# ORC CURRICULUM MAP

## Grade 6 Science

*Topics Included: Air and Aerodynamics, Flight, Sky Science, Evidence and Investigation. Trees and Forests*

*Resources Included: Britannica School: Elementary, PowerKnowledge Physical Science, Science In Context, ScienceFLIX, PebbleGO Science, PowerKnowledge Earth and Space Science, TrueFLIX, PebbleGO Social Studies, PowerKnowledge Life Science*

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online reference centre

the learning and teaching toolbox

# 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 of 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 six science curriculum.

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 PebbleGO Databases:
**Curricular Topic**

*Specific Learner Outcome (SLO)*

Name of the Database

- Topic
  - Subtopic
    - Article Title
      - Article Sections

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 ScienceFLIX:

**Curricular Topic**

*Specific Learner Outcome (SLO)*

ScienceFLIX

- Browse All Topics, Topic Heading
  - Subject
    - Content Type
      - "Set my Reading Level" (top right-hand side of the screen)
        - Article Sections
    - Content Type
      - Sub-topic

- Article or video

Formatting Overview for TrueFLIX:

**Curricular Topic**

*Specific Learner Outcome (SLO)*

TrueFLIX

- 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 6 Science

## Topic A: Air and Aerodynamics

*SLO: Provide evidence that air takes up space and exerts pressure, and identify examples of these properties in everyday applications.*
*SLO: Provide evidence that air is a fluid and is capable of being compressed, and identify examples of these properties in everyday applications.*

**Resources for Students Reading At or Above Grade Level**

Britannica School: Elementary

- Keyword Search: Air
  - Air (Atmospheric gas)
  - Atmosphere (Gaseous Envelope)
    - Article Sections: Introduction, Atmospheric Pressure

PowerKnowledge Physical Science

- Energy and Matter
  - States of Matter
    - Gases

Science In Context

- Advanced Search: Air (Basic Content Level selected)
  - Reference
    - Air Pressure (UXL Encyclopedia of Weather and Natural Disasters, 2016)
  - Experiments
    - Air (experiment Central: Understanding Scientific Principles Through Projects, 2010)

ScienceFLIX

- Earth Science

- Atmosphere and Weather
  - Dive Deeper!
    - Atmospheric Dynamics
      - Air and Its Composition

**Resources for Students Reading Above Grade Level**

ScienceFLIX

- Earth Science
  - Atmosphere and Weather
    - Explore More
      - Atmospheric Conditions
        - Air Pressure

*SLO: Describe and demonstrate instances in which air movement across a surface results in lift – Bernoulli's Principle.*

**Resources for Students Reading At or Above Grade Level**

Britannica School: Elementary

- Articles
  - Science and Mathematics
    - Machines, Tools, and Technology
      - Transportation
        - Airplane
          - Article Section: Introduction, How Airplanes Fly

Science In Context

- Advanced Search: Bernoulli's Principle (Basic Content Level selected)
  - Reference
    - Bernoulli's Principle (UXL Science, August 24, 2011)
    - Fluid Dynamics (UXL Encyclopedia of Science, 2015)
    - Aerodynamics (UXL Encyclopedia of Science, 2015)
  - Websites

        - Bernoulli's Principle.

**Resources for Students Reading Above Grade Level**

Science In Context

- Browse Topics
    - Bernoulli, Daniel
        - Featured Content
            - Article: Bernoulli's Principle (World of Physics, 2001) *

*SLO: Recognize that in order for devices or living things to fly, they must have sufficient lift to overcome the downward force of gravity.*
*SLO: Identify adaptations that enable birds and insects to fly.*

**Resources for Students Reading At or Above Grade Level**

Britannica School: Elementary

- Articles
    - Animals
        - Birds
            - Bird
                - Article Section: Physical Features, Flight and Basic Structure

Science In Context

- Browse Topics
    - Insects
        - Introductory Article (UXL Complete Life Science Resource, May 5, 2010)
- Advanced Search: Animal Flight (Basic Content Level selected)
    - Magazines
        - Fancy fliers: scientists are discovering the secrets to the hummingbird's flying feats
- Advanced Search: Flight (Basic Content Level selected)
    - Reference

- Birds (UXL Complete Life Science Resource, July 2009)

Crash Course Kids

- Defining Gravity: Crash Course Kids #4.1
- Down to Earth: Crash Course Kids #4.2
- The Great Escape: Crash Course Kids #13.1

*SLO: Recognize that streamlining reduces drag, and predict the effects of specific design changes on the drag of a model aircraft or aircraft components.*

**Resources for Students Reading At or Above Grade Level**

Britannica School: Elementary

- Articles
  - Science and Mathematics
    - Machines, Tools, and Technology
      - Transportation
        - Airplane
          - Article Section: introduction, Types of Airplanes, Parts of an Airplane, How Airplanes Fly
        - Concorde
          - Article Sections: Introduction, The Speed of the Concorde

PowerKnowledge Physical Science

- Force and Motion
  - Motion in Our World
    - Airplanes
  - Simple Machines
    - Wedges
      - Article Section: Wedges and Air

