



ORC CURRICULUM MAP

Grade 7 Science

Topics Included: Unit D Structures and Forces

*Resources Included: Britannica School, TrueFLIX, Power Knowledge Suite, ScienceFLIX,
Science In Context*

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Crash Course Kids Disclaimer

These Curriculum Maps have been updated to include the YouTube educational web series *Crash Course Kids*. This web series, from the producers of *Crash Course*, is geared towards elementary grade science. It includes topics related to Earth Science, Physical Science, Biology, Astronomy, and more. These videos can sometimes contain irreverent humour. We encourage educators to preview the videos for appropriateness before showing them in a classroom or library setting.

Background and Access Information

Learn Alberta's Online Reference Centre is a \$1.2 million collection of authoritative curricular aligned resources that are licensed on behalf of all students, staff, parents and public librarians learning/teaching/supporting the Alberta curriculum.

To Access the Online Reference Centre:

1. Go to LearnAlberta.ca
2. Select English or French
3. Click on "Online Reference Centre" in the tab along the top of the screen
4. In school while on a school device, users do not need to enter a username or password. Users are able to enter any database or website instantly.
5. Access from a person device in school or remotely from outside of the school will require the user to enter a username/password once to unlock all of the resources.
6. Please share your district's ORC username/password with your students, parents of your students, student teachers and fellow staff members. Please do not share the username and password information on an open website (a website that does not require the user to login).

How to Use This Guide

Attached please find a listing of databases found on Learn Alberta's Online Reference Centre (ORC) that directly support specific learner outcomes in the grade two science and social studies curricula.

Formatting Overview for Britannica School:

Curricular Topic

Specific Learner Outcome (SLO)

Britannica School

- Elementary
 - Keyword Search "Keyword"
 - Article Title
 - Articles
 - Subject area
 - Topic
 - Subtopic
 - Article Title

Formatting Overview for PowerKnowledge Databases:

Curricular Topic

Specific Learner Outcome (SLO)

Name of the Database

- Topic
 - Subtopic
 - Article Title with Hyperlink
 - Article Sections

Formatting Overview for Science In Context:

Curricular Topic

Specific Learner Outcome (SLO)

Science In Context

- Browse Topics (link found in the top grey bar next to Home)
 - Topic
 - Introductory Article/Featured Content/Reference
 - Article Name with hyperlink

Formatting Overview for TrueFLIX:

Curricular Topic

Specific Learner Outcome (SLO)

TrueFLIX

- Topic
 - eBook Title (alphabetized listing found in the Resources & Tools link in the top right hand corner of the screen)
 - Chapters in eBook if applicable

A note about Science In Context:

Science In Context is a database that is designed for students in grades six to twelve. As such, some of the content of this database may be challenging for students in grade six.

However, this database does have several features to make it more user friendly for students with varied skill levels. First, each article indicates the reading level using a symbol just below the title of the article beside the name of the source. A green circle indicates a basic reading level, yellow square an intermediate reading level, and red triangle an advanced reading level. In addition, the "Advanced Search" feature allows users to limit the content search to a basic, intermediate or advanced reading level. This guide will include basic articles in the "At Grade Level" sections and

intermediate articles in the "Above Grade Level" sections. Each title includes a hyperlink that takes you directly to the article in the database.

Last, this database does include a customizable listen feature, as well as a text translation and the ability to download a computer generated reading of the article to an MP3 format.

If you have any questions regarding this guide or if you would like a guide for additional grades please contact Bethany Arsenault, ORC Coordinator at barsenault@thealbertalibrary.ab.ca

Grade 7 Science

Unit D: Structure and Forces

SLO 1: Describe and interpret different types of structures encountered in everyday objects, buildings, plants and animals; and identify materials from which they are made

