5.1, Q5.2		WEBSITE: 3.1, 3.2, 5.1, 5.2

INTENDED OUTCOME: Demonstrate understanding of the principles of resistance relating to mechanical, fluid, electrical, and thermal systems.

STRAND: PRINCIPLES OF TECHNOLOGY 1

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4. Demonstrate understanding of the principles of resistance relating to mechanical, fluid, electrical, and thermal systems.	ST: 168-227 and corresponding TG pages and notes	LAB: 4.1, 4.2, 4.3, 4.4 and corresponding SJ pages	LAB IG: 89 APTB: Q4.1-Q4.4, CHAPTER 4 TEST		WEBSITE: 4.1, 4.2, 4.3, 4.4

INTENDED OUTCOME: Measure and control the rate of flow in electrical and heat energy.

STRAND: PRINCIPLES OF TECHNOLOGY 1

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5. Measure and control the rate of flow in electrical and heat energy.	ST: 262-294 and corresponding TG pages and notes	LAB: 5.3, 5.4 and corresponding SJ pages	LAB IG: 107 APTB: Q5.3, Q5.4		WEBSITE: 5.3, 5.4

INTENDED OUTCOME: Apply knowledge of the energy principles relating to mechanical, fluid, electrical, and thermal systems.

STRAND: The Nature of Matter

STANDARD: The student understands that all matter has observable, measurable properties. (SC.A.1.4)

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<p>6. Apply knowledge of the energy principles relating to mechanical, fluid, electrical, and thermal systems.</p> <p>SC.A.1.4.2 know that the vast diversity of the properties of materials is primarily due to variations in the forces that hold molecules together.</p> <p>SC.A.1.4.3 know that a change from one phase of matter to another involves a gain or loss of energy.</p>	<p>ST: 228-295 and corresponding TG pages and notes</p> <p>ST: 201-202, 278, 404-410 and corresponding TG pages and notes</p> <p>ST: 73-76, 79 and corresponding TG pages and notes</p>	<p>LAB: 1.4, 3.4, 5.1, 5.2, 5.3, 5.4, 6.1, 6.2 and corresponding SJ pages</p>	<p>LAB IG: 20, 65, 107, 131</p> <p>APTB: Q5.1-Q5.4, CHAPTER 5 TEST</p> <p>APTB: Q9.2</p> <p>APTB: Q1.4</p>		<p>WEBSITE: 5.1, 5.2, 5.3, 5.4</p> <p>WEBSITE: 9.2</p> <p>WEBSITE: 1.4</p>

INTENDED OUTCOME: Demonstrate understanding of the unifying concepts and processes of science.

STRAND: Energy

STANDARD: The student recognizes that energy may be changed in form with varying efficiency. (SC.B.1.4)

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<p>8. Demonstrate understanding of the unifying concepts and processes of science.</p> <p>SC.B.1.4.5 know that each source of energy presents advantages and disadvantages to its use in society (e.g. political and economic implications may determine a society's selection of renewable or nonrenewable energy sources).</p>	<p>EMBEDDED IN THE ST AND TG</p> <p>EMBEDDED IN THE ST AND TG</p>				<p>EMBEDDED IN THE WWW.LEARNINGINC ONTEXT.COM SITE</p> <p>EMBEDDED IN THE WWW.LEARNINGINC ONTEXT.COM SITE</p>

INTENDED OUTCOME: Demonstrate understanding of the unifying concepts and processes of science.

STRAND: The Nature of Science

STANDARD: The student uses the scientific processes and habits of mind to solve problems. (SC.H.1.4)

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<p>SC.H.1.4.1 know that investigations are conducted to explore new phenomena, to check on previous results, to test how well a theory predicts, and to compare different theories.</p> <p>SC.H.1.4.2 know that from time to time, major shifts occur in the scientific view of how the world works, but that more often, the changes that take place in the body of scientific knowledge are small modifications of prior knowledge.</p> <p>SC.H.1.4.3 understand that no matter how well one theory fits observations, a new theory might fit them as well or better, or might fit a wider range of observations, because in science, the testing, revising, and occasional discarding of theories,</p>	<p>EMBEDDED IN THE ST AND TG</p> <p>EMBEDDED IN THE ST AND TG</p> <p>EMBEDDED IN THE ST AND TG</p>				<p>EMBEDDED IN THE WWW.LEARNINGINC ONTEXT.COM SITE</p> <p>EMBEDDED IN THE WWW.LEARNINGINC ONTEXT.COM SITE</p> <p>EMBEDDED IN THE WWW.LEARNINGINC ONTEXT.COM SITE</p>

