

## Planning Guidelines for Saskatchewan Learning's Secondary Science Programs

100 Hours of Instruction, 1 credit per course. Saskatchewan Learning's Science Curriculum Web Address: <http://www.sasked.gov.sk.ca/docs/science.html>

Hours of Instruction per Topic ( ). Some topics are multi- paged always check by clicking the NEXT button.

Directory of Science Education Websites Web Address: <http://avel.edu.au/sci-tech/dosew.html> The Gateway to Educational Materials Web Address: <http://www.thegateway.org/>

### Science 10: Required Area of Study

**Core Units:** Overview, factors of scientific literacy, foundational objectives, C. E. L. s. The topic selections which include listed learning objectives for core units, serve as the means for developing content, process, and values.

#### 1. [Earth/Environmental Science](#)

Select one of:

- [Water Quality](#)
- [Greenhouse Effect](#)
- [Uranium](#)

#### 2. [Physical Science](#)

Select one of:

- [Chemical Change](#)
- [Energy Management](#)
- [Teacher-Selected Topic](#)

#### 3. [Life Science](#)

Select one of:

- [Cell Structure and Human Body Systems](#)
- [Food Additives and Human Nutrition](#)
- [Teacher-Selected Topic](#)

#### 4. [Science Challenge](#)

Select one of:

- [Extension Activities for Previous Core Units](#)
- [Research Projects](#)
- [Science Fair Projects](#)
- [Science Olympics](#)
- [Science Outreach](#)

[Program Organization](#)

[Unit Planning](#)

[Assessment and Evaluation](#)

[Templates for Assessment and Evaluation](#)

[Science 10 Key Resources](#) listing correlations to Units of Instruction.

[Bibliography, Update 98, Update 2000](#)

[Administrator's Information Bulletin](#)

### Chemistry 20

**Core Units:** Overview, Scientific Literacy Components, Foundational Objectives, C. E. L. s, Instructional Strategies

1. [Introduction to Chemistry](#) (4)
2. [Laboratory Activities](#) (20)
3. [Independent Research](#) (10)
4. [Atoms and Elements](#) (8)
5. [Chemical Reactions](#) (8)
6. [Mole Concept and Stoichiometry](#) (12)

Optional Units:

- [Behaviour of Gases](#) [Organic Chemistry](#)
- [Teacher-Developed Unit](#) [Consumer Chemistry](#)

### Chemistry 30

**Core Units:** Overview, Scientific Literacy Components, Foundational Objectives, C. E. L. s, Instructional Strategies

1. [Review of Basic Principles](#) (5)
2. [Laboratory Activities](#) (20)
3. [Independent Research](#) (10)
4. [Energy Changes in Chemical Reactions](#) (5)
5. [Reaction Kinetics](#) (5)
6. [Equilibrium](#) (5)
7. [Solubility and Solutions](#) (5)
8. [Acid based Equilibria](#) ( 8)
9. [Oxidation and Reduction](#)

Optional Units:

- [Case Study](#)
- [Teacher-Developed Unit](#)

[Program Organization](#) 20/30

[Unit Planning Guide](#) 20/30

[Assessment and Evaluation](#) 20/30

[Templates for Assessment and Evaluation](#) 20/30

Chemistry 30 Final Exam will be a multiple – choice departmental exam allocated 40% of the course total mark. The 60% school mark component provides an opportunity to evaluate learning objectives that a multiple- choice exam might not. Teachers accredited in Saskatchewan may prepare their own final exam.

[Chemistry 20/30 Key Resources](#) listing correlations to Units of Instruction.