- Recognize and classify structural forms and materials used in construction (e.g., identify examples of frame structures, such as goal posts and girder bridges, examples of shell structures, such as canoes and car roofs, and examples of frame-and-shell structures, such as houses and apartment buildings)*
- Interpret examples of variation in the design of structures that share a common function, and evaluate the effectiveness of the designs (e.g., compare and evaluate different forms of roofed structures, or different designs for communication towers)*
- Describe and compare example structures developed by different cultures and at different times; and interpret differences in functions, materials and aesthetics (e.g., describe traditional designs of indigenous people and peoples of other cultures; compare classical and current designs; investigate the role of symmetry in design)*
- Describe and interpret natural structures, including the structure of living things and structures created by animals (e.g., skeletons, exoskeletons, trees, birds' nests)*
- Identify points of failure and modes of failure in natural and built structures (e.g., potential failure of a tree under snow load, potential failure of an overloaded bridge)*

Resources for Students Reading Below Grade Level

Britannica School: Elementary (Level 1)

- Keyword Search: structures
 - Article Title: bridge
 - Article Title: architecture
 - Article Title: Golden Gate Bridge
 - Article Title: leaf
 - Article Title: feather
 - Article Title: shell
 - Article Title: Sydney Harbour Bridge
 - Article Title: bird
 - Physical Features
 - Article Title: bone
 - Article Title: Caisson
 - Article Title: dam
 - Article Title: forest products
 - Article Title: levee and dike
 - Article Title: tunnel
 - Article Title: landmarks at a glance
 - Article Title: Colosseum
 - Article Title: seven wonders of the world
 - Images: (lots of great images available – past and present)
- Keyword Search: buildings
 - Article Title: skyscraper
 - Article Title: nest
 - Article Title: Taj Mahal
 - Article Title: carpenter
- Keyword Search: building materials
 - Article Title: adobe
 - Article Title: cement
 - Article Title: concrete
 - Article Title: brick and tile
 - Article Title: limestone
 - Article Title: steel
 - Article Title: materials
- Keyword Search: exoskeleton

- Article Title: exoskeleton
- Article Title: animal
 - invertebrates
- Keyword Search: skeleton
 - Article Title: skeletal system
 - Article Title: animal
 - Vertebrates
- Keyword Search: architecture
 - Article Title: architecture
 - Article Title: Colosseum
 - Article Title: Baroque
 - Article Title: African architecture
 - Article Title: Frank Lloyd Wright
 - Article Title: pyramid
 - Article Title: Middle Ages
 - Article Title: Chichén Itzá
 - The Site

PowerKnowledge Life Science

- Topic: Human Body
 - Your Body Systems
 - [Skeletal System](#) (whole article)
- Topic: Plants
 - [How Trees Grow](#)
 - [Oak Trees](#)
 - [Coniferous Forests](#)
 - [Deciduous Forests](#)
- Keyword Search: nest
 - [Wasps](#)
 - Bald Eagles
 - [A Nest as Heavy as Your Car](#)
- Keyword Search: exoskeleton
 - Life Cycle of a Praying Mantis
 - [Changes While Growing](#)

Resources for Students Reading At or Above Grade Level

Britannica School: Middle & High School (Levels 2 & 3)

- Keyword Search: construction
 - Article Title: building construction
 - Article Title: carpentry
 - Article Title: bridge
 - Article Title: caisson
 - Article Title: cement
 - Article Title: shelter
 - Article Title: box frame construction
- Keyword Search: architecture
 - Article Title: architecture
 - Article Title: Spain
 - architecture
 - Article Title: Eastern Orthodox churches
 - architecture
 - Article Title: France
 - architecture
 - Article Title: Frank Lloyd Wright
 - Article Title: baroque period
 - architecture and painting
 - Article Title: Indian architecture
 - Article Title: Gothic revival
 - Article Title: folk art
 - architecture
 - Article Title: Japan
 - Architecture and Gardens
 - Article Title: church
- Keyword Search: materials
 - Article Title: building construction
 - Article Title: brick and tile
- Keyword Search: frame
 - Article Title: building construction
 - Article Title: framed building ** [Level 3- High school only]
- Keyword Search: girder
 - Article Title: bridge (engineering)

