

Exploring the Extreme			
2002 Science			
Priority Academic Student Skills			
Oklahoma Science			
Grade K			
Activity/Lesson	State	Standards	
Finding the Center of Gravity Using Rulers	OK	SCI.K.A.1.3	Ask questions, make predictions, and communicate observations orally and/or in drawings.
Finding the Center of Gravity Using Rulers	OK	SCI.K.B.1.3	Observe and describe how objects move (e.g., slide, turn, twirl, roll).
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Grade 1			
Activity/Lesson	State	Standards	
Finding the Center of Gravity Using Rulers	OK	SCI.1.A.1.1	Observe and measure objects, organisms and/or events using developmentally appropriate nonstandard units of measurement (e.g., hand, paper clip, book); and Systems International (SI) units (i.e., meters, centimeters, and degrees Celsius).
Finding the Center of Gravity Using Rulers	OK	SCI.1.A.3.2	Plan and conduct a simple investigation.
Finding the Center of Gravity Using Rulers	OK	SCI.1.A.3.3	Employ simple equipment and tools such as magnifiers, thermometers, and rulers to gather data.
Finding the Center of Gravity Using Rulers	OK	SCI.1.A.4.3	Communicate the results of a simple investigation using drawings, tables, graphs, and/or written and oral language.
Finding the Center of Gravity Using Rulers	OK	SCI.1.B.1.1	Objects have properties that can be observed, described, and measured.
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Grade 2			
Activity/Lesson	State	Standards	
Finding the Center of Gravity Using Rulers	OK	SCI.2.A.1.1	Observe and measure objects, organisms, and/or events using developmentally appropriate nonstandard units of measurement (e.g., hand, paper clip, book) and Systems International (SI) units (i.e., meters, centimeters, and degrees Celsius).

Finding the Center of Gravity Using Rulers	OK	SCI.2.A.3.2	Plan and conduct a simple investigation.
Finding the Center of Gravity Using Rulers	OK	SCI.2.A.3.3	Employ simple equipment and tools such as magnifiers, thermometers, and rulers to gather data.
Finding the Center of Gravity Using Rulers	OK	SCI.2.A.4.3	Communicate the results of a simple investigation using drawings, tables, graphs, and/or written and oral language.
Finding the Center of Gravity Using Rulers	OK	SCI.2.B.1.2	Motion and interaction of objects can be observed in toys and playground activities.
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Grade 3			
Activity/Lesson	State	Standards	
Finding the Center of Gravity Using Rulers	OK	SCI.3.A.1.1	Observe and measure objects, organisms, and/or events using developmentally appropriate Systems International (SI) units (i.e., meters, centimeters, grams, and degrees Celsius).
Finding the Center of Gravity Using Rulers	OK	SCI.3.A.3.2	Plan and conduct a simple investigation.
Finding the Center of Gravity Using Rulers	OK	SCI.3.A.3.3	Employ simple equipment and tools such as magnifiers, thermometers, and rulers to gather data.
Finding the Center of Gravity Using Plumb Lines	OK	SCI.3.A.1.1	Observe and measure objects, organisms, and/or events using developmentally appropriate Systems International (SI) units (i.e., meters, centimeters, grams, and degrees Celsius).
Finding the Center of Gravity Using Plumb Lines	OK	SCI.3.A.3.2	Plan and conduct a simple investigation.
Finding the Center of Gravity Using Plumb Lines	OK	SCI.3.A.4.2	Recognize and describe patterns, then make predictions based on patterns.
Changing the Center of Gravity Using Moment Arms	OK	SCI.3.A.1.1	Observe and measure objects, organisms, and/or events using developmentally appropriate Systems International (SI) units (i.e., meters, centimeters, grams, and degrees Celsius).
Changing the Center of Gravity Using Moment Arms	OK	SCI.3.A.3.2	Plan and conduct a simple investigation.
Changing the Center of Gravity Using Moment Arms	OK	SCI.3.A.3.3	Employ simple equipment and tools such as magnifiers, thermometers, and rulers to gather data.

Changing the Center of Gravity Using Moment Arms	OK	SCI.3.A.4.3	Communicate the results of a simple investigation using drawings, tables, graphs, and/or written and oral language.
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Grade 4			
Activity/Lesson	State	Standards	
Finding the Center of Gravity Using Rulers	OK	SCI.4.A.3.3	Design and conduct a scientific investigation.
Finding the Center of Gravity Using Rulers	OK	SCI.4.A.5.2	Use a variety of measurement tools and technology.
Finding the Center of Gravity Using Plumb Lines	OK	SCI.4.A.3.3	Design and conduct a scientific investigation.
Finding the Center of Gravity Using Plumb Lines	OK	SCI.4.A.4.3	Make predictions based on patterns in experimental data.
Finding the Center of Gravity Using Plumb Lines	OK	SCI.4.A.5.1	Use different ways to investigate questions and evaluate the fairness of the test.
Finding the Center of Gravity Using Plumb Lines	OK	SCI.4.A.5.2	Use a variety of measurement tools and technology.
Changing the Center of Gravity Using Moment Arms	OK	SCI.4.A.3.3	Design and conduct a scientific investigation.
Changing the Center of Gravity Using Moment Arms	OK	SCI.4.A.5.1	Use different ways to investigate questions and evaluate the fairness of the test.
Changing the Center of Gravity Using Moment Arms	OK	SCI.4.A.5.2	Use a variety of measurement tools and technology.
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Grade 5			
Activity/Lesson	State	Standards	
Jet Propulsion	OK	SCI.5.A.4.4	Communicate the results of investigations and/or give explanations based on data.
Vectoring	OK	SCI.5.A.3.2	Evaluate the design of a scientific investigation.
Vectoring	OK	SCI.5.A.3.3	Design and conduct a scientific investigation.
Vectoring	OK	SCI.5.A.4.4	Communicate the results of investigations and/or give explanations based on data.