Science In Context

- Advanced Search: Drag (Basic Content Level selected)
    - Reference
        - Wind Tunnel (UXL Science, June 1, 2008)
        - Aerodynamics (UXL Encyclopedia of Science, 2015)
        - Aircraft (UXL Encyclopedia of Science, 2015)
        - Fluid Dynamics (UXL Encyclopedia of Science, 2015)
            - Article Section: Shape and Drag
- Browse Topics
    - Aerodynamics
        - Featured Content
            - Aerodynamics (UXL Encyclopedia of Science, 2015)
            - Aircraft (UXL Encyclopedia of Science, 2015)

**Resources for Students Reading Above Grade Level**

Science In Context

- Browse Topics
    - Aerodynamics
        - Introductory Article (World of Earth Science, July 16, 2007)
    - Aviation
        - Featured Content
            - Physics of Flight (World of Physics, 2001)

## Topic B: Flight

*SLO: Conduct tests of a model parachute design, and identify design changes to improve the effectiveness of the design.*
*SLO: Conduct Tests of glider designs; and modify a design so that a glider will go further, stay up longer or fly in a desired way; e.g., fly in a loop, turn to the right.*

**Resources for Students Reading At Grade Level**

Britannica School: Elementary

- Articles
  - Science and Mathematics
    - Machines, Tools, and Technology
      - Transportation
        - Glider
          - Article Section: Introduction, How Gliders Work

Science In Context

- Advanced Search: Bernoulli's Principle (Basic Content Level selected)
  - Experiments
    - Flight (experiment Central: Understanding Scientific Principles Through Projects, 2010)

ScienceFLIX

- Tech, Math, & Engineering
  - Engineering Design
    - Read It!
      - "Set my Reading Level 1" (top right-hand side of the screen)
    - Dive Deeper!
      - Criteria and Constraints
        - The Trade-off Matrix
      - Modeling and Testing
        - Product Testing

**Resources for Students Reading Above Grade Level**

ScienceFLIX

- Tech, Math, & Engineering
    - Explore More
        - Modeling and Testing
            - Model
                - Article Sections: Models in Industry and Engineering, Aircraft and Automobile Design
        - Real-World Applications
            - Transportation
                - Article Section: Airplanes

*SLO: Describe the design of a hot-air balloon and the principles by which its rising and falling are controlled.*
*SLO: Recognize the importance of stability and control to aircraft flight; and design, construct and test control surfaces.*

**Resources for Students Reading At Grade Level**

Britannica School: Elementary

- Articles
    - Science and Mathematics
        - Machines, Tools, and Technology
            - Transportation
                - Balloon
                    - Article Section: Introduction, Types of Balloons, How Balloons Fly

ScienceFLIX

- Tech, Math, & Engineering
    - Transportation
        - Dive Deeper!
            - Ground, Sea, and Air Transport
                - Aviation

- “Set my Reading Level 1” (top right-hand corner of the screen)

*SLO Describe differences in design between aircraft and spacecraft, and identify reasons for the design differences*

**Resources for Students Reading At Grade Level**

Crash Course Kids

- The Great Escape: Crash Course Kids #13.1
- Over (to) The Moon: Crash Course Kids #13.2

## Topic C: Sky Science

*SLO: Recognize that the Sun and stars emit the light by which they are seen and that most other bodies in space, including Earth's Moon, planets and their moons, comets, and asteroids, are seen by reflected light.*

**Resources for Students Reading Below Grade Level**

** A note about the resources below. These resources are designed for younger learners and the interface reflects that. For students who will not be comfortable using this younger interface, printing the article instead of accessing it online is recommended.*

PebbleGO Science

- Earth and Space Sciences
    - Space Science
        - Our Solar System
            - The Sun
            - The Moon
            - Meteors and Asteroids

**Resources for Students Reading At or Above Grade Level**

Britannica School: Elementary

- Articles
    - Science and Mathematics
        - Physical Sciences
            - Astronomy
                - Asteroid
                - Comet
                - Moon
                - Solar System
                    - Article Sections: Introduction, The Sun, Asteroids, Comets
                - Star
                - Sun

PowerKnowledge Physical Science

- Energy and Matter
  - Light and Sound
    - All About Light
      - Article Section: Reflected Light

PowerKnowledge Earth and Space Science

- Space
  - Constellations
    - Suns and Other Stars with Graphic Organizers
      - Article Section: Stars and Planets

Science In Context

- Advanced Search: Sun (Basic Content Level selected)
  - References
    - Sun (UXL Encyclopedia of Weather and Natural Disasters, 2016)
  - Magazines
    - The sun: It's a superstar (Ranger Rick, June 1994)
    - The sun: our stormy star (National Geographic Explorer, April 2005)

ScienceFLIX

- Space Science
  - Solar System
    - Read It!
      - "Set my Reading Level 1" (top right-hand side of the screen)
        - Article Sections: Solar System, The Sun, Moons, Asteroids, Comets, Meteors
    - Dive Deeper!
      - The Sun and Planets
        - The Sun
          - "Set my Reading Level 1" (top right-hand side of the screen)

