

Grades 5 to Senior 1 Science Learning Resources: Annotated Bibliography

A Reference for Selecting
Learning Resources
(November 2000)

Manitoba
Education
and Training

Éducation
et Formation
provinciales
Manitoba



**GRADES 5 TO SENIOR 1 SCIENCE
LEARNING RESOURCES:
ANNOTATED BIBLIOGRAPHY**

*A Reference for Selecting
Learning Resources
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PREFACE

Grades 5 to Senior 1 Science Learning Resources: Annotated Bibliography: A Reference for Selecting Learning Resources (November 2000) is a reference tool provided by Manitoba Education and Training to help educators select student and teacher learning resources that support Grades 5 to Senior 1 science instruction. The annotated bibliography describes strengths and weaknesses (if applicable) of each resource listed. It is intended to be used as a reference for selecting learning resources along with *The Manitoba Text Book Bureau Catalogue (2000-2001)*, which includes a listing of science learning resources, as well as ordering information and prices. These resources can also be purchased by visiting the online version of *The Manitoba Text Book Bureau Catalogue*:
<http://www.edu.gov.mb.ca/metks4/curricul/learnres/mtbb>

The learning resources listed in the *Grades 5 to Senior 1 Science Learning Resources: Annotated Bibliography: A Reference for Selecting Learning Resources (November 2000)* were reviewed in April 2000 for the purpose of identifying materials that support Manitoba's science curricula. Thirteen educators from across Manitoba participated in the review. All participants were selected by Manitoba Education and Training from superintendent nominations.

INTRODUCTION

Foreword

Grades 5 to Senior 1 Science Learning Resources: Annotated Bibliography: A Reference for Selecting Learning Resources (November 2000) identifies the science learning resources that are philosophically congruent with Manitoba's science curricula. *Grades 5 to 8 Science: Manitoba Curriculum Framework of Outcomes* and *Senior 1 Science: Manitoba Curriculum Framework of Outcomes* identify prescribed student learning outcomes for Grades 5 through Senior 1 science in Manitoba. Student learning outcomes in science are divided into thematic clusters at each grade. In addition, a "0" (zero) cluster identifies overall skills and attitudes required for each grade.

A call for science resources was issued to publishers, producers, and distributors of science materials. The call for science learning resources included teacher content reference materials. A team of teacher-evaluators from Manitoba schools examined the submissions and made recommendations regarding the suitability of the resources using a collaborative review process.

The selection of learning resources in this annotated bibliography was based on the fidelity with the rationale, philosophy, processes, and outcomes of *Grades 5 to 8 Science: Manitoba Curriculum Framework of Outcomes* and *Senior 1 Science: Manitoba Curriculum Framework of Outcomes*. All the resources included in this annotated bibliography have been designated as Grades 5 to Senior 1 science learning resources. Resources that match intended audiences and that aid in the implementation and achievement of prescribed learning outcomes have been identified.

Special Thanks

In April 2000, 13 educators were selected by Manitoba Education and Training. These educators reviewed over 189 items that were received in response to the call to publishers for resource submissions. Manitoba Education and Training is grateful to the individuals involved in the review and selection processes for identifying the best student and teacher resources for Grades 5 to Senior 1 science curricula.

Appreciation is also extended to all school divisions within Manitoba that supported the teachers' participation in the review and selection processes.

Finally, appreciation is extended to the publishers, producers, and distributors who submitted resources designed for Manitoba's science frameworks.

Resource Selection Criteria

The learning resources in this annotated bibliography were selected according to the following criteria:

- **Curriculum Fit/Content/Philosophy:** Evaluators determined the suitability of each resource by considering the degree to which the content and processes of the resource align with the curricula, thus providing support for teacher implementation. Evaluators also determined the degree to which the resource provides for multiple approaches to learning, has a wide range of use, is current, and includes a variety of media formats.
- **Instructional Design:** Evaluators determined the appropriateness of the resource in terms of instructional design, determining the degree to which the resource stated instructional goals and learner outcomes, and addressed a variety of learning and teaching styles.
- **Social Considerations:** Evaluators determined the appropriateness of the resource in terms of social concerns. They considered the degree to which the resource is free of bias and stereotyping, includes Canadian content, utilizes culturally diverse examples, and accurately portrays First Nations, Inuit, and Métis peoples.
- **Technical Design:** Evaluators determined the appropriateness of the resource in terms of technical design, considering the degree to which the resource was visually interesting, appealing, and had a logical and consistent form.

When using this annotated bibliography to select learning and teaching resources, teachers should consider how the resources meet the learning requirements of students and the perspectives of their own student population.

Information on a specific learning resource may be obtained from the descriptive information in this annotated bibliography, as well as from the supplier, published reviews, colleagues, and an examination of the resource.

Terms and Definitions

The following terms and definitions are used in this annotated bibliography to describe the learning resources:

-
- **Breadth:** identifies student learning resources that address a wide range of topics (with the highest possible level of fidelity with the curriculum framework) for a particular course/grade.
 - **Depth:** identifies student learning resources (with the highest possible level of fidelity with the curriculum framework) that provide especially effective learning experiences for students for a particular grouping of student learning outcomes.
 - **Breadth and Depth:** identifies comprehensive learning resources that provide both breadth and depth dimensions for a particular grouping of student learning resources.
 - **Teacher Reference:** identifies resources that assist teachers in implementing Manitoba's science curricula.
 - **Teacher Content Reference:** identifies resources that include teaching suggestions and learning activities for the science classroom.
 - **Teacher Guide:** identifies a separate guide for teachers or a teacher's edition of a student text.

Organization

The learning resources described in this annotated bibliography include references to the science clusters that comprise the Grades 5 to 8 and the Senior 1 science curricula.

Cluster Titles Chart: Grades 5 to Senior 1 Science

Clusters \ Grades	Grade 5	Grade 6	Grade 7	Grade 8	Senior 1
Cluster 0	Overall Skills and Attitudes (to be integrated into Clusters 1 to 4)				
Cluster 1	Maintaining a Healthy Body	Diversity of Living Things	Interactions within Ecosystems	Cells and Systems	Reproduction
Cluster 2	Properties of and Changes in Substances	Flight	Particle Theory of Matter	Optics	Atoms and Elements
Cluster 3	Forces and Simple Machines	Electricity	Forces and Structures	Fluids	Nature of Electricity
Cluster 4	Weather	Exploring the Solar System	Earth's Crust	Water Systems	Exploring the Universe

Grades 5 to Senior 1 Science Cluster Descriptions

Grade 5, Cluster 0: Overall Skills and Attitudes

Cluster 0 comprises nine categories of specific student learning outcomes (SLOs) that describe the skills and attitudes involved in scientific inquiry, the design process, or both.

