Big Idea *Machines are devices that transfer force and energy*

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| **Science 5 - Simple Machines DLRC Resources November 2018** | |
| 500 NLS GR5 | Nelson science 5 [kit]: physics and Earth/space. All books published: Toronto: Nelson Education, c2017. Assembled by Burnaby School District, Math and science program consultant, 2018.  Kit contains: 14 identical student books (110 pages: colour illustrations; 28 cm.), 2 teacher's guides (1 copy each of 2 titles). Grades: 5. "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. Simple machines: "In this unit, students inquire into simple machines. They will use the skills, processes, and habits of mind of scientific inquiry to explore constructed machines, machines found in nature, and power as the rate at which energy is transferred."--Page 12 of teacher's resource. |
| 621.8 HOW | Mezzanotte, Jim. How simple machines work [kit]. [Burnaby, B.C.: assembled by Burnaby School District], 2009. This kit contains the following titles: How wheels and axles work -- How pulleys work -- How levers work -- How ramps, wedges, and screws work. Grades: 5. This kit supports the Grade 5 Physical Science strand: simple machines. |
| 621.8 MAC | Machines [kit]: simple and compound. [Burnaby, B.C.: assembled by Burnaby School District], 2006. This kit contains the following title: Machines: simple and compound / Rebecca L. Johnson. Washington, DC: National Geographic, c2006. (6 copies). Grades: 5. This kit provides information on simple and compound machines and how they work. This kit can be used to support the grade 5 Physical Science strand. |
| 621.8 SCO | Simple and compound machines [kit]. [Burnaby, B.C.: assembled by Burnaby School District], 2011. This kit contains the following titles: I wonder--? : machines -- Machines at work / Alan Ward -- Mechanical efficiency / Kyn Barker, Steve Campbell, et al. -- Mixing machines / Amanda Earl, Danielle Sensier -- Science & technology 4. Pulleys and gears / Steve Campbell ... [et al.] -- Simple machines / Deborah Hodge -- Working machines / John Marshall -- Diggers and other construction machines / Jon Richards -- Digging machines / Amanda Earl, Danielle Sensier -- Farm machines / Jon Richards -- Forces and machines / Terry Jennings -- Machines -- Experiment with movement / Bryan Murphy -- Motion / Steve Campbell [and 6 others]. Teacher's guides: Science & technology 8. Mechanical efficiency: teacher's guide / Kyn Barker ... [et al.] -- Science & technology 4. Pulleys and gears: teacher's guide -- Simple machines made simple / Ralph E. St. Andre -- Work and machines: elementary science program grade 3-4 / Shelley Davidson, Shelley Hrdlitschka, Carolyn Hilder -- Science & technology 6. Motion: teacher's guide / Steve Campbell et al. Grades: 5. This kit supports the Grade 5 Physical Science strand: forces and movement. |
| 621.8 SIM | Simple machines [kit]. Vernon Hill, Ill.: Learning Resources, [2008]. This kit contains the following items: 1 guide with assembly instructions and definitions of physical science terms; 63 plastic component pieces to build five models: pulley -- incline plane -- wedge -- lever -- wheel & axle. Grades: 4 5 6 7. Experiment and discover basic simple machines by first building five models and then changing the variables to learn how machines make work and effort easier. |
| 621.8 SMK | Simple machines in my makerspace [kit]. [Burnaby, B.C.] : assembled by Burnaby School District, 2017. Kit contains the following titles: Inclined planes / Sandra Iversen (4 copies) -- Levers / Sandra Iversen (4 copies) -- Pulleys / Sandra Iversen (4 copies) -- Screws / Sandra Iversen (4 copies) -- Wedges / Sandra Iversen (4 copies) -- Wheels-and-axles / Sandra Iversen (4 copies) -- Inclined planes in my makerspace / Tim Miller and Rebecca Sjonger (1 copy) -- Levers in my makerspace / Tim Miller and Rebecca Sjonger (1 copy) -- Pulleys in my makerspace / Tim Miller and Rebecca Sjonger (1 copy) -- Screws in my makerspace / Tim Miller and Rebecca Sjonger (1 copy) -- Wedges in my makerspace / Tim Miller and Rebecca Sjonger (1 copy) -- Wheels and axles in my makerspace / Tim Miller and Rebecca Sjonger (1 copy). Grades: 4 5 6. The books in this kit describe simple machines, their functions, and how they may be used in makerspaces. |
| 621.8 STO | Simple machines to the rescue [kit]. [Burnaby, B.C.: assembled by Burnaby School District], 2011. This kit contains the following titles: Pulleys to the rescue -- Inclined planes to the rescue -- Wheels and axles to the rescue -- Screws to the rescue -- Levers to the rescue. Grades: 5. Wheels, inclined planes, pulleys and levers don't sound that amazing, until one of them gets you out of a jam. That's the utility of simple machines, they make easy work of many tasks. Through this series of books readers will discover just how important these deceptively simple machines can be! Describes simple machines in terms of what they are, how they work, past uses, and common uses today. This kit supports the Grade 5 Physical Science strand: simple machines. |