- Article Sections: The Sun, The Sun's Importance
- Other Objects in Orbit
  - Comets
    - "Set my Reading Level 1" (top right-hand side of the screen)
  - Asteroids
    - "Set my Reading Level 1" (top right-hand side of the screen)

- Stars
  - Read It!
    - "Set my Reading Level 1" (top right-hand side of the screen)
      - Article Sections: Stars, The Sun as a Star

TrueFLIX

- Science and Nature
  - Outer Space
    - Meteor Showers
      - Chapters: Showers of Light (1), Space Rocks (2)
    - The Solar System
      - Chapter: The Sun (2), Not Just Planets (5)
    - Stars
      - Chapters: All Grown Up, Star Studies
  - The Solar System
    - Planet Earth
      - Chapter: The Moon (3)

Crash Course Kids

- Here Comes the Sun: Crash Course Kids #5.1
- Glow On: Crash Course Kids #20.2

**Resources for Students Reading Above Grade Level**

ScienceFLIX

- Space Science
  - Planet Earth

- Explore More
  - Planet Earth
    - Solar System
      - Article Sections: The Sun, The Satellites, Asteroids and Meteoroids, Comets
- Stars
  - Explore More
    - Stars
      - The Sun
        - Article Sections: The Sun, Solar Cycle, Rotations of the Sun, The Sun's Influence on Earth

*SLO: Describe the location and movement of individual stars and groups of stars (constellations) as they move through the night sky.*

**Resources for Students Reading Below Grade Level**

** A note about the resources below. These resources are designed for younger learners and the interface reflects that. For students who will not be comfortable using this younger interface, printing the article instead of accessing it online is recommended.*

PebbleGO Science

- Earth and Space Sciences
  - Space Science
    - Stars

**Resources for Students Reading At or Above Grade Level**

Britannica School: Elementary

- Articles
  - Science and Mathematics
    - Physical Sciences
      - Astronomy
        - Constellation

PowerKnowledge Earth and Space Science

- Space
  - Constellations
    - Andromeda
    - Gemini
    - Orion
    - Pisces
    - Sun and Other Stars with Graphic Organizers
    - The Big Dipper
    - The Little Dipper

Science In Context

- Advanced Search: Constellations (Basic Content Level selected)
  - Reference
    - Constellations (Astronomy & Space: From the Big Bang to the Big Crunch, August 30, 2007)
    - Constellation (UXL Encyclopedia of Science, 2015)
    - The Changing Sky! (Science Matters: Plants, Sounds, Seasons and Night Sky, a Weekly Reader publication, January 1993)
    - Orion, the Mighty Hunter (Science Matters: Plants, Sounds, Seasons and Night Sky, a Weekly Reader publication, January 1993)
  - Experiments
    - Stars (Experiment Central: Understanding Scientific Principles Through Projects, 2010)

ScienceFLIX

- Space Science
  - Stars
    - Dive Deeper
      - Star Groupings
        - The Night Sky and Constellations
          - "Set my Reading Level 1" (top right-hand side of the screen)
        - A Gallery of Constellations (Slideshow)

TrueFLIX

- Science and Nature
    - Outer Space
        - Constellations

Crash Course Kids

- Star Personalities : Crash Course Kids 25.2
- Super Stars (Constellations) : Crash Course Kids 31.1
- Constellation Locations: Crash Course Kids 31.2
- Zodiac Constellations : Crash Course Kids 37.1
- Seeing Stars: Crash Course Kids #20.1

**Resources for Students Reading Above Grade Level**

ScienceFLIX

- Space Science
    - Stars
        - Explore More
            - Star Groupings
                - Big Dipper
                - Constellation
                - Littler Dipper
                - Polaris
                - Ursa Major
                - Ursa Minor

*SLO: Recognize that the apparent movement of objects in the night sky is regular and predictable, and explain how this apparent movement is related to Earth's rotation.*

**Resources for Students Reading At or Above Grade Level**

PowerKnowledge Earth and Space Science

- Space
    - Constellations

        - Sun and Other Stars with Graphic Organizers
            - Article Sections: The View from Here, The Sun

Science In Context

- Advanced Search: Earth's Rotation (Basic Content Level selected)
    - Reference
        - Calendar (UXL Encyclopedia of Science, 2015)
    - Experiments
        - Rotation and Orbits (Experiment Central: Understanding Scientific Principles Through Projects, 2010)

ScienceFLIX

- Space Science
    - Planet Earth
        - Read It!
            - "Set my Reading Level 1" (top right-hand corner of the screen)
                - Article Sections: Earth's Rotation, Earth's Revolution, Precession
        - Dive Deeper!
            - Planetary Characteristics
                - Earth's Tilt and the Seasons (Closer Look)

TrueFLIX

- Science and Nature
    - Outer Space
        - Constellations
            - Chapter: The View From Earth (2)

Crash Course Kids

- The Ecliptic : Crash Course Kids 37.2
- Earth's Rotation & Revolution: Crash Course Kids 8.1
- Everything Revolves Around You: Crash Course Kids #22.1
- Orbits are Odd: Crash Course Kids #22.2

*SLO: Describe seasonal changes in the length of the day and night and in the angle of the Sun above the horizon.*