<p>new and old, never ends and leads to an increasingly better understanding of how things work in the world, but not to absolute truth.</p> <p>SC.H.1.4.4 know that scientists in any one research group tend to see things alike and that therefore scientific teams are expected to seek out the possible sources of bias in the design of their investigations and in their data analysis.</p> <p>SC.H.1.4.5 understand that new ideas in science are limited by the context in which they are conceived, are often rejected by the scientific establishment, sometimes spring from unexpected findings, and usually grow slowly from many contributors.</p> <p>SC.H.1.4.6 understand that in the short run, new ideas that do not mesh well with mainstream ideas in science often encounter vigorous criticism and that in the long run, theories are judged by how they fit with other theories, the range of observations they explain, how well</p>	<p>EMBEDDED IN THE ST AND TG</p> <p>EMBEDDED IN THE ST AND TG</p> <p>EMBEDDED IN THE ST AND TG</p>				<p>EMBEDDED IN THE WWW.LEARNINGINC ONTEXT.COM SITE</p> <p>EMBEDDED IN THE WWW.LEARNINGINC ONTEXT.COM SITE</p> <p>EMBEDDED IN THE WWW.LEARNINGINC ONTEXT.COM SITE</p>
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<p>they explain observations, and how effective they are in predicting new findings.</p> <p>SC.H.1.4.7 understand the importance of a sense of responsibility, a commitment to peer review, truthful reporting of the methods and outcomes of investigations, and making the public aware of the findings.</p>	EMBEDDED IN THE ST AND TG				EMBEDDED IN THE WWW.LEARNINGINC ONTEXT.COM SITE
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INTENDED OUTCOME: Demonstrate understanding of the interactions among science, technology, and society.

STRAND: How Living Things Interact with Their Environment

STANDARD: The student understands that science, technology, and society are interwoven and interdependent. (SC.H.3.4)

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<p>7. Demonstrate understanding of the interactions among science, technology, and society.</p> <p>SC.H.3.4.2 know that technological problems often create a demand for new scientific knowledge and that new technologies make it possible for</p>	<p>EMBEDDED IN THE ST AND TG</p> <p>EMBEDDED IN THE ST AND TG</p>				<p>EMBEDDED IN THE WWW.LEARNINGINC ONTEXT.COM SITE</p> <p>EMBEDDED IN THE WWW.LEARNINGINC ONTEXT.COM SITE</p>

<p>scientists to extend their research in a way that advances science.</p> <p>SC.H.3.4.3 know that scientists can bring information, insights, and analytical skills to matters of public concern and help people understand the possible causes and effects of events.</p> <p>SC.H.3.4.4 know that funds for science research come from federal government agencies, industry, and private foundations and that this funding often influences the areas of discovery.</p> <p>SC.H.3.4.5 know that the value of a technology may differ for different people and at different times.</p> <p>SC.H.3.4.6 know that scientific knowledge is used by those who engage in design and technology to solve practical problems, taking human values and limitations into account.</p>	<p>EMBEDDED IN THE ST AND TG</p> <p>EMBEDDED IN THE ST AND TG</p> <p>EMBEDDED IN THE ST AND TG</p> <p>EMBEDDED IN THE ST AND TG</p>				<p>EMBEDDED IN THE <i>WWW.LEARNINGINC ONTEXT.COM</i> SITE</p> <p>EMBEDDED IN THE <i>WWW.LEARNINGINC ONTEXT.COM</i> SITE</p> <p>EMBEDDED IN THE <i>WWW.LEARNINGINC ONTEXT.COM</i> SITE</p> <p>EMBEDDED IN THE <i>WWW.LEARNINGINC ONTEXT.COM</i> SITE</p>
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SC.H.3.4.1 know that performance testing is often conducted using small-scale models, computer simulations, or analogous systems to reduce the chance of system failure.	EMBEDDED IN THE ST AND TG				EMBEDDED IN THE WWW.LEARNINGINC ONTEXT.COM SITE