- Article Title: skyscraper
- Keyword Search: shell structure
 - Article Title: shell structure **[Level 3- High school only]
- Keyword Search: aesthetics
 - Article Title: the arts
 - The Arts in the Western World
- Keyword Search: symmetry
 - Article Title: interior design
- Keyword Search: skeleton
 - Article Title: skeleton
 - Article Title: human anatomy
 - Skeletal System
 - Article Title: joint
 - Article Title: animal (biology)
 - How Invertebrates Move
- Keyword Search: exoskeleton
 - Article Title: exoskeleton
 - Article Title: invertebrate
 - Arthropods
 - Article Title: insect
 - Article Title: arthropod
- Keyword Search: tree
 - Article Title: tree
- Keyword Search: nest
 - Article Title: nest
 - Article Title: bird
 - Nests
- Keyword Search: failure
 - Article Title: fatigue (physiology)
 - Characteristics and Causes in Engineering
- Keyword Search: "galloping Gertie"
 - Article Title: bridge
 - Era of Iron and Steel
 - The Long History of Bridge Building
 - Giant Suspension Bridges

ScienceFLIX

- Search Term: building
 - Article Title: Techniques of Building
 - Article Title: Skyscraper
- Search Term: girders
 - Article Title: Roads, Tunnels and Bridges
- Search Term: frames
 - Article Title: Frames and Trusses
 - Article Title: Domestic Architecture
 - Article Title: Techniques of Building
 - Article Title: Steel and Reinforced Concrete
- Search Term: exoskeleton
 - Article Title: Arthropods
 - Article Title: What is an Insect?
- Search Term: stress point
 - Article Title: The Materials of Construction
- Topic: Building and Construction
 - Watch It
 - Read It
 - Dive Deeper
 - Materials of Construction
 - Cement, Mortar and Concrete
 - Brick and Wood
 - Steel and Reinforced Concrete
 - Techniques of Building
 - Posts, Lintels and Arches
 - Frames and Trusses
 - Building Techniques for Different Structures (slide show)
 - Building Design
 - Domestic Architecture
 - A Gallery of Unusual Buildings
 - Skyscrapers
 - Explore More
 - Building and Construction
 - Architecture

- A Safe and Efficient Path
- Materials of Construction
 - Adobe
 - Cedar
 - Cement and Concrete
 - Iron and Steel
 - Limestone
 - Marble
 - Plaster
 - Sandstone
 - Stonemasonry
 - Wood and Wood Products
- Techniques of Building
 - Bridge
 - Cathedral
 - Dam
 - Industrial Architecture
 - Roof and Roofing
 - Stadium
 - Theatre Architecture
 - Truss
 - Tunnel
- Building Design
 - Homes and Housing

TrueFLIX

- Topic: Ancient Civilizations
 - eBook Title: Ancient China
 - Explore More
 - Scholastic Go! Articles
 - Great Wall of China
 - eBook Title: The Ancient Maya
 - Explore More
 - Scholastic Go! Articles
 - Chichén Itzá
 - Pre-Columbian Ruins

- Pyramids
- eBook Title: The Inca Empire
 - Explore More
 - Scholastic Go! Articles
 - Machu Picchu

Science in Context

- Topic: Bridges, Dams and Tunnels
 - Overview – [Bridge](#) (World of Invention, 2010)
 - Featured Content
 - [Dam and Dyke](#) (World of Invention, updated 2006)
 - [Tunnel](#) (World of Invention, updated 2006)
 - [Elegant Spans: Suspension Bridges](#) (Science and its Times, 2001)
 - Reference
 - [Bridge](#) (UXL Encyclopedia of Science, 2015)
 - [Dam](#) (UXL Encyclopedia of Science, 2015)
 - [Tunnel](#) (UXL Science, 2008)
 - [Bridge](#) (World of Invention, 2005)
 - [Cantilever](#) (World of Invention, updated 2006)
 - [Building an Empire and a Legacy: Roman Engineering](#) (Science and its Times, 2001)
- Topic: Architecture
 - Reference
 - [Arch](#) (UXL Science, 2008)
 - [Arch](#) (World of Invention, updated 2006)
 - [Dome](#) (World of Invention, updated 2006)
 - [Flying Buttress](#) (World of Invention, updated 2006)
 - [Vaulting](#) (World of Invention, updated 2006)
 - [The Gothic Cathedral: Height, Light and Color](#) (Science and its Times, 2001)
 - [The Impact of Mayan Architecture](#) (Science and its Times, 2001)
- Advanced Search: “building materials”
 - [Composite Materials](#) (UXL Encyclopedia of Science, 2015)
 - [Brick](#) (UXL Science, 2008)