In scientific inquiry at Grades 5 and 6*, students begin to develop the concept of a fair test. This includes developing a prediction/hypothesis that identifies a cause and effect relationship; controlling variables; repeating measurements to increase accuracy and reliability; and drawing conclusions that support or reject their initial predictions/hypotheses. In the design process, students continue to identify and address practical problems through the construction of a prototype. Increasingly sophisticated criteria are used to analyze a prototype, including use of recycled materials, cost, and reliability. Students begin to apply their problem-solving skills in the evaluation of consumer products based on

*This description of Grade 5, Cluster 0 is also used to characterize Grade 6, Cluster 0: Overall Skills and Attitudes (see page xiv). However, the specific SLOs for Cluster 0 vary at Grade 5 and Grade 6.

identified criteria in order to determine the best product for a specific purpose. For example, in choosing between pre-packaged pizzas, the various factors of cost, nutritional value, and packaging may influence students' evaluation of the product.

Although the thematic clusters (Clusters 1 to 4) include certain skills and attitudes, Cluster 0 fully defines scientific inquiry and design process skills and attitudes at each grade level. Teachers should select appropriate contexts to introduce and reinforce Cluster 0 SLOs over the course of the school year. To assist in planning and to facilitate curricular integration, many SLOs within Cluster 0 are accompanied by links to SLOs in other subject areas, specifically English language arts (ELA) and mathematics (Math). There are also links to Technology As a Foundation Skill Area (TFS).

Grade 5, Cluster 1: Maintaining a Healthy Body

The study of the human body at Grade 5 focusses on the maintenance of good health. Students learn about the role that nutrients play, and how to plan balanced and nutritious meals using *Canada's Food Guide to Healthy Eating*. Students gain experience in interpreting nutritional information on food labels, and in evaluating images presented by the media. A study of the major body systems and their role in the healthy functioning of the human body helps students to appreciate the nature and function of each, and the interrelationships that exist between systems. Students explore how lifestyle choices and environmental factors can affect personal health.

Grade 5, Cluster 2: Properties of and Changes in Substances

In this cluster, students deepen their understanding of the characteristics and properties of substances, and the changes that occur in substances in different situations. Through their explorations, students identify the three states of matter — solids, liquids, and gases — and describe the properties of each. Students observe examples of reversible and non-reversible changes including changes of state. Students also investigate how the characteristics and properties of substances are altered during physical and chemical changes. Students identify examples of these changes in the world around them. Safety practices related to chemical products in the home are addressed. Students evaluate household products by using criteria such as efficiency, cost, and environmental impact.

Grade 5, Cluster 3: Forces and Simple Machines

In this cluster, students increase their understanding of forces through the study of simple machines. Emphasis is placed on investigating a variety of simple machines and recognizing their usefulness for moving and lifting loads. Students explore how simple machines are used in daily life, and they identify advantages

and disadvantages of using simple machines for a given task. Students apply their knowledge of simple machines by designing, constructing, and evaluating a prototype.

Grade 5, Cluster 4: Weather

In this cluster, students learn that daily weather conditions are not the result of random occurrences, but of global systems that can be predicted on a short-term and a seasonal basis. Through observations and measurements, students investigate the properties of air and other aspects of daily weather. Students learn to interpret public weather reports and investigate the usefulness of various ways of predicting the weather. Understanding the meaning of severe weather forecasts and the preparations to ensure personal safety are emphasized. Students recognize the role of technology in increasing scientific understanding of weather while appreciating the limitations in accurately predicting long-term weather trends. They also investigate factors that influence climate in Manitoba and across Canada.

Grade 6, Cluster 0

Cluster 0 comprises nine categories of specific student learning outcomes (SLOs) that describe the skills and attitudes involved in scientific inquiry, the design process, or both.

In scientific inquiry at Grades 5 and 6*, students begin to develop the concept of a fair test. This includes developing a prediction/hypothesis that identifies a cause and effect relationship; controlling variables; repeating measurements to increase accuracy and reliability; and drawing conclusions that support or reject their initial predictions/hypotheses. In the design process, students continue to identify and address practical problems through the construction of a prototype. Increasingly sophisticated criteria are used to analyze a prototype, including use of recycled materials, cost, and reliability. Students begin to apply their problem-solving skills in the evaluation of consumer products based on identified criteria in order to determine the best product for a specific purpose. For example, in choosing between pre-packaged pizzas, the various factors of cost, nutritional value, and packaging may influence students' evaluation of the product.

*This description of Grade 6, Cluster 0 is also used to characterize Grade 5, Cluster 0: Overall Skills and Attitudes (see page xii). However, the specific SLOs for Cluster 0 vary at Grade 5 and Grade 6.

Although the thematic clusters (Clusters 1 to 4) include certain skills and attitudes, Cluster 0 fully defines scientific inquiry and design process skills and attitudes at each grade. Teachers should select appropriate contexts to introduce and reinforce Cluster 0 SLOs over the course of the school year. To assist in planning and to facilitate curricular integration, many SLOs within Cluster 0 are accompanied by links to SLOs in other subject areas, specifically English language arts (ELA) and mathematics (Math). There are also links to Technology As a Foundation Skill Area (TFS).

Grade 6, Cluster 1: Diversity of Living Things

In this cluster, students develop an appreciation of the diversity of living things. Students study a variety of classification systems, and construct and use their own as well as those developed by others. In doing so, they recognize the advantages and disadvantages of classification systems in organizing information. The animal kingdom provides a specific focus with students investigating different types of animals to understand where they fit in the classification of living things. Students compare and contrast the adaptations of closely related vertebrates living in different habitats, and the adaptations of vertebrates living today with those that lived in the past. Students learn about the contributions of individual scientists who have increased our understanding of the diversity of living things.

Grade 6, Cluster 2: Flight

In this cluster, a study of the properties of fluids helps students to understand how flight can be achieved. Through the testing of models, students explore how the forces of thrust, drag, lift, and gravity act on living things or devices that fly through the air. They learn how specific adaptations or modifications can alter lift or drag. Different means of propulsion are compared and the use of unbalanced forces to steer aircraft and spacecraft are described. Students apply their understanding of forces and flight through the construction of a prototype that flies and meets specific performance criteria. Students also examine the history of the development of air travel and identify its impact on the way people work and live.

Grade 6, Cluster 3: Electricity

In this cluster, students explore current and static electricity and compare and contrast the characteristics of each. These explorations help students identify and appreciate the importance of electricity in everyday life

including the need for safe practices when using electricity. Students have the opportunity to apply their knowledge of series and parallel circuits in the construction of a prototype that performs a specific function. They demonstrate how electricity can be transformed into motion, and motion into electricity. Students also identify other types of transformations that can take place. Students discuss advantages and disadvantages of various renewable and non-renewable sources of electrical energy, and recognize the importance of energy conservation. The creation of an action plan to help reduce electrical energy consumption helps students understand the impacts they can make.

