Big Idea *Energy can be transformed.*

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| **Science 4 - Energy DLRC Resources October 2018** | |
| 500 NLS GR4 | Nelson science 4 [kit]: physics and Earth/space. (Series: Nelson science) [Burnaby, B.C.] : assembled by Burnaby School District, 2018.  Kit contains 14 identical student books (110 pages: colour illustrations; 28 cm.), 2 teacher's guides (1 copy each of 2 titles). Grades: 4. "The Nelson science series is one of a suite of Nelson resources designed for the BC curriculum. Nelson science fully meets the goals and rationale of the curriculum and addresses all the learning standards and big ideas."--Page [4] of Resource overview. Energy: "In this unit, students will use the skills, processes, and habits of mind of scientific inquiry to explore energy and transformations of energy."--Page 10 of teacher's resource. |
| 530 ENE | Energized [kit]. [Burnaby, B.C.] : assembled by Burnaby School District, 2016. Kit contains the following titles: Energized! / Beth Geiger (6 copies) -- Forces that move / Kate Boehm Jerome (6 copies) -- Energy at work / John Marshall (1 copy) -- Energy : simple experiments for young scientists / Larry White (1 copy) -- Light / Joseph Midthun (1 copy) -- Sound / Joseph Midthun (1 copy) -- Energy / Joseph Midthun (1 copy) -- Full of energy / Sally Hewitt (1 copy) -- Motion and speed / John Marshall (1 copy) -- Go and stop / John Marshall (1 copy) -- The magic school bus plays ball : a book about forces (1 copy) -- Energy : heat, light, and fuel / Darlene Stille (1 copy) -- Eyewitness energy / Dan Green (1 copy) -- Conservation of energy (1 copy). Teacher's guide: Conservation of energy teacher's guide. Grades: 3 4 5. The books in this kit discuss various types of energy, how energy is produced and used. |
| 531.5 SLI | Slinky drop [kit]. [Burnaby, B.C.] : assembled by Burnaby School District, 2016. Grades: 4 5 6 7. The Slinky walking spring toy is used to introduce students to the concepts of force (gravity, tension, Newton's Laws) and energy transfer (potential to kinetic). Includes suggested activities from Burnaby School District's Math and Science Program Consultant. |
| 531.6 ZEE | ZeeBeez [kit]. [Burnaby, B.C.] : assembled by Burnaby School District, 2016. Kit contains 15 ZeeBeez toys in various colours. Grades: 5 6 7. Invert, spin and drop this toy from a height onto a solid surface to investigate force, energy, rebound and angle measurements. Teacher's guide includes suggestions for students to communicate findings. |
| 551.518 WIN | The wind blew [kit]. [Burnaby, B.C.: assembled by Burnaby School District], 2016. This kit contains the following titles: The wind blew / Pat Hutchins -- I face the wind / Vicki Cobb. Includes a portion of the teacher's guide Even more picture-perfect science lessons: using children's books to guide inquiry, K-5 / Emily Morgan and Karen Ansberry. Grades: 3 4 5. Picture-perfect science integrates reading comprehension and content knowledge in different areas of science. In this unit, "students explore ways to change the speed and direction of a Ping-Pong ball using a handled air pump to simulate wind. Simple experiments help them understand that air has weight and moving air applies a force to objects."--Page 77 of teacher's guide. NOTE: Ping-Pong ball is not included with this kit. |
| 621.4 HAR | Harnessing the wind [kit]. [Burnaby, B.C.: assembled by Burnaby School District], 2016. This kit contains the following titles: Wind energy: blown away! / Amy S. Hansen -- The boy who harnessed the wind / William Kamkwamba and Bryan Mealer. Includes a portion of the teacher's guide Even more picture-perfect science lessons: using children's books to guide inquiry, K-5 / Emily Morgan and Karen Ansberry. Grades: 3 4 5. Picture-perfect science integrates reading comprehension and content knowledge in different areas of science. In this unit, "students are given a real-world context for the concept of energy transfers and transformations through the remarkable true story of a boy who builds a windmill for his village."--Page 103 of teacher's guide. |