- [Column, Architectural](#) (World of Invention, updated 2006)
- [Concrete and Cement](#) (World of Invention, updated 2006)

Crash Course Kids

- [What's an Engineer?: Crash Course Kids #12.1](#)

SLO 2: Investigate and analyze forces within structures, and forces applied to them

- *Recognize and use units of force and mass, and identify and measure forces and loads*
- *Identify examples of frictional forces and their use in structures (e.g., friction of a nail driven into wood, friction of pilings or footings in soil, friction of stone laid on stone)*
- *Identify tension, compression, shearing and bending forces within a structure; and describe how these forces can cause the structure to fail (e.g., identify tensile forces that cause lengthening and possible snapping of a member; identify bending forces that could lead to breakage)*
- *Analyze a design, and identify properties of materials that are important to individual parts of the structure (e.g., recognize that cables can be used as a component of structures where only tensile forces are involved; recognize that beams are subject to tension on one side and compression on the other; recognize that flexibility is important in some structures)*
- *Infer how the stability of a model structure will be affected by changes in the distribution of mass within the structure and by changes in the design of its foundation (e.g., infer how the stability of a structure will be affected by increasing the width of its foundation)*

Resources for Students Reading Below Grade Level

Britannica School: Elementary (Level 1)

- Keyword Search: force

- Article Title: force
- Article Title: bridge
- Article Title: friction
- Keyword Search: arch
 - Article Title: architecture
- Keyword Search: tension
 - Article Title: spring
 - Types of Springs (also includes compression and torsion)
- Keyword Search: mass
 - Article Title: matter
 - Introduction
 - Article Title: gravity
 - Newton's Laws of Gravity
- Keyword Search: beam
 - Article Title: bridge

PowerKnowledge Physical Science

- Topic: Force and Motion
 - Gravity
 - All About Gravity
 - [How Much Does it Weigh?](#)
- Keyword Search: force
 - [Force and Motion with Graphic Organizers](#)
 - [All About Force and Motion](#)
 - [Screws](#)

PowerKnowledge Earth & Space Science

- Topic: Natural Disasters
 - Earthquakes
 - [Building Better Buildings](#)

Resources for Students Reading At or Above Grade Level

Britannica School: Middle & High School (Levels 2 & 3)

- Keyword Search: stress
 - Article Title: fatigue
 - Article Title: bridge

- Characteristics and Causes in Engineering
- Keyword Search: design
 - Article Title: industrial design
- Keyword Search: force
 - Article Title: force
- Keyword Search: load
 - Article Title: bridge
 - Article Title: materials testing
 - Article Title: wood
 - Mechanical Properties
 - Article Title: building construction
 - Article Title: mechanics
- Keyword Search: frictional force
 - Article Title: friction
 - Article Title: energy
- Keyword Search: nail
 - Article Title: nail
- Keyword Search: tension and compression
 - Article Title: force
 - Elastic Forces
 - Article Title: concrete
- Keyword Search: shearing
 - Article Title: concrete
 - Article Title: building construction
 - Other Kinds of Construction
 - Article Title: Wood
 - Mechanical Properties
- Keyword Search: tensile
 - Article Title: materials testing
 - Article Title: iron and steel industry
 - Principal Properties and Specifications
- Keyword Search: flexible
 - Article Title: roads and streets
 - Construction