**Resources for Students Reading Below Grade Level**

** A note about the resources below. These resources are designed for younger learners and the interface reflects that. For students who will not be comfortable using this younger interface, printing the article instead of accessing it online is recommended.*

PebbleGO Science

- Earth and Space Sciences
  - Space Science
    - Planets
      - Earth

**Resources for Students Reading At Grade Level**

Britannica School: Elementary

- Articles
  - Science and Mathematics
    - Physical Sciences
      - Astronomy
        - Planets
          - Article Section: Motion
- Keyword Search: Earth
  - Earth (planet)
    - Article Sections: Orbit and Spin, Seasons

PowerKnowledge Earth and Space

- Space
  - Planets
    - Earth
      - Article Sections: Orbiting the Sun, Earth's Axis

Science In Context

- Advanced Search: Seasons (Basic Content Level selected)
  - Reference

        - Seasons (Astronomy & Space: From the Big Bang to the Big Crunch, August 30, 2007)
        - Season (UXL Encyclopedia of Science, 2015)
        - Season (UXL Encyclopedia of Weather and Natural Disasters, 2016)

ScienceFLIX
- Space Science
    - Planet Earth
        - Dive Deeper!
            - Planetary Characteristics
                - Earth's Tilt and the Seasons (Closer Look)

TrueFLIX
- Science and Nature
    - The Solar System
        - Planet Earth
            - Chapter: The Blue Marble (1)

Crash Course Kids
- Seasons and the Sun: Crash Course Kids 11.1

**Resources for Students Reading Above Grade Level**

ScienceFLIX
- Space Science
    - Planet Earth
        - Explore More
            - Planet Earth
                - Earth
            - Solar and Lunar Effects
                - Season

*SLO: Recognize that the Moon's phases are regular and predictable, and describe the cycle of its phases.*

**Resources for Students Reading Below Grade Level**

** A note about the resources below. These resources are designed for younger learners and the interface reflects that. For students who will not be comfortable using this younger interface, printing the article instead of accessing it online is recommended.*

PebbleGO Science

- Earth and Space Sciences
  - Our Solar System
    - Moon Phases

**Resources for Students Reading At Grade Level**

Britannica School: Elementary

- Articles
  - Science and Mathematics
    - Physical Sciences
      - Astronomy
        - Moon
          - Article Section: Orbit and Spin, Phases and Eclipses

PowerKnowledge Earth and Space

- Space
  - The Moon
    - Phases of the Moon

Science In Context

- Browse Topics
  - Moon
    - Featured Content
      - Lunar Phases (Astronomy & Space: From the Big Bang to the Big Crunch, August 30, 2008

ScienceFLIX

- Space Science
  - Planet Earth
    - Dive Deeper!
      - In Earth's Orbit
        - The Moon
          - "Set my Reading Level 1" (top right-hand corner of the screen)
            - Article Sections: The Moon, Phases of the Moon, Orbit of the Moon

TrueFLIX

- Science and Nature
  - The Solar System
    - The Moon
      - Chapters: Satellite in the Sky (1), Light and Shadow (3)

**Resources for Students Reading Above Grade Level**

Science In Context

- Browse Topics
  - Moon
    - Introductory Article (World of Earth Science, 2010)

ScienceFLIX

- Space Science
  - Solar System
    - Explore More
      - The Sun and Planets
        - The Moon
          - Article Sections: The Moon, Lunar Motion and Appearance, Orbit, Phases, The Months: Synodic and Sidereal

*SLO: Recognize that the other eight known planets, which revolve around the Sun, have characteristics and surface conditions that are different from Earth; Identify examples of those differences.*

**Resources for Students Reading Below Grade Level**

** A note about the resources below. These resources are designed for younger learners and the interface reflects that. For students who will not be comfortable using this younger interface, printing the article instead of accessing it online is recommended.*

PebbleGO Science

- Earth and Space Sciences
    - Space Science
        - Our Solar System
            - What Is The Solar System
            - The Planets
        - Planets
            - Earth
            - Jupiter
            - Mars
            - Mercury
            - Neptune
            - Pluto: Dwarf Planet
            - Saturn
            - Uranus
            - Venus

PebbleGO Social Studies

- My World
    - In My World
        - Article Sections: Earth Is Our World, Earth and the Planets, Oceans

**Resources for Students Reading At and Above Grade Level**

Britannica School: Elementary

- Articles

    - Science and Mathematics
        - Physical Sciences
            - Astronomy
                - Jupiter
                - Mars
                - Mercury
                - Neptune
                - Planets
                - Pluto
                - Saturn
                - Solar System
                - Uranus
                - Venus
- Keyword Search: Earth
    - Earth (planet)

PowerKnowledge Earth and Space

- Space
    - Planets
        - Earth
        - Jupiter
        - Mars
        - Mercury
        - Neptune
        - Saturn
        - Uranus
        - Venus
    - Space and Our Solar System
        - Pluto and Other Dwarf Planets
            - Article Sections: What is a Planet?, Pluto is Not a Planet, The First Dwarf Planet, Pluto's Moons, Cool Facts and Fun Figures