| 621.815 RUB | Rube Goldberg machines [kit]. EMAIL dlrcloans@burnabyschools.ca TO BOOK. [Burnaby, B.C.] : assembled by Burnaby School District, 2017. Grades: 4 5 6 7. This kit provides materials for designing and building a complex, "Rube Goldberg"-style machine, which may provide the practical basis for exploring mathematical and scientific concepts, including gravity, weight, friction, angles (geometry), simple machines, and energy transfer. "A Rube Goldberg machine is a deliberately complex contraption in which a series of devices that perform simple tasks are linked together to produce a domino effect in which activating one device triggers the next device in the sequence."--Wikipedia. This kit may be used to support ADST (Applied Design, Science & Technology) curriculum. |
| DVD 333.79 ENR | Energy [videorecording]. (Series: Bill Nye, the science guy). Elk Grove Village, IL: Disney Educational Productions, c2005.  Grades: 4 5 6 7 8 9 10. "See how to conduct home experiments that transform potential energy into kinetic energy and use falling water to make energy."--Container. |
| DVD 333.794 REN | Renewable fuels [videorecording]. [White Plains, N.Y.] : VEA;, c2008. Directed by Ken Breitenmoser; written by Luke Preston; executive producer, Simon Garner. Presenter, Michael Wahr. "Traditionally we have relied heavily upon non-renewable energy resources. However, we have now reached a tipping point globally where the environment cannot sustain such impact, nor do we have the resources to continue this. This program clearly shows the environmental impacts of both renewable and non-renewable resources. It guides us through numerous renewable energy sources, how the energy is collected and the pros and cons of renewable energy. The program also explores what is happening around the globe with the introduction of wind farms, wave parks and solar farms. |
| DVD 333.794 RNW | Renewable energy [videorecording]. Classroom ed. Itasca, IL: Disney Educational Productions, c2012. Host: Bill Nye. Grades: 4 5 6 7 8. Bill Nye explores the science of renewable energy and demonstrates how to use science and technology to engineer a brighter tomorrow. Using his trademark blend of hands-on demos and humor, Bill explains Newton's First Law. Then, he's off to Renewable Energy Lab at UL to compare renewable and non-renewable energy sources like fossil fuels, solar, wind, and hydroelectricity. Includes bonus features. |
| DVD 530 ENE | Energy [videorecording]. Elk Grove Village, Ill.: Disney Educational Productions, c2009. Science and imagination -- What is energy? -- Mechanical energy -- Conservation of energy -- Potential & kinetic energy -- Electrical energy -- Renewable energy -- Putting it all together. Hosted by the Walt Disney Imagineers, featuring Asa Kalama. "What scientific principle is at work in every theme park ride the Imagineers create? It's Energy. The Imagineers reveal the role energy plays in popular theme park attractions such as Epcot's Test Track and the Mad Tea Party. Students will learn that energy is the ability to do work and that energy is constantly being transferred from one thing to another. They will also identify the difference between potential and kinetic energy and be able to establish examples and benefits of renewable energy" |
| DVD 531.1134 FRC | Friction [videorecording]. Classroom ed. Elk Grove Village, Ill.: Disney Educational Productions, c2004. Host, Bill Nye. Grades: 4 5 6 7. Bill Nye illustrates how various types of transportation utilize friction from traction to ball bearings to hovercraft. |
| DVD 531.1134 FRI | Friction [videorecording]. Elk Grove Village, Ill.: Disney Educational Productions, c2010. Science and imagination -- What is friction? -- Understanding friction -- Types of friction -- Lubricants -- The trouble with friction -- Rolling friction -- Putting it all together. Hosted by the Walt Disney Imagineers, featuring Asa Kalama. "Do Walt Disney Imagineers encounter resistance in their work? Of course they do... when it comes to friction! Here the Imagineers showcase how different types of friction- static, kinetic, and rolling - come into play when they're designing Disney's theme park rides and attractions. From rollercoaster wheels for Big Thunder Mountain Railroad to the shape of a Disney Cruise Line ship's hull, the Imagineers can use tribology (the study of friction) to find ways to reduce drag. Students will learn the different types of friction as well as the roles that gravity and Newton's First Law play" |