- Search Term: load
 - Article Title: Posts, Lintels and Arches
 - Article Title: Techniques of Building
 - Article Title: Building and Construction
 - Article Title: Skyscrapers
- Search Term: footings
 - Article Title: Domestic Architecture
- Search Term: tension
 - Article Title: Steel and Reinforced Concrete
 - Article Title: Frames and Trusses
 - Article Title: Brick and Wood
- Search Term: compression
 - Article Title: The Materials of Construction
 - Article Title: Cement, Mortar and Concrete
- Search Term: bending
 - Article Title: Modern Materials
- Search Term: tensile
 - Article Title: Dams and Reservoirs
- Search Term: cables
 - Article Title: Roads, Tunnels and Bridges
- Search Term: flexibility
 - Article Title: The Bones of the Body
- Topic: Building Construction
 - Explore More
 - Building Design
 - Soil Mechanics
 - Nails, Screws & Rivets
- Topic: Force and Motion
 - Watch It
 - Read It
 - Dive Deeper
 - Types of Forces
 - Friction and other Contact Forces
 - Explore More
 - The Science of Mechanics
 - Contact Forces

- Types of Forces
 - Force

TrueFLIX

- Topic: Physical Science
 - eBook Title: Friction
 - Explore More
 - Scholastic GO! Articles
 - Contact Forces
 - Force

Science in Context

- Advanced Search: “force OR mass”
 - [Mass](#) (UXL Encyclopedia of Science, 2015)
 - [Mass](#) (World of Scientific Discovery, 2007)
 - [Force](#) (World of Scientific Discovery, 2007)
 - [Friction](#) (World of Physics, updated 2014)
- Advanced Search: structural failures
 - [Architecture and Structural Analysis](#) (World of Forensic Science, 2016)
 - [Bridge](#) (World of Innovation, 2010)
 - [Engineering, Failure Analysis](#) (World of Forensic Science, 2016)
 - [Metal Fatigue](#) (Gale Encyclopedia of Science, 2014)

SLO 3: Investigate and analyze the properties of materials used in structures

- *Devise and use methods of testing the strength and flexibility of materials used in a structure (e.g., measure deformation under load)*
- *Identify points in a structure where flexible or fixed joints are required, and evaluate the appropriateness of different types of joints for the particular application (e.g., fixed jointing by welding, gluing or nailing; hinged jointing by use of pins or flexible materials)*
- *Compare structural properties of different materials, including natural materials and synthetics*

- *Investigate and describe the role of different materials found in plant and animal structures (e.g., recognize the role of bone, cartilage and ligaments in vertebrate animals, and the role of different layers of materials in plants)*

Resources for Students Reading Below Grade Level

Britannica School: Elementary (Level 1)

- Keyword Search: joint
 - Article Title: bridge
 - Article Title: skeletal system
 - How the Skeletal System is Connected
- Keyword Search: bone
 - Images (many here)
 - Article Title: bone
 - Article Title: skeletal system
 - Article Title: knee
- Keyword Search: cartilage
 - Article Title: skeletal system
 - How the Skeletal System is Connected
- Keyword Search: ligament
 - Article Title: knee
 - Article Title: arm
 - Structure
- Keyword Search: materials properties
 - Article Title: materials
 - Article Title: glass
 - Article Title: plastics
 - Article Title: polymer
 - Article Title: nylon

**Hint: search various animal and plant names to find examples of their body parts / composition. There are hundreds to view.

PowerKnowledge Earth & Space Science

- Keyword Search: flexible
 - Earthquakes

- [Building Better Buildings](#)

PowerKnowledge Life Science

- Topic: Plants
 - [Plant Development and Growth](#)
- Topic: Human Body
 - Your Body Systems
 - [Skeletal System](#) (whole article)
 - Muscular System
 - [Muscles and Bones](#)
- Keyword Search: cartilage
 - Poisonous Stingrays
 - [Cousins of the Shark](#)
 - Sharks: Ocean Hunters
 - [Bathing Beauties](#)

Resources for Students Reading At or Above Grade Level

Britannica School: Middle & High School (Levels 2 & 3)

- Keyword Search: flexible
 - Article Title: fatigue
 - Characteristics and Causes in Engineering
- Keyword Search: synthetic
 - Article Title: diamond
 - Article Title: plastics
 - Article Title: nylon
 - Article Title: polymer
- Keyword Search: structure
 - Article Title: iron and steel industry
 - Composition
- Keyword Search: materials

