

Jefferson City Public Schools–Curriculum

SUBJECT: Elementary

COURSE: EER

STRAND: Roller Coaster Physics

Objectives	Assessment/Evaluation	Instructional Activities
<p>(A) Develop an understanding of Newton’s Laws of Motion and solve physics related problems</p> <p>Performance: 1.2, 1.4 1.5, 1.6 1.8, 2.3, 2.4, 3.1, 3.2, 3.4, 3.6 Knowledge: (CA) 1,3-6 CAGLE: R.1.D-H; LS.1.B; LS.2.A; IL.1.B,C (All Gr. 6) NETS: N/A DOK: 1-3</p>	<ul style="list-style-type: none"> • Quizzes – Science vocabulary • Teacher observation – check list 	<ul style="list-style-type: none"> • Weekly science vocabulary • Readings/ background information on: <ul style="list-style-type: none"> • Aristotle • Galileo • Newton • Newton’s Laws of Motion
<p>(B) Conduct physics related experiments related to Newton’s Laws of Motion using scientific inquiry</p> <p>Performance: 1.1, 1.2, 1.4, 1.8, 2.4, 3.1, 3.2, 3.4, 3.5 Knowledge: (SC) 1,2,6,7 (MA) 2,3 SCGLE: SC7.1.A-D (Gr. 7) NETS: N/A DOK: 1-4</p>	<ul style="list-style-type: none"> • Science Journals – scoring guide • Science experiment sheets – scoring guides • Graphs and charts – scoring guides 	<p>Experiments:</p> <ul style="list-style-type: none"> • Newton’s 1st Law of Motion: The Phantom Dragon • Newton’s 2nd Law of Motion: The Rattlesnake • Newton’s 3rd Law of Motion: The Outlaw
<p>(C) Conduct experiments using gravity and motion</p> <p>Performance: 1.1, 1.2, 1.4, 1.8, 2.4, 3.1, 3.2, 3.4, 3.5 Knowledge: (SC) 1,2,6,7 (MA) 2,3 SCGLE: SC7.1.A-D (Gr. 7) NETS: N/A DOK: 1-4</p>	<ul style="list-style-type: none"> • Science experiment sheets – scoring guides • Graphs and charts – scoring guides 	<p>Experiments:</p> <ul style="list-style-type: none"> • Potential energy: The Anaconda • Centripetal force: The Cobra Spitfire • Free fall: <ul style="list-style-type: none"> • Galileo • Aristotle • Energy can (E-Can) • Rock and roll • Gravitational model

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<p>(D) Record science experiments and T.E.A.M. activities accurately in a Science Journal</p> <p>Performance: 1.1, 1.2, 1.4, 1.8, 2.3, 2.4, 3.1, 3.2, 3.4, 3.5 Knowledge: (SC) 1,2,6,7 (MA) 2,3 SCGLE: SC1.2.F; SC2.1.A; SC2.2.A,B,D,F; SC5.3.A; SC7.1.A-D (All Gr. 7) NETS: N/A DOK: 1-4</p>	<ul style="list-style-type: none"> • Science Journals – scoring guide • Experiment activities – assignment sheets • Graphs and charts – scoring guides • Teacher observation – teacher check list 	<ul style="list-style-type: none"> • Collecting, recording, and analyzing scientific data • T.E.A.M. activities: • Potential/kinetic energy • Momentum and acceleration • Electrical, chemical, radiant, thermal, sound, and nuclear energy • Friction, drag, and inertia
<p>(E) Use knowledge of Newton’s Laws of Motion to create a “roller coaster” as a final class project</p> <p>Performance: 2.4, 3.1-3.6, 4.5, 4.6 Knowledge: (SC) 1,2,6-8 (MA) 2 SCGLE: SC8.3.A (Gr. 5) NETS: N/A DOK: 2-4</p>	<ul style="list-style-type: none"> • Teacher observation • Roller coaster project – scoring guide • Self-evaluation • Peer-evaluation 	<ul style="list-style-type: none"> • Create a working roller coast: working in a group • Applying knowledge of physics to a roller coaster project