



## Britannica Materials for Grades 3-5 Science

The following *Britannica Online School Edition* materials support Florida's 3-5<sup>th</sup> Grade Sunshine State Standards for Science. Orange County Public Schools can access these resources online at [www.school.eb.com](http://www.school.eb.com) or via the link from the Britannica Web's Best Sites. Teachers and students can access these links, including *Britannica Online School Edition*, from school or from home.

### The Nature of Matter

**Big Idea 8: Properties of Matter**

**Big Idea 9: Changes in Matter**

#### 1. Matter

**Article:** [www.school.eb.com/elementary/article?articleId=353444](http://www.school.eb.com/elementary/article?articleId=353444)

**Activity:** [www.school.eb.com/lm/games/GS\\_4\\_7/GS\\_4\\_7.htm](http://www.school.eb.com/lm/games/GS_4_7/GS_4_7.htm)

**Description:** Encyclopedia article about matter, its states and properties, and an online activity that asks students to match a substance with its common form.

**Sunshine State Standards:** SC.A.1.2

#### 2. Phases of Matter

**Link:** [www.miamisci.org/af/sln/phases/index.html](http://www.miamisci.org/af/sln/phases/index.html)

**Description:** Online activity from the Miami Museum of Science that illustrates how matter changes phases at different temperatures.

**Sunshine State Standards:** SC.A.1.2

#### 3. Atoms & Motion of Molecules in Water

**Article:** [www.school.eb.com/elementary/article?articleId=352802](http://www.school.eb.com/elementary/article?articleId=352802)

**Website:** <http://ofcn.org/cyber.serv/academy/ace/sci/cecsci/cecsci024.html>

**Description:** Encyclopedia article about atoms, including the structure and properties of atoms and a Web site from the Columbia Education Center to help students understand atomic theory and the motion of molecules.

**Sunshine State Standards:** SC.A.1.2, SC.A.2.2

#### 4. Water

**Link:** [www.school.eb.com/elementary/article?articleId=390625](http://www.school.eb.com/elementary/article?articleId=390625)

**Video (2 minutes):** [www.school.eb.com/elementary/browse/art-55441](http://www.school.eb.com/elementary/browse/art-55441)

**Description:** Encyclopedia article and video about water, its composition, and its various states.

**Sunshine State Standards:** SC.A.1.2, SC.D.1.2



5. Do Me a Flavor 

Link: [www.school.eb.com/lm/intoreading/flavor/product.html](http://www.school.eb.com/lm/intoreading/flavor/product.html)

Description: Interactive story with reading activities that explores the chemistry behind creating flavoring for food.

Sunshine State Standards: SC.A.1.2, LA.A.2.2

6. Chem 4 Kids 

Link: [www.chem4kids.com](http://www.chem4kids.com)

Description: Website with information and quizzes on reactions, matter, atoms, and the periodic table.

Sunshine State Standards: SC.A.1.2

7. Microscope   

Article: [www.school.eb.com/all/elementary/article?articleId=353462](http://www.school.eb.com/all/elementary/article?articleId=353462)

Website: [www.mos.org/sln/sem/intro.html](http://www.mos.org/sln/sem/intro.html)

Website: [www.pbrc.hawaii.edu/microangela](http://www.pbrc.hawaii.edu/microangela)

Description: Encyclopedia article about optical and electron microscopes and websites from Boston's Museum of Science and the University of Hawaii that have teacher resources and show photos of hair, fleas, mold, etc..

Sunshine State Standards: SC.A.2.2

## Energy

Big Idea 10: Forms of Energy

Big Idea 11: Energy Transfer & Transformations

8. Ecosystems  

Article: [www.school.eb.com/elementary/article?articleId=353082](http://www.school.eb.com/elementary/article?articleId=353082)

Image: [www.school.eb.com/elementary/art?id=15](http://www.school.eb.com/elementary/art?id=15)

Image: [www.school.eb.com/comptons/art?id=53235](http://www.school.eb.com/comptons/art?id=53235)

Description: Encyclopedia article about ecology, including what ecosystems are and examples of ecosystems, and diagrams explaining the hydrologic cycle and how energy flows through an ecosystem.