Science In Context

- Browse Topics
    - Mars

        - Reference
            - Mars (*Astronomy & Space: From the Big Bang to the Big Crunch, June 1, 2011*)
    - Mercury
        - Reference
            - Mercury (*Astronomy & Space: From the Big Bang to the Big Crunch, July 20, 2008* )
    - Neptune
        - Reference
            - Neptune (*UXL Encyclopedia of Science, 2015*)
    - Pluto
        - Reference
            - Pluto (*UXL Encyclopedia of Science, 2015*)
            - Pluto (*Astronomy & Space: From the Big Bang to the Big Crunch, May 5, 2010*)
    - Saturn
        - Reference
            - Saturn (*UXL Encyclopedia of Science, 2015*)
- Advanced Search: Earth (Basic Content Level selected)
    - Reference
        - Earth (UXL Encyclopedia of Science, 2015)
- Advanced Search: Jupiter (Basic Content Level selected)
    - Reference
        - Jupiter (Astronomy & Space: From the Big Bang to the Big Crunch, May 5, 2010)
        - Jupiter (UXL Encyclopedia of Science, 2015)
    - Magazines
        - Hello from Jupiter! A Spacecraft gets the closest-ever view of our solar system's largest planet (Science World/Current Science, November 21, 2016)
        - 35 Cool Things About Space (National Geographic Kids, September 2010)
        - Stargazing with Jack Horkheimer (Odyssey, November 2000)
- Advanced Search: Uranus (Basic Content Level selected)
    - Reference

        - Uranus (Astronomy & Space: From the Big Bang to the Big Crunch, May 5, 2010)
        - Uranus (UXL Encyclopedia of Science, 2015)
    - Magazines
        - Ask Science World (Science World, December 6, 2010)
        - Stargazing with Jack Horkheimer: the planet that went "tilt" and other far-out planets (Odyssey, November 2003)
        - 6 Out of this World Facts (National Geographic Kids, August 2016)
- Advanced Search: Venus
    - Reference
        - Venus (UXL Encyclopedia of Science, 2015)
    - Magazines
        - Venus Unveiled (Science News for Kids, December 5, 2007)
        - Was Venus like Earth? (Current Science, a Weekly Reader publication, February 4, 2011)
        - Meet Your New Neighbor: it treks around the sun, and it's larger than Pluto. Find out if a newly spotted object could be the 10th planet (Science World, November 28, 2005)
        - Space Commander: Alice Bowman steers a spacecraft to Pluto and beyond (SuperScience, March 2016)

ScienceFLIX

- Space Science
    - Planet Earth
        - Read It!
            - "Set my Reading Level 1" (top right-hand corner of the screen)
    - Solar System
        - Read It!
            - "Set my Reading Level 1" (top right-hand corner of the screen)
                - Article Section: Children of the Sun
        - Dive Deeper!
            - The Sun and Planets

    - The Inner Planets
        - "Set my Reading Level 1" (top right-hand corner of the screen)
    - The Outer Planets
        - "Set my Reading Level 1" (top right-hand corner of the screen)

TrueFLIX

- Outer Space
    - The Solar System
        - Chapters: Welcome to the Solar System (1), The Inner Planets (3), The Outer Planets (4)
- The Solar System
    - Planet Earth
    - Planet Jupiter
    - Planet Mars
    - Planet Mercury
    - Planet Neptune
    - Planet Saturn
    - Planet Uranus
    - Planet Venus

Crash Course Kids

- Weather In Space (the Rocky Planets): Crash Course Kids #43.1
- Gas Giants Weather: Crash Course Kids #43.2
- Life on Other Planets: Crash Course Kids #45.1
- Planetary Plants: Crash Course Kids #45.2

**Resources for Students Reading Above Grade Level**

Science In Context

- Browse Topics
    - Mercury
        - Reference
            - Mercury (World of Scientific Discovery, January 15, 2009)
    - Neptune

        - Reference
            - Neptune (*World of Scientific Discovery, 2007*)
    - Saturn
        - Reference
            - Saturn (*World of Scientific Discovery, 2007*)

ScienceFLIX

- Space Science
    - Planet Earth
        - Explore More
            - Planet Earth
                - Earth
                - Planets and Planetary Systems
                - Solar System

*SLO: Recognize that not only Earth, but other planets, have moons; and identify examples of those moons.*

**Resources for Students Reading Below Grade Level**

** A note about the resources below. These resources are designed for younger learners and the interface reflects that. For students who will not be comfortable using this younger interface, printing the article instead of accessing it online is recommended.*

PebbleGO Science

- Earth and Space Sciences
    - Planets
        - Earth
        - Jupiter
        - Neptune
        - Pluto: Dwarf Planet
        - Uranus

**Resources for Students Reading At Grade Level**

Britannica School: Elementary

- Articles
  - Science and Mathematics
    - Physical Sciences
      - Astronomy
        - Jupiter
          - Article Section: Moons
        - Neptune
          - Article Section: Moons
        - Pluto
          - Article Section: Moons
        - Saturn
          - Article Section: Moons
        - Uranus
          - Article Section: Moons
- Keyword Search: Earth
  - Earth (planet)
    - Article Section: Satellite