Grade 6, Cluster 4: Exploring the Solar System

In this cluster, students develop an understanding of the Earth in space, the solar system, and the role of space research programs in increasing scientific knowledge. Positive and negative impacts arising from space research programs are addressed, and the contributions of Canadians to these programs are highlighted. Students develop an appreciation for the nature of science by examining the changing conceptions of the Earth's position in space and by differentiating between astronomy and astrology. Students investigate the causes of phenomena such as the cycle of day and night, the yearly cycle of the seasons, moon phases, eclipses, and the reasons why the apparent movements of celestial bodies in the night sky are regular and predictable. An important distinction is made between weight and mass.

Grade 7, Cluster 0: Overall Skills and Attitudes

Cluster 0 comprises nine categories of specific student learning outcomes (SLOs) that describe the skills and attitudes involved in scientific inquiry, the design process, or both.

In scientific inquiry at Grades 7 and 8*, students build on the concept of a fair test developed in Grades 5 and 6. This includes developing a prediction/hypothesis that identifies a cause and effect relationship between dependent and independent variables; repeating experiments to increase accuracy and reliability; looking for alternative explanations for observations; recognizing strengths and weaknesses of different methods of collecting and displaying data; and determining potential sources of

*This description of Grade 7, Cluster 0 is also used to characterize Grade 8, Cluster 0: Overall Skills and Attitudes (see page xix). However, the specific SLOs for Cluster 0 vary at Grade 7 and Grade 8.

error. In the design process, students construct prototypes to solve practical problems and analyze them according to criteria such as cost, efficiency, and environmental considerations. Students continue to apply their problem-solving skills in the evaluation of consumer products in order to determine the best product for a particular purpose. This involves identifying priorities. For example, in choosing a brand of sunscreen, to what extent do cost, effectiveness, and the environmental track record of the company affect the decision?

Although the thematic clusters (Clusters 1 to 4) include certain skills and attitudes, Cluster 0 fully defines scientific inquiry and design process skills and attitudes at each grade. Teachers should select appropriate contexts to introduce and reinforce Cluster 0 SLOs over the course of the school year. To assist in planning and to facilitate curricular integration, many SLOs within Cluster 0 are accompanied by links to SLOs in other subject areas, specifically English language arts (ELA) and mathematics (Math). There are also links to Technology As a Foundation Skill Area (TFS).

Grade 7, Cluster 1: Interactions Within Ecosystems

In this cluster, students investigate the complex interactions between organisms and their environment. Students identify biotic and abiotic components of ecosystems, and analyze the cycling of matter that takes place within them. This includes an investigation of the transfer of energy that occurs at various consumer levels, the implications of the loss of producers and consumers to the transfer of energy, and the potential for bio-accumulation within an ecosystem. Students explore ecological succession and assess the positive and negative impacts of human interventions on this natural process. Students discuss environmental, social, and economic factors that should be considered in the management and preservation of ecosystems. They propose a course of action that would help protect the habitat of a particular organism. Students observe micro-organisms with microscopes and discuss their beneficial and harmful roles. Students consider how knowledge of micro-organisms has improved food production and preservation techniques.

Grade 7, Cluster 2: Particle Theory of Matter

In this cluster, students explore the nature of science by examining the development of scientific theories. One theory, the particle theory of matter, is investigated in detail. Students use the particle theory to describe changes of state, to differentiate between pure substances and mixtures, and to describe characteristics of solutions. An important

distinction is made between heat and temperature. Students demonstrate how heat is transmitted by way of conduction, convection, and radiation. They plan and conduct experiments to identify substances that are good insulators and conductors of heat. They apply this knowledge through the design and construction of a prototype that controls the transfer of heat energy. Students also identify different forms of energy that can be transformed into heat energy, and recognize that heat is the most common by-product of other energy transformations. Students classify substances used in daily life as pure substances, mechanical mixtures, and solutions. They demonstrate different methods of separating the components of mixtures. Students experiment to determine factors that affect solubility. They describe the concentration of solutions in qualitative and quantitative terms, and demonstrate the differences between saturated and unsaturated solutions. The potential harmful effects of some substances on the environment are discussed, and methods to ensure safe use and disposal are identified.

Grade 7, Cluster 3: Forces and Structures

In this cluster, students explore a variety of natural and human-built structures, and the forces that act on them. Students investigate internal and external forces acting on structures and recognize that these forces may affect structural strength and stability. Students identify common shapes used to increase strength and stability in structures, and methods used to enhance the strength of the materials used. The efficiency of a structure is assessed by comparing its mass with the mass of the load it supports. Students apply their understanding of forces and structures by evaluating the appropriateness of a specific structure's design, and by constructing a structure of their own that supports a given load and remains standing when a particular force is applied.

Grade 7, Cluster 4: Earth's Crust

In this cluster, students investigate Earth's geology, including rock and mineral formation, changes in the landscape over time, and human use of geological resources. Students describe processes involved in the location, extraction, processing, and recycling of geological resources found in Manitoba and Canada. Students recognize that soil is an important natural resource and they discuss the importance of soil conservation. Students identify environmental, social, and economic factors that should be considered in making informed decisions about land use. They examine theories explaining the Earth's geology, and

recognize the role of technology in the development of new scientific theories. Specialized careers involving the science and technology of the Earth's crust are also explored.

Grade 8, Cluster 0: Overall Skills and Attitudes

Cluster 0 comprises nine categories of specific student learning outcomes (SLOs) that describe the skills and attitudes involved in scientific inquiry, the design process, or both.

In scientific inquiry at Grades 7 and 8*, students build on the concept of a fair test developed in Grades 5 and 6. This includes developing a prediction/hypothesis that identifies a cause and effect relationship between dependent and independent variables; repeating experiments to increase accuracy and reliability; looking for alternative explanations for observations; recognizing strengths and weaknesses of different methods of collecting and displaying data; and determining potential sources of error. In the design process, students construct prototypes to solve practical problems and analyze them according to criteria such as cost, efficiency, and environmental considerations. Students continue to apply their problem-solving skills in the evaluation of consumer products in order to determine the best product for a particular purpose. This involves identifying priorities. For example, in choosing a brand of sunscreen, to what extent do cost, effectiveness, and the environmental track record of the company affect the decision?

Although the thematic clusters (Clusters 1 to 4) include certain skills and attitudes, Cluster 0 fully defines scientific inquiry and design process skills and attitudes at each grade. Teachers should select appropriate contexts to introduce and reinforce Cluster 0 SLOs over the course of the school year. To assist in planning and to facilitate curricular integration, many SLOs within Cluster 0 are accompanied by links to SLOs in other subject areas, specifically English language arts (ELA) and mathematics (Math). There are also links to Technology As a Foundation Skill Area (TFS).

*This description of Grade 8, Cluster 0 is also used to characterize Grade 7, Cluster 0: Overall Skills and Attitudes (see page xvi). However, the specific SLOs for Cluster 0 vary at Grade 7 and Grade 8.