| 621.8 USI | Using simple machines [kit]: National Geographic theme sets. Washington, D.C.: National Geographic School Publishing, c2005. Kit contains the following titles: Machines in the home / Caroline Snow (8 copies) -- Machines in sports / Caroline Snow (8 copies) -- Machines in construction / Caroline Snow (8 copies) -- Machines in health / Caroline Snow (8 copies). Teacher's guide: -- Using simple machines: teacher's guide: science. Grades: 3 4 5 6. "The Theme Sets program provides differentiated resources for teachers to meet the diverse needs of their students. Each Theme Set provides four books crafted to match the wide range of reading levels within each classroom. All books provide the same core concepts but within different contexts and at different reading levels. Machines use force to help people do work. There are six simple machines. Compound machines use two or more simple machines operating together."--Teacher's guide. |
| 621.815 MAR | Marble mania super freestyle maze [game]. Phoenix, AZ: The Learning Journey International, 2014. Grades: 4 5 6 7. Students can construct a marble maze using a variety of building pieces, including blocks, pulleys and gears, and send marbles to travel down the ramps. Allows students to observe in a real-world context principles of engineering, as well as force, motion and gravity. |
| 621.815 RUB | Rube Goldberg machines [kit]. CALL DLRC (639903) 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 621.8 EVE | Everyday simple machines [videorecording]. Brandon, VT: Visual Learning Company;, c2007. Partial contents: What is a simple machine? -- Work and mechanical advantage -- Levers -- Inclined planes -- Wedges -- Screws -- Wheel and axle -- Pulleys. Grade: 5. "Definitions, visuals, graphics, and activities are used to introduce simple machines and show how they work. Well-selected vocabulary explains the concepts, while a variety of visuals engages students. The program covers the learning outcomes for Physical Science at the grade 5 level, and could be used as an introduction to a unit on the topic. The guide contains useful support materials such as blackline masters, assessment tools, a program script and experiments."--ERAC. |
| DVD 621.8 LEV | Levers and pulleys [videorecording]. Elk Grove Village, Ill.: Disney Educational Productions, c2008. Science and imaginations -- What are levers and pulleys? -- Levers and mechanical advantage -- Pulleys -- Levers in theme park rides -- Pulleys in theme park rides -- Levers and pulleys in audio-animatronics -- Levers and special effects -- Review. Hosted by the Walt Disney Imagineers, featuring Asa Kalama. Grades: 5 6 7 8. "How do the Imagineers make elephants fly? Actually, it's simple... simple machines, that is! Here, the Imagineers give a new look at how levers and pulleys were utilized to create attractions such as Dumbo the Flying Elephant and Soarin' Over California. Students will see how levers and pulleys make work easier by either multiplying or redirecting the effort we put into them. They will identify the two forces involved in using a machine and learn to calculate mechanical advantage, given effort and resistance" -- Container. |
| DVD 621.8 SIM | Simple machines [videorecording]. Classroom ed. Elk Grove Village, IL: Disney Educational Productions, 2008. Host, Bill Nye. Grades: 4 5 6 7. Bill careens around on a roller coaster and furiously pedals his bike on the Tour de Science to show that simple machines doing complicated things can be found everywhere. |
| ELL 621.8 EXP | Exploring simple machines [kit]. [Burnaby, B.C.: assembled by Burnaby School District], 2014. This kit contains the following title: Simple machines / Sandy Szeto. 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 explores the ways in which we build and use simple machines. It compares the parts and functions of different simple machines, shows the forces involved, and explains how simple machines are incorporated into compound machines." --Page 69 of teacher's guide. NOTE: Copy 2 of this kit has only 6 copies of student book. |
| ELL 621.8 STR | Structures and mechanisms [kit]. [Burnaby, B.C.: assembled by Burnaby School District], 2014. This kit contains the following titles: Levers -- Wheels-and-axles -- Inclined planes -- Wedges -- Pulleys -- Screws. 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 structures and mechanisms, including levers, pulleys, inclined planes, and others. |
| SPF 621.8 STR | Les structures et les machines simples [kit]. [Burnaby, B.C.: assembled by Burnaby School District], 2015. Kit contains the following titles: Les plans inclinés -- Les leviers -- Les poulies -- Les coins -- Les vis -- Les roues et les esseiux. Grades: 5 (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. |