- Article Title: materials testing
- Keyword Search: joint
 - Article Title: bridge
 - Article Title: joint (skeleton)
 - Article Title: carpentry
 - Article Title: human anatomy
 - Skeletal System
 - Article Title: materials testing
 - Article Title: engineering
 - Branches of Engineering
 - Materials Engineering
 - Article Title: concrete
 - Article Title: asphalt
 - Article Title: plaster and wallboard
 - Article Title: adobe
 - Article Title: brick and tile
- Keyword Search: wood
 - Article Title: wood
 - Article Title: lumber

ScienceFLIX

- Search Term: materials properties
 - Article Title: The Materials of Construction
- Search Term: joints
 - Article Title: The Bones of the Body
 - Article Title: Systems of the Body
 - Skeletal System
 - Muscles of the Body
- Search Term: flexibility
 - Article Title: The Bones of the Body
 - Article Title: Plastics and other Polymers
- Topic: Building and Construction
 - Explore More
 - Materials of Construction
 - Adobe
 - Cement and Concrete

- Iron and Steel
 - Limestone
 - Sandstone
 - Stonemasonry
 - Wood and Wood Products
- Topic: Engineering Design
 - Explore More
 - Criteria and Constraints
 - Strength of Materials
 - Modeling and Testing
 - Composite Material
 - Materials Engineering
 - Modern Materials

Science in Context

- Topic: skeletal system
 - Reference
 - [Skeletal System](#) (UXL Complete Life Science Resource, 2009)
 - [Skeletons](#) (Biology, 2016)
 - [Skeletal System](#) (World of Biology, 2010)
- Advanced Search: “building materials”
 - [Composite Materials](#) (UXL Encyclopedia of Science, 2015)
- Advanced Search: flexibility
 - [Elastic Cartilage](#) (World of Anatomy and Physiology, 2007)
 - [Adhesives and Glues](#) (World of Chemistry, updated 2013)
- Advanced Search: nail
 - [Friction](#) (UXL Encyclopedia of Science, 2015)
 - [Nail](#) (World of Invention, 2006)
- Advanced Search: “synthetic material”
 - [Laminate](#) (World of Invention, 2006)
 - [Plastics](#) (Environmental Encyclopedia, 2011)
- Advanced Search: cartilage
 - [Cartilage](#) (World of Anatomy and Physiology, 2007)
 - [Elastic Cartilage](#) (World of Anatomy and Physiology, 2007)
- Advanced Search: ligament

- [Bone, Ligaments, Tendons](#) (World of Sport Science, 2007)
- [Connective Tissue](#) (Biology, 2016)
- Advanced Search: “plant anatomy”
 - [Plant Anatomy](#) (UXL Complete Life Science Resource, 2009)
 - [Plant](#) (UXL Encyclopedia of Science, 2015)
 - [Plants](#) (UXL Complete Life Science Resource, 2009)

Crash Course Kids

- [Material World: Crash Course Kids #40.1](#)
- [Material Magic - Making Diamonds: Crash Course Kids #40.2](#)

SLO 4: Demonstrate and describe processes used in developing, evaluating and improving structures that will meet human needs with a margin of safety

- *Demonstrate and describe methods to increase the strength of materials through changes in design (e.g., corrugation of surfaces, lamination of adjacent members, changing the shape of components, changing the method of fastening)*
- *Identify environmental factors that may affect the stability and safety of a structure, and describe how these factors are taken into account (e.g., recognize that snow load, wind load and soil characteristics need to be taken into account in building designs; describe example design adaptations used in earthquake-prone regions)*
- *Analyze and evaluate a technological design or process on the basis of identified criteria, such as costs, benefits, safety and potential impact on the environment*

Resources for Students Reading Below Grade Level

Britannica School: Elementary (Level 1)

- Keyword Search: material strength
 - Article: materials
 - Article Title: bridge

- Article Title: architecture
 - Materials
 - Elements of Design
- Keyword Search: corrugate
 - Article Title: Pier Luigi Nevi
 - Article Title: cardboard
- Keyword Search: lamination
 - Article Title: lumber
 - Laminated Woods and Plywoods
 - Article Title: forest products
 - Glued Products
 - Article Title: plywood
 - Article Title: plastics
 - Manufacture
- Keyword Search: wind load
 - Article Title: bridge
- Keyword Search: earthquake
 - Article Title: building construction
 - Other Kinds of Construction