PowerKnowledge Earth and Space

- Space
  - Space and Our Solar System
    - Moons of Our Solar System
  - Planets
    - Earth
      - Article Sections: The Moon, Astronauts on the Moon
    - Jupiter
      - Article Sections: All Around Jupiter, Io and Europa, Ganymede and Callisto
    - Mars
      - Article Sections: Phobos, Deimos
    - Neptune
      - Article Sections: Neptune's Moons, Mighty Triton
    - Saturn
      - Article Sections: Saturn's Moons, Giant Titan

        - Uranus
            - Article Section: Moons Around Uranus
    - Space and Our Solar System
        - Pluto and Other Dwarf Planets
            - Article Section: Pluto's Moons

Science In Context

- Browse Topics
    - Mars
        - Reference
            - Mars (*Astronomy & Space: From the Big Bang to the Big Crunch, June 1, 2011*)
    - Mercury
        - Reference
            - Mercury (*Astronomy & Space: From the Big Bang to the Big Crunch, July 20, 2008* )
    - Neptune
        - Reference
            - Neptune (*UXL Encyclopedia of Science, 2015*)
    - Pluto
        - Reference
            - Pluto (*UXL Encyclopedia of Science, 2015*)
            - Pluto (*Astronomy & Space: From the Big Bang to the Big Crunch, May 5, 2010*)
    - Saturn
        - Reference
            - Saturn (*UXL Encyclopedia of Science, 2015*)
- Advanced Search: Earth (Basic Content Level selected)
    - Reference
        - Earth (UXL Encyclopedia of Science, 2015)
- Advanced Search: Jupiter (Basic Content Level selected)
    - Reference
        - Jupiter (Astronomy & Space: From the Big Bang to the Big Crunch, May 5, 2010)
        - Jupiter (UXL Encyclopedia of Science, 2015)
    - Magazines

        - Jupiter: The Moon King
- Advanced Search: Uranus (Basic Content Level selected)
    - Reference
        - Uranus (Astronomy & Space: From the Big Bang to the Big Crunch, May 5, 2010)
        - Uranus (UXL Encyclopedia of Science, 2015)

ScienceFLIX

- Space Science
    - Planet Earth
        - Read It!
            - "Set my Reading Level 1" (top right-hand corner of the screen)
    - Solar System
        - Read It!
            - "Set my Reading Level 1" (top right-hand corner of the screen)
                - Article Section: Children of the Sun, Moons
        - Dive Deeper!
            - The Sun and Planets
                - The Inner Planets
                    - "Set my Reading Level 1" (top right-hand corner of the screen)
                        - Article Sections: Earth, Mars
                - The Outer Planets
                    - "Set my Reading Level 1" (top right-hand corner of the screen)
                        - Article Sections: Jupiter, Saturn, Uranus, Neptune

TrueFLIX

- Science and Nature
    - The Solar System
        - Planet Earth
            - Chapter: The Moon (3)
        - Planet Jupiter

        - Chapter: The Moons of Jupiter (3)
    - Planet Mars
        - The Moons of Mars (3)
    - Planet Neptune
        - Chapter: Neptune's Moons and Rings (4)
    - Planet Saturn
        - Chapter: Saturn's Moons and Rings (3)
    - Planet Uranus
        - Chapter: Natural Satellites (3)

**Resources for Students Reading Above Grade Level**

Science In Context

- Browse Topics
    - Solar System
        - Reference
            - Solar System (World of Scientific Discovery, February 1, 2009)

*SLO: Identify technologies and procedures by which knowledge, about planets and other objects in the night sky, has been gathered.*

**Resources for Students Reading Below Grade Level**

** A note about the resources below. These resources are designed for younger learners and the interface reflects that. For students who will not be comfortable using this younger interface, printing the article instead of accessing it online is recommended.*

PebbleGO Science

- Earth and Space Sciences
    - Space Science
        - Exploring Space
            - Astronauts
            - First Moon Landing
            - Spacecraft

**Resources for Students Reading At Grade Level**

Britannica School: Elementary

- Articles
    - Science and Mathematics
        - Physical Sciences
            - Astronomy
                - Observatory
                - Satellite
                - Space Exploration
                - Space Shuttle
                - Space Station

PowerKnowledge Earth and Space Science

- Space
    - Space Exploration
        - People and Space
            - All About Astronauts
            - Apollo 13: Surviving a Space Explosion
            - Endeavour SRTM: Mapping the Earth
            - Endeavour STS-61: Fixing the Hubble Space Telescope
            - Galileo and the Telescope
            - Living and Working in Space
        - Space Firsts
            - Apollo 11 Mission: First Man to Walk on the Moon
            - Columbia: First Space Shuttle
            - Sputnik: First Satellite
            - Valentina Tereshkova: First Woman in Space
            - Yuri Gagarin: First Man in Space
            - Rockets
            - Satellites
            - Space Missions
            - Space Shuttles
            - Space Stations