[Bibliography, Update 98, Update 2000](#)

[Administrator's Information Bulletin](#) 20/30

### Physics 20

[Sequence of Instruction](#) contain key concepts, learning objectives and instructional strategies for units listed below

**Core Units:** Overview, Scientific Literacy Components, Foundational Objectives, C. E. L. s,

1. [Physics of Everyday Things](#) (15)
2. [Waves](#) (15)
3. [Light](#) (25)
4. [Heat](#) (15)

Optional Units:

- [Sound](#) [Optics](#)

### Physics 30

[Sequence of Instruction](#) contains key concepts, learning objectives and instructional strategies for units listed below

**Core Units:** Overview, Scientific Literacy Components, Foundational Objectives, C. E. L. s

1. [Kinematics and Dynamics](#) (30)
2. [Mechanical Energy](#) (10)
3. [Electricity](#) (20)
4. [Nuclear Physics](#) (15)

Optional Units:

- [Applications of Kinematics and Dynamics](#)
- [Fluid Mechanics](#) [Electromagnetism](#)
- [Atomic Physics](#)

[Unit Planning Guide](#), 20/30

[Assessment and Evaluation](#) 20/30

[Template for Assessment and Evaluation](#) 20/30

Physics 30 Final Exam will be a multiple –choice departmental exam allocated 40% of the course total mark. The 60% school mark component provides an opportunity to evaluate learning objectives that a multiple- choice exam might not. Teachers accredited in Saskatchewan may prepare their own final exam.

[Physics 20/30 Key Resources](#) listing correlations to Units of Instruction.

[Bibliography, Update 98, Update 2000](#)

[Administrator's Information Bulletin](#) 20/30

### Biology 20

[Program Organization](#) [Instructional Guidelines](#)

**Core Units:** Overview, Scientific Literacy Components, Foundational Objectives, C. E. L. s Instructional Strategies

1. [Introduction to Biology](#) (7)
2. [Ecological Organization](#) (25)
3. [Diversity of Life](#) (25)
4. [Agricultural Botany of Saskatchewan](#) (15)

Optional Units:

- Expand Core Units
- Science Challenge
- Independent Projects

### Biology 30

[Program Organization](#) [Instructional Guidelines](#)

**Core Units:** Overview, Scientific Literacy Components, Foundational Objectives, C. E. L. s Instructional Strategies

1. [Chemical Basis of Life](#) (10)
2. [Cell Structure and Function](#) (10)
3. [Genetics](#) (20)
4. [Animal Systems](#) (20)
5. [Evolution](#) (15)

Optional Units:

- Expand Core Units
- Science Challenge
- Independent Projects
- Create a Unit

[Unit Planning Guide](#) 20/30

[Assessment and Evaluation](#) 20/30

[Templates for Assessment and Evaluation](#) 20/30

Biology 30 Final Exam will be a multiple – choice departmental exam allocated 40% of the course total mark. The 60% school mark component provides an opportunity to evaluate learning objectives that a multiple- choice exam might not. Teachers accredited in Saskatchewan may prepare their own final exam.

[Biology 20/30 Key Resources](#) listing correlations to Units of Instruction.

[Bibliography, Update 98, Update 2000](#)

[Administrator's Information Bulletin](#) 20/30

## Planning Guidelines for Saskatchewan Learning's Science Middle Years Grade 6-9 Programs

150 minutes of instruction per 1500 minutes or 10% of the instructional cycle

Unit Planning Guidelines Web Address: <http://www.sasked.gov.sk.ca/docs/midlsci/unplmsc.html>

Directory of Science Education Websites Web Address: <http://avel.edu.au/sci-tech/dosew.html>

The Gateway to Educational Materials Web Address: <http://www.thegateway.org/>

Saskatchewan Learning's Science Curriculum Web Address: <http://www.sasked.gov.sk.ca/docs/science.html>