Sunshine State Standards: SC.B.1.2, SC.D.1.2, SC.G.1.2

9. Energy  

Link: [www.school.eb.com/all/elementary/article?articleId=353100](http://www.school.eb.com/all/elementary/article?articleId=353100)

Description: Encyclopedia article and illustration about energy, including the different types and sources of energy.

Sunshine State Standards: SC.B.1.2



## 10. Phototropism

**Link:** [www.school.eb.com/comptons/art?id=68469](http://www.school.eb.com/comptons/art?id=68469)

**Description:** Video demonstrating phototropic response in plants (3 minutes).

**Sunshine State Standards:** SC.B.1.2

## 11. Sound

**Link:** [www.school.eb.com/all/elementary/article?articleId=353791](http://www.school.eb.com/all/elementary/article?articleId=353791)

**Description:** Encyclopedia article and illustration about sound, including how sounds are made and the various aspects of sound.

**Sunshine State Standards:** SC.B.1.2

## 12. Sound and Music Activity

**Link:** [www.school.eb.com/lm/passport/sound\\_and\\_music.pdf](http://www.school.eb.com/lm/passport/sound_and_music.pdf)

**Description:** Activity about the basics of sound and how musical instruments create different sounds.

**Sunshine State Standards:** SC.B.1.2

## 13. Solar Energy & Hydropower

**Solar Energy:** [www.school.eb.com/all/elementary/article?articleId=433607](http://www.school.eb.com/all/elementary/article?articleId=433607)

**Hydropower:** [www.school.eb.com/comptons/art?id=84719](http://www.school.eb.com/comptons/art?id=84719)

**Description:** Encyclopedia article about solar energy and how to make heat and electricity from solar energy, and a video describing how water mills take the power of water and transform it into usable energy (2 minutes).

**Sunshine State Standards:** SC.B.2.2

## Force and Motion

**Big Idea 12: Motion of Objects**

**Big Idea 13: Forces & Changes in Motion**

## 14. Force & Motion

**Force:** [www.school.eb.com/elementary/article?articleId=400287](http://www.school.eb.com/elementary/article?articleId=400287)

**Motion:** [www.school.eb.com/elementary/article?articleId=399909](http://www.school.eb.com/elementary/article?articleId=399909)

**Description:** Encyclopedia articles about various kinds of force and motion, how to measure force, and Newton's Laws of Motion.

**Sunshine State Standards:** SC.C.1.2, SC.C.2.2

## 15. Gravity

**Article:** [www.school.eb.com/elementary/article?articleId=400109](http://www.school.eb.com/elementary/article?articleId=400109)

**Video (2 minutes):** [www.school.eb.com/elementary/browse/art-55621](http://www.school.eb.com/elementary/browse/art-55621)

**Website:** <http://www.cs.dartmouth.edu/farid/sciencekids/gravity.html>



Reading



Diagram



Online Resource



Activity



Video

**Description:** Encyclopedia article, illustrations, website, and a video explaining gravity and its effects.

**Sunshine State Standards:** SC.C.2.2

**16. Simple Machines**    

**Article:** [www.school.eb.com/elementary/article?articleId=400129](http://www.school.eb.com/elementary/article?articleId=400129)

**Video:** [www.school.eb.com/elementary/browse/art-94739](http://www.school.eb.com/elementary/browse/art-94739) (19 minutes)

**Website:** <http://sln.fi.edu/qa97/spotlight3/spotlight3.html>

**Description:** Encyclopedia article about simple machines and how they change the strength or direction of a force, a video that shows the use of simple machines in circuses, sports, medieval war machines, sailboats, and steam locomotives, and a website on simple machines.

**Sunshine State Standards:** SC.C.2.2

**17. Simple Machines Activity**  

**Link:** [www.school.eb.com/lm/passport/simple\\_machines.pdf](http://www.school.eb.com/lm/passport/simple_machines.pdf)

**Description:** Activity about simple machines like wedges, planes, wheels, axles, pulleys, and levers and instructions on designing your own 'Rube Goldberg machine'.