Vectoring	OK	SCI.5.A.5.1	Use different ways to investigate questions and evaluate the fairness of the test.
Center of Gravity, Pitch, Yaw	OK	SCI.5.A.3.2	Evaluate the design of a scientific investigation.
Center of Gravity, Pitch, Yaw	OK	SCI.5.A.5.2	Use a variety of measurement tools and technology.
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Grade 6			
Activity/Lesson	State	Standards	
Jet Propulsion	OK	SCI.6.A.3.3	Identify variables and/or controls in an experimental setup (i.e., tested, experimental, and measured variables).
Jet Propulsion	OK	SCI.6.A.4.5	Communicate scientific procedures and explanations.
Jet Propulsion	OK	SCI.6.A.5.1	Use systematic observations, make accurate measurements, and identify and control variables.
Vectoring	OK	SCI.6.A.3.3	Identify variables and/or controls in an experimental setup (i.e., tested, experimental, and measured variables).
Vectoring	OK	SCI.6.A.4.5	Communicate scientific procedures and explanations.
Vectoring	OK	SCI.6.A.5.1	Use systematic observations, make accurate measurements, and identify and control variables.
Center of Gravity, Pitch, Yaw	OK	SCI.6.A.5.1	Use systematic observations, make accurate measurements, and identify and control variables.
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Grade 7			
Activity/Lesson	State	Standards	
Jet Propulsion	OK	SCI.7.A.3.3	Identify variables and/or controls in an experimental setup (i.e., tested, experimental, and measured variables).
Jet Propulsion	OK	SCI.7.A.4.5	Communicate scientific procedures and explanations.
Jet Propulsion	OK	SCI.7.A.5.1	Use systematic observations, make accurate measurements, and identify and control variables.
Vectoring	OK	SCI.7.A.3.3	Identify variables and/or controls in an experimental setup (i.e., tested, experimental, and measured variables).
Vectoring	OK	SCI.7.A.4.3	Evaluate data to develop reasonable explanations, and/or predictions.

Vectoring	OK	SCI.7.A.5.1	Use systematic observations, make accurate measurements, and identify and control variables.
Center of Gravity, Pitch, Yaw	OK	SCI.7.A.1.2	Use appropriate tools (e.g., metric ruler, graduated cylinder, thermometer, balances, spring scales, stopwatches) when measuring objects, organisms, and/or events.
Center of Gravity, Pitch, Yaw	OK	SCI.7.A.5.1	Use systematic observations, make accurate measurements, and identify and control variables.
Fuel Efficiency	OK	SCI.7.A.1.2	Use appropriate tools (e.g., metric ruler, graduated cylinder, thermometer, balances, spring scales, stopwatches) when measuring objects, organisms, and/or events.
Fuel Efficiency	OK	SCI.7.A.4.5	Communicate scientific procedures and explanations.
Fuel Efficiency	OK	SCI.7.A.5.1	Use systematic observations, make accurate measurements, and identify and control variables.
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Grade 8			
Activity/Lesson	State	Standards	
Jet Propulsion	OK	SCI.8.A.3.3	Identify variables and/or controls in an experimental setup (i.e., tested, experimental, and measured variables).
Jet Propulsion	OK	SCI.8.A.4.5	Communicate scientific procedures and explanations.
Jet Propulsion	OK	SCI.8.A.5.1	Use systematic observations, make accurate measurements, and identify and control variables.
Vectoring	OK	SCI.8.A.3.3	Identify variables and/or controls in an experimental setup (i.e., tested, experimental, and measured variables).
Vectoring	OK	SCI.8.A.4.3	Evaluate data to develop reasonable explanations, and/or predictions.
Vectoring	OK	SCI.8.A.4.5	Communicate scientific procedures and explanations.
Vectoring	OK	SCI.8.A.5.1	Use systematic observations, make accurate measurements, and identify and control variables.
Center of Gravity, Pitch, Yaw	OK	SCI.8.A.1.2	Use appropriate tools (e.g., metric ruler, graduated cylinder, thermometer, balances, spring scales, stopwatches) when measuring objects, organisms, and/or events.

Center of Gravity, Pitch, Yaw	OK	SCI.8.A.5.1	Use systematic observations, make accurate measurements, and identify and control variables.
Fuel Efficiency	OK	SCI.8.A.1.2	Use appropriate tools (e.g., metric ruler, graduated cylinder, thermometer, balances, spring scales, stopwatches) when measuring objects, organisms, and/or events.
Fuel Efficiency	OK	SCI.8.A.4.2	Interpret data tables, line, bar, trend and/or circle graphs.
Fuel Efficiency	OK	SCI.8.A.5.1	Use systematic observations, make accurate measurements, and identify and control variables.
Fuel Efficiency	OK	SCI.8.B.2.1	The motion of an object can be measured. The position of an object, its speed and direction can be represented on a graph.