PowerKnowledge Life Science

- Keyword Search: construction
 - Buy Green
 - [More Earth Friendly Products](#)

PowerKnowledge Earth & Space Science

- Topic: Natural Disasters
 - Earthquakes
 - [Building Better Buildings](#)

Resources for Students Reading At or Above Grade Level

Britannica School: Middle & High School (Levels 2 & 3)

- Keyword Search: design strength
 - Article Title: bridge
- Keyword Search: construction
 - Article Title: earthquake

- Reducing Earthquake Hazards
- Keyword Search: aesthetics
 - Article Title: industrial design
- Keyword Search: corrugated
 - Article Title: building construction
 - Steel
 - The Concrete Dome
 - Article Title: dam (engineering)
 - Construction Techniques
- Keyword Search: lamination
 - Article Title: lamination
 - Article Title: wood
 - Laminated Wood
 - Plywood and Laminated Wood
 - Particleboard
 - Veneer
 - Article Title: veneer
 - Article Title: Industrial Glass
 - Lamination
 - Strengthening
 - Article Title: plastic
 - Sandwich Laminates
 - Compression Molding
 - Thermoplastic and Thermosetting
 - Article Title: glue-laminated timber
 - Article Title: building construction
 - Enclosure Systems
 - Timber
 - Partitions
 - Article Title: safety glass
- Keyword Search: "snow load"
 - Article Title: architecture
 - Materials and Techniques

ScienceFLIX

- Search Term: earthquakes

- Article Title: Engineering for Earthquakes
- Search Term: lamination
 - Article Title: Plastics and other Polymers
- Search Term: “materials strength”
 - Article Title: Modern Materials
- Topic: Building Construction
 - Explore more
 - Building Design
 - Building Codes
 - Fireproof Material
 - Insulating Material
 - Waterproofing Basements
 - Window (architecture)
- Topic: Engineering Design
 - Dive Deeper
 - Criteria and Constraints
 - Technical Specifications
 - The Trade-Off Matrix
 - Environmental Impact Assessment
 - Modelling and Testing
 - CAD/CAM
 - Quality Control
 - Real-World Applications
 - Building and Construction
 - Triumphs of Engineering (slideshow)
 - Explore More
 - Engineering Design
 - Engineering
 - Engineering, History of
 - Engineers and Their Science
 - Industrial Design
 - Design
 - Criteria and Constraints
 - Building Code
 - Environmental Law (USA)
 - Strength of Materials

- Urban Planning
- Modeling and Testing
 - Model
- Real World Applications
 - Architecture
 - Bridge
 - Civil Engineering
 - Modern Materials

Science in Context

- Advanced Search: corrugated OR laminate
 - [Corrugated Iron](#) (World of Invention, 2006)
 - [Laminate](#) (World of Invention, 2006)
- Advanced Search: “earthquake proofing”
 - [Earthquake-Proofing Techniques](#) (UXL Science, updated 2014)
 - [Earthquake-Proofing Techniques](#) (World of Invention, updated 2014)
 - [Earthquake Safety](#) (UXL Encyclopedia of Weather and Natural Disasters, 2016)
- Advanced Search: “structural analysis”
 - [Architecture and Structural Analysis](#) (World of Forensic Science, 2016)
- Advanced Search: “building materials”
 - [Energy Conservation and Efficiency](#) (Alternative Energy, 2012)
 - [Fireproofing Techniques](#) (World of Invention, updated 2006)
- Advanced Search: architecture
 - [Sustainable Architecture](#) (Environmental Encyclopedia, updated 2011)
 - [Environmental Design](#) (Environmental Encyclopedia, updated 2015)
- Advanced Search: “Gallopig Gertie”
 - [The Gallopig Gertie: what bridge engineers learned from a spectacular failure](#) (Odyssey, May/June 2014)

Crash Course Kids

- [Material World: Crash Course Kids #40.1](#)

- [Material Magic - Making Diamonds: Crash Course Kids #40.2](#)
 - (Playlist of 17 videos) [Engineering: The Engineering Process](#)
-