**Sunshine State Standards:** SC.C.2.2

**18. The Mystery of Easter Island**  

**Link:** [www.school.eb.com/lm/intoreading/easter/product.html](http://www.school.eb.com/lm/intoreading/easter/product.html)

**Description:** Interactive story with reading activities that explores how simple machines were used to construct the statues on Easter Island.

**Sunshine State Standards:** SC.C.2.2, LA.A.2.2

## Processes that Shape Earth

**Big Idea 6: Earth Structures**

**Big Idea 7: Earth Systems & Patterns**

**19. Atmosphere**  

**Link:** [www.school.eb.com/elementary/article?articleId=352801](http://www.school.eb.com/elementary/article?articleId=352801)

**Description:** Encyclopedia article about the atmosphere and its various layers.

**Sunshine State Standards:** SC.D.1.2

**20. Soil**   

**Article:** [www.school.eb.com/all/elementary/article?articleId=390622](http://www.school.eb.com/all/elementary/article?articleId=390622)

**Video (2 minutes):** [www.school.eb.com/elementary/art-83899](http://www.school.eb.com/elementary/art-83899)

**Description:** Encyclopedia article about soil, how it forms, and its layers and a video about soil properties such as texture and drainage ability.

**Sunshine State Standards:** SC.D.1.2



Reading



Diagram



Online Resource



Activity



Video

## 21. Erosion

**Article:** [www.school.eb.com/all/elementary/article?articleId=399447](http://www.school.eb.com/all/elementary/article?articleId=399447)

**Video (3 minutes):** [www.school.eb.com/elementary/art-84811](http://www.school.eb.com/elementary/art-84811)

**Video (2 minutes):** [www.school.eb.com/elementary/art-82676](http://www.school.eb.com/elementary/art-82676)

**Description:** Encyclopedia article about how erosion occurs and the dangers of it and videos with examples of erosion at the Grand Canyon.

**Sunshine State Standards:** SC.D.1.2

## 22. Plate Tectonics

**Link:** [www.school.eb.com/all/elementary/article?articleId=346101](http://www.school.eb.com/all/elementary/article?articleId=346101)

**Description:** Encyclopedia article and animation about the movement of the Earth's crust, plate movements, and continental drift.

**Sunshine State Standards:** SC.D.1.2

## 23. Conservation & Recycling

**Conservation article:** [www.school.eb.com/elementary/article?articleId=352993](http://www.school.eb.com/elementary/article?articleId=352993)

**Recycling article:** [www.school.eb.com/elementary/article?articleId=353701](http://www.school.eb.com/elementary/article?articleId=353701)

**Image:** [www.school.eb.com/elementary/art-88261](http://www.school.eb.com/elementary/art-88261)

**Video (2 minutes):** [www.school.eb.com/elementary/art-83899](http://www.school.eb.com/elementary/art-83899)

**Video (1 minute):** [www.school.eb.com/elementary/art-16601](http://www.school.eb.com/elementary/art-16601)

**Description:** Encyclopedia articles about recycling and conservation of renewable and nonrenewable resources, and videos showing ways plastic can be recycled.

**Sunshine State Standards:** SC.D.2.2, SC.G.2.2

## 24. Kids Do Ecology!

**Link:** [www.nceas.ucsb.edu/nceas-web/kids](http://www.nceas.ucsb.edu/nceas-web/kids)

**Description:** A Web site from the National Center for Ecological Analysis and Synthesis, about different animals, ecosystems, and conservation efforts.

**Sunshine State Standards:** SC.D.2.2, SC.G.1.2, SC.G.2.2

## Earth and Space

### Big Idea 5: Earth in Space and Time

## 25. Earth

**Article:** [www.school.eb.com/elementary/article?articleId=353074](http://www.school.eb.com/elementary/article?articleId=353074)

**Image:** [www.school.eb.com/elementary/art-90815](http://www.school.eb.com/elementary/art-90815)

**Description:** Encyclopedia article about Earth's characteristics, including its orbit and rotation, plus a photo of the Earth taken from the Moon.