Grade 8, Cluster 1: Cells and Systems

In this cluster, students investigate living things through a focus on cells and systems. Cell theory provides the basis for exploring cells and unicellular and multicellular organisms. Students identify major events and technological innovations that have enabled scientists to increase our understanding of cell biology. Microscopes are used to observe and compare the general structure and function of plant and animal cells. Students examine important processes that take place within the cell, including the movement of nutrients and wastes across cell membranes. The need for specialization of cells and tissues in multicellular organisms is discussed as are the structural and functional relationships among cells, tissues, organs, and systems. Investigations of the circulatory and respiratory systems highlight their importance to the body and lead to an understanding of how body systems function interdependently. Students identify components of the body's primary and secondary defense systems. They examine medical advances that enhance the human body's defence mechanisms, and research disorders and diseases that can affect body systems.

Grade 8, Cluster 2: Optics

In this cluster, students broaden their understanding of how light is produced, transmitted, and detected. Students identify colours as different wavelengths of light, and explore why objects appear to have colour. Various types of electromagnetic radiation are compared. The potential positive and negative impacts of technological devices that use electromagnetic radiation are discussed. Students explore the principles and properties of reflection and refraction, and their application in everyday situations. Students investigate the characteristics of concave and convex mirrors and lenses. They enhance their understanding of how these devices function in a variety of optical tools. Students also demonstrate the formation of images using lenses and compare the function of the human eye to that of a camera lens.

Grade 8, Cluster 3: Fluids

In this cluster, students investigate the properties of fluids, including viscosity, density, and compressibility. Students identify products in which viscosity is an important characteristic, and plan and conduct experiments to determine factors that affect flow. Students illustrate effects of temperature on density, and they compare the effects of fluids with different densities on the buoyant force of an object. They use the

particle theory of matter to explain the relationships among pressure, volume, and temperature. Investigations of the relative compressibility of fluids are related to the ability of liquids and gases to transmit forces in hydraulic and pneumatic devices. Students apply their understanding of fluids within a practical context through the design, construction, and testing of a prototype that utilizes a hydraulic or pneumatic system.

Grade 8, Cluster 4: Water Systems

In this cluster, students investigate the properties of water, its global manifestations, and its impacts. They compare and contrast fresh and salt water, describe factors that affect ocean currents, and recognize the impact of large bodies of water and ocean currents on regional climates. Features of the North American drainage system are identified, and factors that influence erosion and deposition in streams and large bodies of water examined. Students determine causes of flooding and examine methods and technologies used to contain or prevent damage from erosion and floods. Sources of drinking water are identified, methods for treating water are discussed, and waste-water disposal systems are compared. Students explore water pollution problems and identify environmental, social, and economic factors important to the management of water resources.

Senior 1, Cluster 0: Overall Skills and Attitudes

Cluster 0 comprises nine categories of specific student learning outcomes that describe the skills and attitudes involved in scientific inquiry and the decision-making process for STSE issues*. In Grades 5 to 8, students develop scientific inquiry through the development of an hypothesis/prediction, the identification and treatment of variables, and the formation of conclusions. Students begin to make decisions based on scientific facts and refine their decision-making skills as they progress through the grades, gradually becoming more independent. Students also acquire key attitudes, an initial awareness of the nature of science, and other skills related to research, communication, the use of information technology, and cooperative learning.

In Senior 1, students continue to use scientific inquiry as an important process in their science learning, but also recognize that STSE issues require a more sophisticated treatment through the decision-making

*STSE stands for Science, Technology, Society, and Environment.

process. This process has been delineated in the Cluster 0 specific learning outcomes.

Teachers should select appropriate contexts to introduce and reinforce scientific inquiry, the decision-making process, and positive attitudes within the thematic clusters (Clusters 1 to 4) over the course of the school year. For example, students will use the decision-making process as they examine a current biotechnology issue in Cluster 1. To assist in planning and to facilitate curricular integration, many specific learning outcomes within this cluster are accompanied by links to specific learning outcomes in other subject areas, specifically English language arts (ELA) and mathematics (Math). There are also links to Technology As a Foundation Skill Area (TFS).

Senior 1, Cluster 1: Reproduction

Reproduction is an essential biological mechanism for the continuity and diversity of species. Students compare sexual and asexual methods of reproduction in this cluster. They learn how the human reproductive system functions and describe the major stages of human development from conception to birth. Students recognize that the nucleus of a cell contains genetic information and is responsible for the transmission of traits from one generation to the next. They also discuss factors that may change a cell's genetic information, including environmental factors. Using the knowledge they have gained, students also address a current biotechnology issue.

Senior 1, Cluster 2: Atoms and Elements

This cluster builds on the particle theory of matter learned in previous grades. Students become familiar with the basic constituents of matter by learning about the historical development of the atomic model and the periodic table. Various investigations of the properties of elements and compounds will acquaint students with chemical symbols and families, as well as with natural phenomena and everyday technologies that demonstrate chemical change.

Senior 1, Cluster 3: Nature of Electricity

The conceptual development of the particle model of electricity underlies an understanding of electrostatics and current electricity. To develop and test this model, students construct simple devices like an electrophorus and investigate electrostatic phenomena. A transition from static to current electricity enables the learner to investigate circuits and make

connections to daily applications like the cost of electrical energy and the safety and efficiency of electrical appliances. Additionally, students investigate hydroelectric power and address sustainability issues associated with the generation and transmission of electricity in Manitoba.

Senior 1, Cluster 4: Exploring the Universe

This cluster leads students through an exploration of the universe starting with some basic hands-on astronomy and ending with a critical look at issues surrounding space science and technology. Students observe and locate visible celestial objects. This knowledge provides them with an appreciation for the relevance of astronomy to various peoples. Students develop an understanding of the origin, evolution, and components of the universe. They concurrently research and study Canada's involvement in international space exploration and evaluate the impact of space science and technologies in terms of their benefits and risks to the human race.