<p align="center"><b>Grade 6</b> <b>Core Units of Study</b></p>	<p align="center"><b>Grade 7</b> <b>Core Units of Study</b></p>	<p align="center"><b>Grade 8</b> <b>Core Units of Study</b></p>	<p align="center"><b>Grade 9</b> <b>Core Units of Study</b></p>
<p>Contain foundational and learning objectives, C. E. L. s., Factors of Scientific Literacy, Instructional Activities</p> <ol style="list-style-type: none"> <li><a href="#">1. Chemical and Reactions</a></li> <li><a href="#">2. Earthquakes and Volcanoes</a></li> <li><a href="#">3. Ecosystems</a></li> <li><a href="#">4. Exploring Space</a></li> <li><a href="#">5. Energy in Our Lives</a></li> </ol> <p><b>Optional Units of Study</b></p> <ol style="list-style-type: none"> <li><a href="#">1. Growth and Development</a></li> <li><a href="#">2. Human Body Control Systems</a></li> <li><a href="#">3. Earth's Climate</a></li> </ol> <p><a href="#">Assessment and Evaluation</a></p> <p><a href="#">Templates for Assessment and Evaluation</a></p> <p><a href="#">Key Resource Correlations</a> listing correlations to Core Units of Study</p> <p><a href="#">A Bibliography for the Middle Level Update</a> 98, <a href="#">Up date 2000</a> Internet Resources included in each unit.</p> <p><a href="#">Administrator's Bulletin</a></p>	<p>Contain foundational and learning objectives, C. E. L. s., Factors of Scientific Literacy, Instructional Activities</p> <ol style="list-style-type: none"> <li><a href="#">1. Basics of Life</a></li> <li><a href="#">2. Saskatchewan-The Land</a></li> <li><a href="#">3. Force and Motion</a></li> <li><a href="#">4. Structures and Design</a></li> <li><a href="#">5. Renewable Resources in Saskatchewan</a></li> </ol> <p><b>Optional Units of Study</b></p> <ol style="list-style-type: none"> <li><a href="#">1. Micro organisms</a></li> <li><a href="#">2. Temperature and Heat</a></li> <li><a href="#">3. Resource Use</a></li> </ol> <p><a href="#">Assessment and Evaluation</a></p> <p><a href="#">Templates for Assessment and Evaluation</a></p> <p><a href="#">Key Resource Correlations</a> listing correlations to Core Units of Study</p> <p><a href="#">A Bibliography for the Middle Level Update</a> 98, <a href="#">Up date 2000</a> Internet Resources included in each unit.</p> <p><a href="#">Administrator's Bulletin</a></p>	<p>Contain foundational and learning objectives, C. E. L. s., Factors of Scientific Literacy, Instructional Activities</p> <ol style="list-style-type: none"> <li><a href="#">1. Adaptation and Succession</a></li> <li><a href="#">2. The Moving Crust</a></li> <li><a href="#">3. Solutions</a></li> <li><a href="#">4. Energy Resources in Saskatchewan</a></li> <li><a href="#">5. Earth and Space</a></li> </ol> <p><b>Optional Units of Study</b></p> <ol style="list-style-type: none"> <li><a href="#">1. Consumer Product Testing</a></li> <li><a href="#">2. Plant Growth</a></li> <li><a href="#">3. Energy and Machines</a></li> </ol> <p><a href="#">Assessment and Evaluation</a></p> <p><a href="#">Templates for Assessment and Evaluation</a></p> <p><a href="#">Key Resource Correlations</a> listing correlations to Core Units of Study</p> <p><a href="#">A Bibliography for the Middle Level Update</a> 98, <a href="#">Up date 2000</a> Internet Resources included in each unit.</p> <p><a href="#">Administrator's Bulletin</a></p>	<p>Contain foundational and learning objectives, C. E. L. s., Factors of Scientific Literacy, Instructional Activities</p> <ol style="list-style-type: none"> <li><a href="#">1. Saskatchewan-the Environment</a></li> <li><a href="#">2. Chemistry and You</a></li> <li><a href="#">3. Using Electricity</a></li> <li><a href="#">4. Risks and Limits</a></li> <li><a href="#">5. The Atmosphere</a></li> </ol> <p><b>Optional Units of Study</b></p> <ol style="list-style-type: none"> <li><a href="#">1. The Atmosphere</a></li> <li><a href="#">2. Fluids and Pressure</a></li> <li><a href="#">3. Diversity of Life</a></li> </ol> <p><a href="#">Assessment and Evaluation</a></p> <p><a href="#">Templates for Assessment and Evaluation</a></p> <p><a href="#">Key Resource Correlations</a> listing correlations to Core Units of Study</p> <p><a href="#">A Bibliography for the Middle Level Update</a> 98, <a href="#">Up date 2000</a> Internet Resources included in each unit.</p> <p><a href="#">Administrator's Bulletin</a></p>

# Planning Guidelines for Saskatchewan Learning's Grades 1-5 Science Program of Study

Time Allocation: 150 minutes per 1500 minutes or 10% of instructional cycle

[Unit Planning Guidelines](#); [Assessment and Evaluation](#); [Assessment and Evaluation Templates](#); [Science 1-5 Evaluation Project Classroom Organization for Teaching Science](#); Additional Planning Considerations: [Core Curriculum Components and Initiatives Dimensions of Scientific Literacy](#) serve as the Foundational Learning Objectives to be developed at each grade level.