**Sunshine State Standards:** SC.E.1.2



## 26. Sun & Moon

**Sun:** [www.school.eb.com/elementary/article?articleId=353824](http://www.school.eb.com/elementary/article?articleId=353824)

**Moon:** [www.school.eb.com/elementary/article?articleId=353489](http://www.school.eb.com/elementary/article?articleId=353489)

**Image:** [www.school.eb.com/elementary/art-90814](http://www.school.eb.com/elementary/art-90814) (Lunar Cycle)

**Image:** [www.school.eb.com/elementary/art-57096](http://www.school.eb.com/elementary/art-57096) (Moon Phases)

**Image:** [www.school.eb.com/elementary/art-88569](http://www.school.eb.com/elementary/art-88569) (Moon's orbit)

**Description:** Encyclopedia articles about the sun and moon and images of the moon describing the moon's physical features, orbit, spin, and phases.

**Sunshine State Standards:** SC.E.1.2

## 27. Solar System

**Planets:** [www.school.eb.com/elementary/article?articleId=353638](http://www.school.eb.com/elementary/article?articleId=353638)

Video (4 minutes): [www.school.eb.com/elementary/art-83486](http://www.school.eb.com/elementary/art-83486)

**Mercury:** [www.school.eb.com/elementary/article?articleId=353454](http://www.school.eb.com/elementary/article?articleId=353454)

**Venus:** [www.school.eb.com/elementary/article?articleId=353895](http://www.school.eb.com/elementary/article?articleId=353895)

**Mars:** [www.school.eb.com/elementary/article?articleId=353434](http://www.school.eb.com/elementary/article?articleId=353434)

**Jupiter:** [www.school.eb.com/elementary/article?articleId=353328](http://www.school.eb.com/elementary/article?articleId=353328)

Video (1 minute): [www.school.eb.com/elementary/art-74820](http://www.school.eb.com/elementary/art-74820)

**Saturn:** [www.school.eb.com/elementary/article?articleId=353745](http://www.school.eb.com/elementary/article?articleId=353745)

**Uranus:** [www.school.eb.com/elementary/article?articleId=353890](http://www.school.eb.com/elementary/article?articleId=353890)

**Neptune:** [www.school.eb.com/elementary/article?articleId=353526](http://www.school.eb.com/elementary/article?articleId=353526)

**Pluto (dwarf):** [www.school.eb.com/elementary/article?articleId=353642](http://www.school.eb.com/elementary/article?articleId=353642)

**Description:** Encyclopedia articles with information about each planet, their size, distance from the sun, atmosphere, composition, and number of satellites.

**Sunshine State Standards:** SC.E.1.2

## 28. Galaxy & Stars

**Galaxy:** [www.school.eb.com/elementary/article?articleId=353161](http://www.school.eb.com/elementary/article?articleId=353161)

**Milky Way:** [www.school.eb.com/elementary/article?articleId=353466](http://www.school.eb.com/elementary/article?articleId=353466)

**Stars:** [www.school.eb.com/elementary/article?articleId=353808](http://www.school.eb.com/elementary/article?articleId=353808)

**Description:** Encyclopedia articles about the Milky Way galaxy, galaxies in general, and the life, composition, and different types of stars.

**Sunshine State Standards:** SC.E.1.2, SC.E.2.2

## 29. Line 'Em Up

**Link:** [www.school.eb.com/lm/games/GS\\_3\\_1/GS\\_3\\_1.htm](http://www.school.eb.com/lm/games/GS_3_1/GS_3_1.htm)

**Description:** Online activity that reinforces students' understanding of a planet's position to the sun.

**Sunshine State Standards:** SC.E.1.2



## Processes of Life

Big Idea 14: Organization & Dev. of Living Organisms  
Big Idea 15: Diversity & Evolution of Living Organisms  
Big Idea 16: Heredity & Reproduction

### 30. Life Systems & Functions



**Nervous System:** [www.school.eb.com/elementary/article?articleId=353527](http://www.school.eb.com/elementary/article?articleId=353527)

**Digestive System:** [www.school.eb.com/elementary/article?articleId=353054](http://www.school.eb.com/elementary/article?articleId=353054)

**Respiratory:** [www.school.eb.com/elementary/article?articleId=353709](http://www.school.eb.com/elementary/article?articleId=353709)