Resource Description: Sample Page

LEARNING AND TEACHING RESOURCES

Series/ Title	Discover Flight Active Learning Series	Grade Level(s) <input type="checkbox"/> K <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12					
Resource Designation/ Type of Resource	Author(s) Erasmus, Ed	Intended User(s) Teacher					
Range of Classroom Use	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-right: 1px solid black; padding: 2px;"> Resource Designation • Teacher Resource </td> <td style="padding: 2px;"> Type of Materials • Teacher Content Resources • Machine Master </td> </tr> </table>	Resource Designation • Teacher Resource	Type of Materials • Teacher Content Resources • Machine Master	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;"> Publisher/Producer Educative Educational Products Ltd. </td> </tr> <tr> <td style="padding: 2px;"> Distributor/Supplier Educative Educational Products Ltd. 243 Sandown Road Barrie, ON L4N 9A3 </td> </tr> <tr> <td style="padding: 2px;"> Telephone (705) 725-1166 Toll Free (800) 563-1166 Fax (705) 725-1167 Internet www.educativeproducts.ca </td> </tr> </table>	Publisher/Producer Educative Educational Products Ltd.	Distributor/Supplier Educative Educational Products Ltd. 243 Sandown Road Barrie, ON L4N 9A3	Telephone (705) 725-1166 Toll Free (800) 563-1166 Fax (705) 725-1167 Internet www.educativeproducts.ca
Resource Designation • Teacher Resource	Type of Materials • Teacher Content Resources • Machine Master						
Publisher/Producer Educative Educational Products Ltd.							
Distributor/Supplier Educative Educational Products Ltd. 243 Sandown Road Barrie, ON L4N 9A3							
Telephone (705) 725-1166 Toll Free (800) 563-1166 Fax (705) 725-1167 Internet www.educativeproducts.ca							
Overall Annotation (if series)	Range of Classroom Use • Concept						
Resource Annotation and Comments	Description This teacher's resource includes specific lessons and learning experiences to address the mastery of specific learning outcomes for Cluster 2 - Flight 2 . It includes information on flight processes. It includes content for group work, critical-thinking skills in model creation and physical education, and a glossary of terms. Background information on concepts related to flight is included, as well as opportunities to address specific learning outcomes for Cluster 2 - Concept 2: Air and Altitude . Suggestions for assessment, graphic organizers, strategies for cooperative learning skills, and cross-curricular activity links are included. There is no index.						
Physical Characteristics Order Details	Synopsis Some of the suggested learning experiences (enriching) develop process outcomes to also cover the higher-level skills and attitudes related to evaluation and synthesis. This resource needs to be supplemented to address specific learning outcomes related to the relationship of air to water, unbalanced forces, and the concept of lift as equilibrium.						
Physical Characteristics Order Details	Discover Flight Physical Characteristics • 159 pages, black						
Physical Characteristics Order Details	Grade <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12 Check <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4						
Physical Characteristics Order Details	Copyright: © 2000/01/01 ISBN: 0007 Discover Flight						

Discover Flight - Page 1 of 1
 Associated Bibliography - 1

Note: Definitions of resource descriptions appear on the following page.

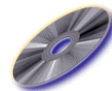
Resource Description: Definitions

The following information is provided for each learning resource (as applicable):

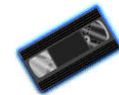
- **Series and Title:** integrated resources, series, and book collection names are indicated in *italics*
- **Resource Designation:** indicates student breadth, depth, breadth and depth, or teacher resource
- **Format:** is represented by an icon, such as



Print



CD-ROM



Videocassette

- **Annotation:** provides an overview of the learning resource. For integrated resources, an overall annotation describes each integrated resource as a whole, followed by descriptions of individual components where these have been recommended. In some cases, only one item of an integrated resource has been recommended. Stand-alone print materials are annotated individually. The annotation for each stand-alone software item describes the CD-ROM or disks, and any accompanying user's guide, teacher's guide or student answer book. The system requirements are specified for Macintosh and Windows versions, as applicable.
- **Comments:** provide additional information about the learning resource
- **Cautions:** alert teachers to potentially sensitive issues, community concerns, or comments about curriculum fit
- **Audience:**
 - **General:** the majority of students
 - **Struggling Learners:** students who have difficulty processing and understanding spoken, written, or visual information
 - **Gifted Learners:** students who demonstrate high performance capabilities in areas such as intellect, creativity, and/or specific academic disciplines
 - **ESL:** students who are learning English as a second language
- **Physical Characteristics:** identifies size, number of pages, soft cover or hard cover details for print materials and type of software

OBTAINING LEARNING RESOURCES

Purchase of Learning Resources

The learning resources described in this annotated bibliography will be listed with ordering information and prices in *The Manitoba Text Book Bureau Catalogue (2000-2001)*. For information or assistance regarding the purchase of learning resources listed in this catalogue, please contact:

The Manitoba Text Book Bureau (MTBB)

Box 910

Souris, MB R0K 2C0

Toll free: 800-305-5515 (in Manitoba)

Telephone: 204-483-4040 (outside Manitoba)

Fax: 204-483-3441

E-mail: schoolorde@gov.mb.ca

Online catalogue:

<http://www.edu.gov.mb.ca/metks4/curricul/learnres/mtbb>

Loans and Bookings for Learning Resources

The learning resources listed in this annotated bibliography are available to Manitoba educators from:

Instructional Resources Unit (IRU)

Manitoba Education and Training

1181 Portage Avenue

Winnipeg, MB R3G 0T3

Online catalogue: <http://libcat.merlin.mb.ca>

Educators who are registered with IRU may request learning resources from the library in person, by telephone, by mail, by facsimile transmission, or by electronic mail.

To register with the library, contact:

Circulation Desk, IRU (see address above)

Telephone: 204-945-5371 (in Winnipeg)

Toll free: 800-282-8069, ext. 5371 (outside Winnipeg)

Fax: 204-945-8756

E-mail: irucirc@edu.gov.mb.ca

To borrow books, multimedia kits, and audio CDs, contact:

Reference Desk, IRU (see address above)

Telephone: 204-945-7830/7851 (in Winnipeg)

Toll free: 800-282-8069, ext. 7830/7851 (outside Winnipeg)

Fax: 204-945-8756

E-mail: iruref@edu.gov.mb.ca

To request videocassettes, videodiscs, CD-ROMs, and selected kits, contact:

Media Booking, IRU (see address above)

Telephone: 204-945-7849 (in Winnipeg)

Toll free: 800-592-7330 (outside Winnipeg)

Fax: 204-945-8756

E-mail: irucirc@edu.gov.mb.ca

***ALPHABETICAL TITLE LISTING AND
ALPHABETICAL TITLE LISTING BY GRADE***

ALPHABETICAL TITLE LISTING

TITLE OF INTEGRATED RESOURCE/COLLECTION/SERIES	GRADE(S)	PAGE(S)
Series		
Addison Wesley Science & Technology 5	5	13-14
Addison Wesley Science & Technology 6	6	15-16
Addison Wesley Science & Technology 7	7	17-20
Addison Wesley Science & Technology 8	8	21-22
Nelson Science 9	S1	23-24
Nelson Science & Technology 7	7	25-29
Nelson Science & Technology 8	8	30-33
Pan Canadian Science Place 5	5	34-35
Pan Canadian Science Place 6	6	36
Science Everywhere 6	6	37
Sciencepower 7	7	38-39
Sciencepower 8	8	40-41
Sciencepower 9	S1	42-43