Resources: [Bibliography](#); [Update 98](#), [Update 2000](#) [Administrator's Information Bulletin and Key Resources](#)

Directory of Science Education Websites Web Address: <http://avel.edu.au/sci-tech/dosew.html>

The Gateway to Educational Materials Web Address: <http://www.thegateway.org/>

Saskatchewan Learning's Science Curriculum Web Address: <http://www.sasked.gov.sk.ca/docs/science.html>

Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
<p><a href="#">Factors of Scientific Literacy</a></p> <p><b>Core Units</b></p> <ol style="list-style-type: none"> <li><a href="#">Animals</a></li> <li><a href="#">Earth</a></li> <li><a href="#">Motion</a></li> <li><a href="#">Plants</a></li> <li><a href="#">Senses</a></li> </ol> <p><b>Optional Units</b></p> <ol style="list-style-type: none"> <li><a href="#">Classifying Matter</a></li> <li><a href="#">The Sky</a></li> </ol>	<p><a href="#">Factors of Scientific Literacy</a></p> <p><b>Core Units</b></p> <ol style="list-style-type: none"> <li><a href="#">Habitats</a></li> <li><a href="#">Magnets</a></li> <li><a href="#">Plant Growth</a></li> <li><a href="#">Weather</a></li> </ol> <p><b>Optional Units</b></p> <ol style="list-style-type: none"> <li><a href="#">Air and Water</a></li> <li><a href="#">Dinosaurs</a></li> <li><a href="#">Foods</a></li> <li><a href="#">Measuring Matter</a></li> <li><a href="#">Oceans</a></li> </ol>	<p><a href="#">Factors of Scientific Literacy</a></p> <p><b>Core Units</b></p> <ol style="list-style-type: none"> <li><a href="#">Animals</a></li> <li><a href="#">Earth</a></li> <li><a href="#">Properties of Matter</a></li> <li><a href="#">The Solar System</a></li> </ol> <p><b>Optional Units</b></p> <ol style="list-style-type: none"> <li><a href="#">Fire and Fuels</a></li> <li><a href="#">Heating and Cooling</a></li> <li><a href="#">Plant Structures and Adaptations</a></li> <li><a href="#">Simple Machines</a></li> <li><a href="#">Sound</a></li> </ol>	<p><a href="#">Factors of Scientific Literacy</a></p> <p><b>Core Units</b></p> <ol style="list-style-type: none"> <li><a href="#">Cells and Systems</a></li> <li><a href="#">Forms of Energy</a></li> <li><a href="#">Fossils and Rocks</a></li> <li><a href="#">Predicting Weather</a></li> <li><a href="#">Electricity and Magnetism</a></li> </ol> <p><b>Optional Units</b></p> <ol style="list-style-type: none"> <li><a href="#">Light</a></li> <li><a href="#">Nutrition and Digestion</a></li> <li><a href="#">Plant Diversity</a></li> <li><a href="#">Senses</a></li> <li><a href="#">Vertebrates and Invertebrates</a></li> </ol>	<p><a href="#">Factors of Scientific Literacy</a></p> <p><b>Core Units</b></p> <ol style="list-style-type: none"> <li><a href="#">Heat</a></li> <li><a href="#">Matter and Its Changes</a></li> <li><a href="#">Plant Structure and Function</a></li> <li><a href="#">Resources</a></li> <li><a href="#">Communities and Ecosystems</a></li> </ol> <p><b>Optional Units</b></p> <ol style="list-style-type: none"> <li><a href="#">Human Circulation and Breathing</a></li> <li><a href="#">Machines and Work</a></li> <li><a href="#">Oceans</a></li> </ol>