Science In Context

- Advanced Search: Space Exploration
    - Reference
        - European Space Agency (Astronomy & Space: From the Big Bang to the Big Crunch, February 5, 2010)
        - Space Telescope (UXL Science, January 15, 2009)
        - Challenger (UXL Science, June 1, 2008)
        - Spacecraft, Unmanned (UXL Encyclopedia of Science, 2015)
        - Mars (UXL Encyclopedia of Science, 2015)
            - Article Section: Exploration of Mars
        - Spacecraft, Manned (UXL Encyclopedia of Science, 2015)
        - National Aeronautics and Space Administration (NASA) (UXL Encyclopedia of Science, 2015)

ScienceFLIX

- Space Science
    - Solar System
        - Dive Deeper!
            - Searching for Answers
                - Timeline of Solar System Discovery
                - Space Probes
    - Space Exploration
        - Read It!
            - Space Exploration
                - “Select My Reading Level 1” (top right-hand corner of the screen)
        - Dive Deeper!
            - Uncrewed Space Exploration
                - Space Satellites
                    - “Select My Reading Level 1” (top right-hand corner of the screen)
                - Planetary Probes
                    - “Select My Reading Level 1” (top right-hand corner of the screen)

- A Gallery of Hubble Telescope Images (Slideshow)
- Humans in Space
  - Timeline of Human Space Exploration
  - Space Stations
    - "Select My Reading Level 1" (top right-hand corner of the screen)
  - Space Tourism
    - "Select My Reading Level 1" (top right-hand corner of the screen)
- Survival in Space
  - Astronauts in Training
    - "Select My Reading Level 1" (top right-hand corner of the screen)

TrueFLIX

- Science and Nature
  - Outer Space
    - The Solar System
      - Chapter: Exploring the Solar System (6)
    - Stars

      Chapter: Star Studies (5)
  - The Solar System
    - The Moon
      - Chapter: Modern Lunar Missions (5)
    - Planet Earth
      - Chapter: Missions Earth (5)

**Resources for Students Reading Above Grade Level**

ScienceFLIX

- Space Science
  - Solar System
    - Explore More
      - The Sun and Planets
        - The Moon

        - Article Sections: Lunar Exploration, Early Probes, Astronaut Visits, Recent Developments, Travel on the Moon, Experiencing the Moon in Person, In the Future
    - Other Objects in Orbit
        - Space Satellites
    - Searching for Answers
        - Eye in the Sky
        - Space Agencies and Centers
        - Space Exploration and Travel
        - Space Station
        - Space Telescope
- Space Exploration
    - Explore More
        - Space Exploration
            - Space Exploration and Travel
            - Space Agencies and Centers
            - European Space Agency
        - Uncrewed Space Exploration
            - Artificial Satellites
            - Hubble Space Telescope
            - Luna (spacecraft)Space
            - ProbeSpace Telescope
            - Sputnik
            - Telestar
- Universe
    - Dive Deeper!
        - Eyes on the Universe
            - The Big Scopes
                - “Select My Reading Level 1” (top right-hand corner of the screen)
            - Radio Astronomy
                - “Select My Reading Level 1” (top right-hand corner of the screen)
            - Infrared and Ultraviolet Astronomy

- "Select My Reading Level 1" (top right-hand corner of the screen)

*SLO: Understand that Earth, the Sun, and the Moon are part of a solar system that occupies only a tiny part of the known universe.*

**Resources for Students Reading Below Grade Level**

** A note about the resources below. These resources are designed for younger learners and the interface reflects that. For students who will not be comfortable using this younger interface, printing the article instead of accessing it online is recommended.*

PebbleGO Science

- Earth and Space Sciences
  - Space Science
    - Our Solar System
      - What Is The Solar System

**Resources for Students Reading At Grade Level**

Britannica School: Elementary

- Articles
  - Science and Mathematics
    - Physical Sciences
      - Astronomy
        - Galaxy
        - Milky Way
        - Solar System
          - Article Section: Outer Regions, Other Planetary Systems
        - Universe

PowerKnowledge Earth and Space Science

- Space
  - Space and Our Solar System

        - Our Solar System

Science In Context

- Advanced Search: Solar System (Basic Content Level selected)
    - Reference
        - Solar System (Astronomy & Space: From the Big Bang to the Big Crunch, October 29, 2008)
        - Solar System (UXL Encyclopedia of Science, 2015)
- Advanced Search: Universe (Basic Content Level selected)
    - Reference
        - Universe (UXL Encyclopedia of Science, 2015)
        - Galaxy (UXL Encyclopedia of Science, 2015)
        - Hubble Space Telescope ( UXL Science, June 1, 2008, Updated: December 19)

ScienceFLIX

- Space Science
    - Universe
        - Read It!
            - Universe
                - "Select My Reading Level 1" (top right-hand corner of the screen)
        - Dive Deeper!
            - Components of the Universe
                - Objects in the Universe (Slideshow)

TrueFLIX

- Science and Nature
    - Outer Space
        - The Solar System

Crash Course Kids

- Spaced Out : Crash Course Kids 25.1

**Resources for Students Reading Above Grade Level**

ScienceFLIX

- Space Science
    - Universe
        - Explore More
            - Components of the Universe
                - Clusters of Galaxies
                - The Milky Way

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**Topic D: Evidence and Investigation**