ALPHABETICAL TITLE LISTING

TITLE/SERIES OF STAND-ALONE RESOURCE	GRADE(S)	PAGE(S)
Print		
By Design: Technology Exploration & Integration <i>Teachers Helping Teachers</i>	6-8	44
Design and Technology System <i>Active Learning Series</i>	5-S1	45
Discover Flight <i>Active Learning Series</i>	6	46
Mathematics, Science, & Technology Connections <i>Teachers Helping Teachers</i>	5-8	47
Software		
Digital Field Trip to the Wetlands, The <i>The Digital Field Trip Series</i>	6,7	48
Starry Night Backyard	6,S1	49
Starry Night (Deluxe Version)	S1	50
Audio/Video		
Black Widow Spider and More	6	51
Cells and Tissues <i>Science Key Concepts Series</i>	8	52
Changes in Matter <i>Matter and Its Properties</i>	5	53
Destination Cosmos 20 - Telescope Trail <i>Destination Cosmos 20</i>	S1	54
Electromagnetic Spectrum, The <i>Science Key Concepts Series</i>	8	55
Exploring Phases of Matter <i>Matter and Its Properties</i>	5	56
How Do They...? Recycle Paper <i>How Do They...?</i>	5	57
How Do They...? Recycle Steel <i>How Do They...?</i>	5	58
Liftoff to Learning: Atmosphere Below <i>Liftoff to Learning</i>	5	59
Measuring Matter <i>Matter and Its Properties</i>	5,8	60
Observing the Properties of Matter <i>Matter and Its Properties</i>	5	61

ALPHABETICAL TITLE LISTING BY GRADE

Grade 5

TITLE OF RESOURCE	GRADE(S)	PAGE(S)
Series		
Addison Wesley Science & Technology 5	5	13-14
Pan Canadian Science Place 5	5	34-35
Print		
Design and Technology System <i>Active Learning Series</i>	5-S1	45
Mathematics, Science, & Technology Connections <i>Teachers Helping Teachers</i>	5-8	47
Audio/Video		
Changes in Matter <i>Matter and Its Properties</i>	5	53
Exploring Phases of Matter <i>Matter and Its Properties</i>	5	56
How Do They...? Recycle Paper <i>How Do They...?</i>	5	57
How Do They...? Recycle Steel <i>How Do They...?</i>	5	58
Liftoff to Learning: Atmosphere Below <i>Liftoff to Learning</i>	5	59
Measuring Matter <i>Matter and Its Properties</i>	5,8	60
Observing the Properties of Matter <i>Matter and Its Properties</i>	5	61

ALPHABETICAL TITLE LISTING BY GRADE

Grade 6

TITLE OF RESOURCE	GRADE(S)	PAGE(S)
Series		
Addison Wesley Science & Technology 6	6	15-16
Pan Canadian Science Place 6	6	36
Science Everywhere 6	6	37
Print		
By Design: Technology Exploration & Integration <i>Teachers Helping Teachers</i>	6-8	44
Design and Technology System <i>Active Learning Series</i>	5-S1	45
Discover Flight <i>Active Learning Series</i>	6	46
Mathematics, Science, & Technology Connections <i>Teachers Helping Teachers</i>	5-8	47
Software		
Digital Field Trip to the Wetlands, The <i>The Digital Field Trip Series</i>	6,7	48
Starry Night Backyard	6,S1	49
Audio/Video		
Black Widow Spider and More	6	51

ALPHABETICAL TITLE LISTING BY GRADE

Grade 7

TITLE OF RESOURCE	GRADE(S)	PAGE(S)
Series		
Addison Wesley Science & Technology 7	7	17-20
Nelson Science & Technology 7	7	25-29
Sciencepower 7	7	38-39
Print		
By Design: Technology Exploration & Integration <i>Teachers Helping Teachers</i>	6-8	44
Design and Technology System <i>Active Learning Series</i>	5-S1	45
Mathematics, Science, & Technology Connections <i>Teachers Helping Teachers</i>	5-8	47
Software		
Digital Field Trip to the Wetlands, The <i>The Digital Field Trip Series</i>	6,7	48

ALPHABETICAL TITLE LISTING BY GRADE

Grade 8

TITLE OF RESOURCE	GRADE(S)	PAGE(S)
Series		
Addison Wesley Science & Technology 8	8	21-22
Nelson Science & Technology 8	8	30-33
Sciencepower 8	8	40-41
Print		
By Design: Technology Exploration & Integration <i>Teachers Helping Teachers</i>	6-8	44
Design and Technology System <i>Active Learning Series</i>	5-S1	45
Mathematics, Science, & Technology Connections <i>Teachers Helping Teachers</i>	5-8	47
Audio/Video		
Cells and Tissues <i>Science Key Concepts Series</i>	8	52
Electromagnetic Spectrum, The <i>Science Key Concepts Series</i>	8	55
Measuring Matter <i>Matter and Its Properties</i>	5,8	60

ALPHABETICAL TITLE LISTING BY GRADE

Grade S1

TITLE OF RESOURCE	GRADE(S)	PAGE(S)
Series		
Nelson Science 9	S1	23-24
Sciencepower 9	S1	42-43
Print		
Design and Technology System <i>Active Learning Series</i>	5-S1	45
Software		
Starry Night Backyard	6,S1	49
Starry Night (Deluxe Version)	S1	50
Audio/Video		
Destination Cosmos 20 - Telescope Trail <i>Destination Cosmos 20</i>	S1	54

ANNOTATIONS

LEARNING AND TEACHING RESOURCES

Addison Wesley Science & Technology 5

Grade Level(s)

- K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Various Authors

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Depth • Teacher Reference 	<ul style="list-style-type: none"> • Series • Student Textbook • Teacher Guide • Blackline Master

<p>Publisher/Producer Pearson Education Canada</p> <p>Distributor/Supplier Pearson Education Canada 26 Prince Andrew Place Don Mills, ON M3C 2T8</p> <p>Telephone (416) 447-5101, ext. 3373 Toll Free (800) 563-9196 Fax (416) 447-2551 Internet www.pearsoned.ca</p>
--

Range of Classroom Use

- General
- Struggling Learner- suggestions for inclusive teaching strategies
- Gifted Learner- there are enrichment extensions for each topic included in the teacher guides

Annotation

Addison Wesley Science & Technology 5 resources recommended for use in Manitoba comprise a program overview, two student texts entitled *Changes in Matter* and *Weather*, and the accompanying teacher's guides. These resources correspond with Cluster 2: *Properties of and Changes in Matter*, and Cluster 4: *Weather*. The layout of the student texts is logical, consistent, and appropriate for the intended audience. Units include cross-curricular links as well as suggested web sites. Lessons are set up in a way that extension is encouraged. Teacher guides include blackline masters of a range of assessment strategies, including unit tests. The program philosophy is discussed in the program overview. There is no index.

Comments

Many outcomes are dealt with in a limited manner.

Addison Wesley Science & Technology Program Overview: Grades 3-6



The *Addison Wesley Science & Technology Program Overview: Grades 3-6* contains sections on the scope and sequence of the program: using the student book and teacher's guide; fostering scientific knowledge; developing students' skills; science and technology connections with the outside world; attitudes in science; managing your science and technology program; assessment and evaluation issues; and, incorporating language and literacy into a science program.