**Skeletal System:** [www.school.eb.com/elementary/article?articleId=353778](http://www.school.eb.com/elementary/article?articleId=353778)

**Description:** Encyclopedia articles and illustrations of many life systems, functions, and cycles.

**Sunshine State Standards:** SC.F.1.2

### 31. Cells



**Link:** [www.school.eb.com/elementary/article?articleId=352933](http://www.school.eb.com/elementary/article?articleId=352933)

[www.school.eb.com/elementary/art-53827](http://www.school.eb.com/elementary/art-53827) (Plant)

[www.school.eb.com/elementary/art-83800](http://www.school.eb.com/elementary/art-83800) (Plant video, 2 minutes)

[www.school.eb.com/elementary/art-53093](http://www.school.eb.com/elementary/art-53093) (Animal)

**Description:** Encyclopedia article, video and diagrams about cells, including the different parts of a cell, and the difference between plant and animal cells.

**Sunshine State Standards:** SC.F.1.2

### 32. Excell at Cells



**Link:** <http://library.thinkquest.org/5420/>

**Description:** A student-created website from a Wisconsin elementary school that includes information, illustrations and activities about cells.

**Sunshine State Standards:** SC.F.1.2

### 33. Jell-O Cells



**Link:** [www.ofcn.org/cyber.serv/academy/ace/sci/cecsci/cecsci140.html](http://www.ofcn.org/cyber.serv/academy/ace/sci/cecsci/cecsci140.html)

**Description:** A lesson plan from the Columbia Education Center, for building cell models from Jell-O to compare plant and animal cells.

**Sunshine State Standards:** SC.F.1.2

### 34. Genetics



**Link:** [www.school.eb.com/elementary/article?articleId=353170](http://www.school.eb.com/elementary/article?articleId=353170)

**Description:** Encyclopedia article about genetics and how traits and conditions can be inherited.

**Sunshine State Standards:** SC.F.2.2



## How Living Things Interact with Their Environment

### Big Idea 17: Interdependence

#### 35. Ecosystems

**Link:** [www.school.eb.com/elementary/art-83523](http://www.school.eb.com/elementary/art-83523)

**Description:** Video describing the relationship among organisms in an ecosystem (2 minutes).

**Sunshine State Standards:** SC.G.1.2, SC.B.1.2

#### 36. Food Chain

**Link:** [www.school.eb.com/elementary/article?articleId=353141](http://www.school.eb.com/elementary/article?articleId=353141)

**Description:** Encyclopedia article and illustration about the food chain.

**Sunshine State Standards:** SC.G.1.2

#### 37. Photosynthesis

**Link:** [www.school.eb.com/elementary/article?articleId=353624](http://www.school.eb.com/elementary/article?articleId=353624)

**Description:** Encyclopedia article about the process of photosynthesis.

**Sunshine State Standards:** SC.G.1.2

#### 38. Natural Resources

**Link:** [www.school.eb.com/elementary/article?articleId=399553](http://www.school.eb.com/elementary/article?articleId=399553)

**Description:** Encyclopedia article about renewable and nonrenewable natural resources.

**Sunshine State Standards:** SC.G.2.2, SC.D.2.2

#### 39. Climate: Man's Effect On The Climate

**Link:** [www.school.eb.com/elementary/art?id=83516](http://www.school.eb.com/elementary/art?id=83516)

**Description:** Video detailing the effects of pollution on weather (1 minute).

**Sunshine State Standards:** SC.G.2.2, SC.H.3.2

## The Nature of Science

**Big Idea 1: The Practice of Science**

**Big Idea 2: Characteristics of Scientific Knowledge**

**Big Idea 3: The Role of Theories and Models**

#### 40. Science and Scientific Method

**Link:** [www.school.eb.com/elementary/article?articleId=353748](http://www.school.eb.com/elementary/article?articleId=353748)

**Description:** Encyclopedia article about the different types of science and the process scientists use to answer questions about the world.

**Sunshine State Standards:** SC.H.1.2



Reading



Diagram



Online Resource



Activity



Video

4/8/2008

Page 8

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