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*SLO: Recognize that evidence found at the scene of an activity may have unique characteristics that allow an investigator to make inferences about the participants and the nature of the activity, and give examples of how specific evidence may be used.*
*SLO: Investigate evidence and link it to a possible source; e.g., by:*

- *classifying footprints, tire prints and soil samples from a variety of locations*
- *analyzing the ink from different pens, using paper chromatography*
- *analyzing handwriting samples to identify handwriting of a specific person*
- *comparing samples of fabric*
- *classifying fingerprints collected from a variety of surfaces.*

**Resources for Students Reading At Grade Level**

Science In Context

- Chromatography
    - Reference
        - Chromatography (*UXL Science, June 1, 2008*)

ScienceFLIX

- Tech, Math, & Engineering
    - Forensic Science
        - Read It!
            - Forensic Science

        - "Select My Reading Level 1" (top right-hand corner of the screen)
    - Dive Deeper!
        - Forensic Call to Action
            - The Crime Scene
                - "Select My Reading Level 1" (top right-hand corner of the screen)
            - Blood, Fingerprints, and Other Physical Evidence
        - "Select My Reading Level 1" (top right-hand corner of the screen)

**Resources for Students Reading Above Grade Level**

Science In Context

- Chromatography
    - Reference
        - Chromatography (*Environmental Encyclopedia, 2011*)
        - Chromatography (*World of Invention, 2006*)

ScienceFLIX

- Tech, Math, & Engineering
    - Forensic Science
        - Explore More
            - Forensic Laboratories
                - Chromatography
                - Handwriting and Typewriting Identification

## Topic E: Trees and Forests

*SLO: Identify reasons why trees and forests are valued. Students meeting this expectation should be aware that forests serve as habitat for a variety of living things and are important to human needs for recreation, for raw materials and for a life-supporting environment.*
*SLO: Describe the role of trees in nutrient cycles and in the production of oxygen.*

PowerKnowledge Life Science

- Plants
  - How Trees Grow
    - Article Section: What Trees Do
- Food Chains and Food Webs
  - Forest Food Chains
  - Producers
    - Article Sections: Producers Make Food, Our Lungs Need Producers
- Habitats and Ecosystems
  - Biomes and Habitats
    - Coniferous Forests
      - Article Section: Canada's Boreal Forests
    - Deciduous Forests
      - Article Section: People and the Forest
    - Forest Habitats
      - Article Sections: What is a Forest Habitat?, Where are the World's Forests?, A Special Forest: The Boreal Forest, Animals in Forest Habitats, A Closer Look: The Raccoon, People and Forests
- Plants
  - Oak Trees
    - Article Sections: From Wood to Lumber

Science In Context

- Browse Topics
    - Coniferous Forests
        - Introductory Article
        - Featured Content
            - Coniferous Forest
    - Deciduous Forests
        - Introductory Article
        - Reference
            - Deciduous Forest
            - Forests

TrueFLIX

- Temperate Forests
    - Chapter: Forest Life

Crash Course Kids

- Vegetation Transformation: Crash Course Kids #5.2
- Fabulous Food Chains: Crash Course Kids #7.1
- The Dirt on Decomposers: Crash Course Kids #7.2
- Who Needs Dirt?: Crash Course Kids #27.1
- Big Changes in the Big Forest: Crash Course Kids #38.2

*SLO: Identify general characteristics that distinguish trees from other plants, and characteristics that distinguish deciduous from coniferous trees.*

PowerKnowledge Life Science

- Habitats and Ecosystems
    - Biomes and Habitats
        - Coniferous Forests
        - Deciduous Forests
        - Forest Habitats
            - Article Sections: What is a Forest Habitat?, Where are the World's Forests?, Falling Leaves, Needle Leaves, More than Just Trees

    - Plants
        - How Trees Grow
            - Article Sections: Kinds of Trees, The Evergreen Family, Red and Yellow Leaves, Self-Seeders
- Classification
    - Plants with Seeds
        - Article Sections: Conifers: Pines and More, Conifers: Cones and Seeds

Science In Context

- Browse Topics
    - Coniferous Forests
        - Introductory Article
        - Featured Content
            - Coniferous Forest
    - Deciduous Forests
        - Introductory Article
        - Reference
            - Deciduous Forest

TrueFLIX

- Temperate Forests
    - Chapters: Forest Features, Hard Times (The BIG Truth)

*SLO: Interpret the growth patterns of a young tree, distinguishing this year's growth from that of the previous year and from the year before that. Students meeting this expectation should recognize differences in coloration and texture of new growth and old growth, and locate scars that separate old and new growth.*

PowerKnowledge Life Science

- Plants
  - Oak Trees
    - Article Sections: Oaks, Oaks of the World, The Oak's Trunk

*SLO: Identify human actions that enhance or threaten the existence of forests.*
*SLO: Identify an issue regarding forest use, identify different perspectives on the issue, and identify actions that might be taken.*

PowerKnowledge Earth and Space Science

- Save Our Earth
  - Deforestation

Science In Context

- Browse Topics
  - Deforestation
    - Introductory Article
    - Featured Content
      - Logging

TrueFLIX

- Temperate Forests
  - Chapters: Forests in Danger, Conservation