| ELL 530 MAT | Matter and energy [kit]. [Burnaby, B.C.: assembled by Burnaby School District], 2014. This kit contains the following titles: Light -- Magnets -- Sound -- Heat -- Energy -- Motion. This kit contains the following teacher's guide: Talk about overview. Audience: Primary beginner ELL. Level 1. "The Talk About series introduces the students to English vocabulary and everyday English language patterns and structures through talking about a topic, reading about the topic, and then writing about the topic." --p. 1 of teacher's guide. The books in this kit use pictures, diagrams and simple language to introduce students to concepts of matter and energy, including light, sound, motion and others. |
| ELL 537 EXP | Exploring electricity [kit]. [Burnaby, B.C.: assembled by Burnaby School District], 2014. This kit contains the following title: Electricity / Catherine Little. Kit includes a section of the Big idea science teacher's guide. Audience: Intermediate ELL. Level 2. "This series offers students opportunities to learn essential curriculum concepts, develop content-specific vocabulary and academic words in context, as well as acquire competencies in literacy and critical thinking skills." --Page 4 of teacher's guide. "This book deals with electrical energy. It is designed to give an overview of electrical energy, how we use it, and how energy from different sources can be changed into electrical energy. It also deals with how electrical devices change electrical energy into different forms of energy." --Page 29 of teacher's guide. |
| SPF 530 MAT | La matière et l'énergie [kit]. [Burnaby, B.C.: assembled by Burnaby School District], 2015. Kit contains the following titles: La chaleur -- La lumière -- Le son -- L'énergie -- Les aimants -- Le mouvement. Grades: 3 4 (French Immersion) and French LSS. "La collection Pour tout dire reconnaît que la communication orale, la lecture et l'écriture sont interdépendantes et que l'apprentissage de l'une contribue à l'acquisition de l'autre."--Page [2] of cover. The titles in this series are also appropriate for French LSS. |
| SPF 531.6 COU | Sohn, Emily. Coup d'oeil sur les forces et le mouvement avec Max Axiome, le super scientifique [kit]. [Burnaby, B.C.] : assembled by Burnaby School District, 2012. Coup d'oeil sur les forces et le mouvement avec Max Axiome le super scientifique. Montréal : Chenelière Éducation, c2008. Grades: 4 5 6 7 8 9 (French Immersion). "Un parc d'attractions offre bien plus que des manèges quand Max Axiome s'y trouve! Accompagne-le dans ses sauts à l'élastique et ses tours de montagnes russes: tu en apprendras plus sur la vitesse, l'accélération, l'inertie, la friction et la force gravitationnelle."--Page [4] of cover. |
| TR 531.6 ROB | Robertson, William C. Stop faking it! Energy. Arlington, Va.: NSTA Press, c2002. Recognizing energy -- Energy on the move -- It slices, it dices--it gathers dust! -- Temp-a-chur and thermal energy -- Close the door--you're letting the cold in! -- Taming energy. Audience: Professional. "At the book's heart are easy-to-grasp explanations of energy basics--work, kinetic energy, potential energy, and the transformation of energy--and energy as it relates to simple machines, heat energy, temperature, and heat transfer. Irreverent author Bill Robertson suggests activities that bring the basic concepts of energy to life with common household objects." --Cover p. [4]. |
| V 531.6 ENP | Energy, potential & kinetic [videorecording]. Wynnewood, PA: distributed by Schlessinger Media, c2000. Grades: 5 6 7. Students discover that kinetic energy is related to objects in motion while potential energy is stored, just waiting to be put to use. Explore how increasing potential energy translates to more kinetic energy with compelling, real-life examples. Fast-paced visuals illustrated how these states of energy are related and how stored energy is converted to active energy and back again." |
| V 531.6 MEC | Mechanical energy [videorecording]. Wynnewood, PA: distributed by Schlessinger Media, c2000. Grades: 5 6 7. "Students learn how energy can be transferred from one object to another to make something move -- like wind blowing on a sail. Discover that mechanical energy can exist in two states: moving, or kinetic energy; and stored, or potential energy. A roller coaster is one vivid example.". |