Physical Characteristics Grade 5 6 7 8 S1 Cluster 0 1 2 3 4
 • 47 pages, softcover

Copyright	ISBN/Order #	Title
2000	0-201-70644-X	Addison Wesley Science & Technology Program Overview: Grades 3-6

Changes in Matter (Student Text)



Changes in Matter addresses specific learning outcomes for Cluster 2: *Properties of and Changes in Substances* and Cluster 0: *Overall Skills and Attitudes*. The text is clear, organized by topic, and well laid out with illustrations, photographs, and diagrams. There are extensions for the design process and cross-curricular links to mathematics, English language arts, technology, art, and social studies. The hands-on learning experiences take into account a variety of learning styles.

Comments

Topics related to household chemical products and safety will need to be supplemented.

Physical Characteristics Grade 5 6 7 8 S1 Cluster 0 1 2 3 4
 • 52 pages, softcover

Copyright	ISBN/Order #	Title
1999	0-201-64986-1	Changes in Matter (Student Text)

Addison Wesley Science & Technology 5

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Various Authors

Intended User(s) Student, Teacher

Changes in Matter (Teacher's Guide)



The teacher's guide provides background science information for the concepts presented. Emphasis is given to technology through background notes on technological problem solving. There is a wide range of blackline masters including learning centre activity sheets, project planners, and unit tests. Suggested learning activities, safety notes, references, enrichment experiences, suggestions for self-assessment, and rubrics for the design project are included. Ongoing and end-of-unit assessments are provided as well as opportunities for metacognition.

Physical Characteristics

• 80 pages, softcover

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

1999 0-201-65434-2 Changes in Matter (Teacher's Guide)

Weather (Student Text)



Weather addresses the majority of specific learning outcomes for Cluster 4: *Weather*. The design process is well developed and opportunities for extension are provided. The text takes into account a variety of learning styles and teaching strategies. There are many opportunities to build prototypes using the design process, including the construction of weather instruments. The project at the end of the unit synthesizes concepts for the student. The text contains illustrations, photographs, and diagrams as well as cross-curricular links to mathematics, English language arts, technology, art, and social studies. The hands-on learning experiences take into account a variety of learning styles.

Comments

Several outcomes are covered in a limited way. Concepts related to global climate changes and safety concerns for severe weather and natural disasters will need to be supplemented.

Physical Characteristics

• 46 pages, softcover

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

1999 0-201-64984-5 Weather (Student Text)

Weather (Teacher's Guide)



The teacher's guide provides background science information for the concepts presented. Emphasis is given to technology through background notes on technological problem solving. There is a wide range of blackline masters including learning centre activity sheets, project planners, and unit tests. Suggested learning activities, safety notes, references, enrichment experiences, suggestions for self-assessment, and rubrics for the design project are included. Ongoing and end-of-unit assessments are provided as well as opportunities for metacognition.

Physical Characteristics

• 72 pages, softcover

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

1999 0-201-65432-6 Weather (Teacher's Guide)

LEARNING AND TEACHING RESOURCES

Addison Wesley Science & Technology 6

Grade Level(s)
 K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Various Authors

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Depth • Teacher Reference 	<ul style="list-style-type: none"> • Series • Student Textbook • Teacher Guide

Publisher/Producer Pearson Education Canada
Distributor/Supplier Pearson Education Canada 26 Prince Andrew Place Don Mills, ON M3C 2T8
Telephone (416) 447-5101, ext. 3373 Toll Free (800) 563-9196 Fax (416) 447-2551 Internet www.pearsoned.ca

Range of Classroom Use

<ul style="list-style-type: none"> • General • Struggling Learner- suggestions for inclusive teaching strategies
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Annotation

Addison Wesley Science and Technology 6 resources recommended for use in Manitoba comprise a program overview, one student text entitled *Space*, and the accompanying teacher's guide. These resources correspond with Cluster 4: *Exploring the Solar System*. Lessons are presented in a linear fashion, employing clear headings, colourful photographs, diagrams, and illustrations. Background information, assessment activities, and additional instructional suggestions are provided in the teacher's guide. The program philosophy is discussed in the program overview. There is no index.

Addison Wesley Science & Technology Program Overview: Grades 3-6


The *Addison Wesley Science & Technology Program Overview: Grades 3-6* contains sections on the scope and sequence of the program: using the student book and teacher's guide; fostering scientific knowledge; developing students' skills; science and technology connections with the outside world; attitudes in science; managing your science and technology program; assessment and evaluation issues; and, incorporating language and literacy into a science program.

Physical Characteristics Grade 5 6 7 8 S1 Cluster 0 1 2 3 4
 • 47 pages, softcover

Copyright	ISBN/Order #	Title
2000	0-201-70644-X	Addison Wesley Science & Technology Program Overview: Grades 3-6

Space (Student Text)


Space addresses the majority of specific learning outcomes for Cluster 4: *Exploring the Solar System*. It includes 14 lessons and a final project assignment. The text is clear, organized by topic, and well laid out. Lessons contain sections including 'get started,' 'work on it,' and 'communicate.' Some lessons provide opportunities to 'build on what you know.' Students are encouraged to use a "space portfolio" to record their activities throughout the unit.

Comments

Information about Canadians and space is limited to one lesson. Historical information regarding space science is also limited. The majority of learning experiences are teacher-directed.

Physical Characteristics Grade 5 6 7 8 S1 Cluster 0 1 2 3 4
 • 51 pages, softcover

Copyright	ISBN/Order #	Title
1999	0-201-64990-X	Space (Student Text)

LEARNING AND TEACHING RESOURCES

Addison Wesley Science & Technology 6

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Various Authors

Intended User(s) Student, Teacher

Space (Teacher's Guide)



The teacher's guide is divided into 14 lessons that clearly connect to the student text. Each lesson contains some background science and technology information not provided in the student text. Eight activity centre pages are provided as enrichment experiences and are included with blackline masters for student and teacher use.

Comments

Suggestions for assessment activities are low-level and will need to be supplemented. Cross-curricular links to mathematics and English language arts are only superficially developed. Some of the stated learning outcomes do not correspond with the Manitoba science framework.

Physical Characteristics

• 88 pages, softcover

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

1999 0-201-65438-5 *Space* (Teacher's Guide)

LEARNING AND TEACHING RESOURCES**Addison Wesley Science & Technology 7****Grade Level(s)**

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Chan, Cecelia, ed.

Intended User(s) Student, Teacher

Resource Designation

- Student-Breadth & Depth
- Teacher Reference

Type of Resource

- Series
- Student Textbook
- Teacher Guide

Publisher/Producer

Pearson Education Canada

Distributor/Supplier

Pearson Education Canada
26 Prince Andrew Place
Don Mills, ON M3C 2T8

Telephone (416) 447-5101, ext. 3373

Toll Free (800) 563-9196

Fax (416) 447-2551

Internet www.pearsoned.ca

Range of Classroom Use

- General
- ESL- suggestions for ESL instruction are included in the teacher guides

Annotation

This series includes a program overview, an overall student text, separately available units, and supporting teacher guides. The individual units include *Ecosystems*, *Heat, Mixtures*, and *Earth's Crust*. The student text contains information from all these units plus an additional unit on structures which meets the requirements for Cluster 3: *Forces and Structures*, providing extensive coverage of the majority of specific learning outcomes for the Grade 7 science curriculum. The skills and attitudes necessary for scientific inquiry and the design process are developed through active investigations, problem solving, data management, and presentation. Suggestions for assessment and ongoing evaluation, along with differentiated teaching strategies, are included in the teacher's guides. Each of the individual units and the overall student text include a toolbox containing safety tips and references to Cluster 0: *Overall Skill and Attitudes*. Toolbox references are not integrated into the unit. The program philosophy is discussed in the program overview.

Cautions

The majority of learning experiences are teacher-directed.

Addison Wesley Science & Technology Program Overview: Grades 7-8

The *Addison Wesley Science & Technology Program Overview: Grades 7-8* contains sections on the scope and sequence of the program: using the student book and teacher's guide; fostering scientific knowledge; developing students' skills; science and technology connections with the outside world; attitudes in science; managing your science and technology program; assessment and evaluation issues; and, incorporating language and literacy into a science program. A bibliography of non-print resources and six blackline masters complete the program overview.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

- 64 pages, softcover

Copyright ISBN/Order # Title

2000 0-201-70645-8 Addison Wesley Science & Technology Program Overview: Grades 7-8

Addison Wesley Science & Technology 7 (Student Text)

The text provides extensive coverage of the majority of thematic specific learning outcomes for Clusters 1-4: *Interactions Within Ecosystems*, *Particle Theory of Matter*, *Forces and Structure*, and *Earth's Crust*. The text includes opportunities for students to develop scientific literacy through differentiated instruction, active and authentic investigations, and enrichment challenges. The readability and extensive use of graphics, images, and colour makes this resource accessible to a wide range of students. At the end of each chapter, students are encouraged to apply their science knowledge in design projects and discussions. They are also encouraged to monitor and evaluate their progress through self-assessment activities. The toolbox addresses specific learning outcomes for Cluster 0: *Overall Skills and Attitudes*. An index and glossary are included.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

- 444 pages, hardcover

Copyright ISBN/Order # Title

1999 0-201-61394-8 Addison Wesley Science & Technology 7 (Student Text)

Addison Wesley Science & Technology 7

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Chan, Cecelia, ed.

Intended User(s) Student, Teacher

Ecosystems (Student Text)



Ecosystems addresses the majority of specific learning outcomes for Cluster 1: *Interactions Within Ecosystems*. It contains accompanying colour illustrations, graphic organizers, and chapter headings to guide students. The limited vocabulary and amount of text per page makes this resource suited to a wide range of students. The content is relevant to the Canadian context, and the representations of students are ethnically diverse and culturally sensitive. The toolbox addresses specific learning outcomes for Cluster 0: *Overall Skills and Attitudes*. There is no index.

Comments

Specific learning outcomes dealing with microscopes, bioaccumulation, and ecological pyramids are not addressed.

Physical Characteristics

• 111 pages, softcover

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

2000 0-201-66453-4 Ecosystems (Student Text)

Ecosystems (Teacher's Guide)



The teacher's guide is an essential companion to the student text to address the majority of specific learning outcomes. The guide provides a variety of assessment tools and strategies for differentiated instruction, with emphasis on assisting students who are struggling with concepts. Design features include clear, concise presentation and cross-referencing to the student text at the top of each page. There are suggestions to differentiate instruction for a wide range of student competencies including ESL students. There is no index.

Comments

There are no references to guide the use of the student toolbox in skill development.

Cautions

Teachers should preview web sites prior to use with students.

Physical Characteristics

• 95 pages, softcover

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

2000 0-201-66458-5 Ecosystems (Teacher's Guide)

Heat (Student Text)



Heat provides extensive coverage of specific learning outcomes from Cluster 2: *Particle Theory of Matter* that deal specifically with heat. Teachers must utilize the unit on *Mixtures* for complete coverage of the specific learning outcomes in Cluster 2. The text includes graphic organizers, coloured illustrations, photographs, and side-bar background information. The readability level, activities, and assignments make the resource accessible to a wide range of learning styles and abilities. The toolbox addresses specific learning outcomes for Cluster 0: *Overall Skills and Attitudes*. There is no index.

Physical Characteristics

• 101 pages, softcover

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

2000 0-201-66455-0 Heat (Student Text)

Addison Wesley Science & Technology 7

Grade Level(s)

- K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Chan, Cecelia, ed.

Intended User(s) Student, Teacher

Heat (Teacher's Guide)



The teacher's guide is an essential companion to the student text to address the majority of specific learning outcomes. It provides ongoing suggestions for teaching strategies, supplemental resource supports, hands-on investigations, and assessment. There are suggestions to differentiate instruction for a wide range of student competencies, including ESL students. There is no index.

Comments

This resource refers only to specific learning outcomes related to heat in Cluster 2: *Particle Theory of Matter* and would need to be supplemented by the teacher's guide on *Mixtures* for complete coverage of Cluster 2. There are no references to guide the use of the student toolbox in skill development.

Physical Characteristics

- 94 pages, softcover

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

2000 0-201-66460-7 Heat (Teacher's Guide)

Mixtures (Student Text)



Mixtures provides extensive coverage of the specific learning outcomes from Cluster 2: *Particle Theory of Matter* that deal specifically with mixtures. Teachers must utilize the unit on *Heat* for complete coverage of all specific learning outcomes in Cluster 2. The student text is accompanied by graphic organizers, coloured illustrations, photographs, and side-bar background information. The readability level, activities, and assignments make the resource accessible to a wide range of learning styles and abilities. The toolbox addresses specific learning outcomes for Cluster 0: *Overall Skills and Attitudes*. There is no index.

Physical Characteristics

- 108 pages, softcover

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

2000 0-201-66454-2 Mixtures (Student Text)

Mixtures (Teacher's Guide)



The teacher's guide is an essential companion to the student text to address the majority of specific learning outcomes. It provides ongoing suggestions for teaching strategies, supplemental resource supports, hands-on investigations and assessment tools. There are suggestions to differentiate instruction for a wide range of student competencies, including ESL students. There is no index.

Comments

This resource only refers to the specific learning outcomes related to mixtures in Cluster 2: *Particle Theory of Matter* and would need to be supplemented by the teacher's guide on *Heat* for complete coverage of Cluster 2. There are no references to guide the use of the student toolbox in skill development.

Physical Characteristics

- 103 pages, softcover

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

2000 0-201-66459-3 Mixtures (Teacher's Guide)

Addison Wesley Science & Technology 7

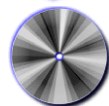
Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Chan, Cecelia, ed.

Intended User(s) Student, Teacher

The Earth's Crust (Student Text)



The Earth's Crust addresses the majority of specific learning outcomes for Cluster 4: *Earth's Crust*. The instructional design supports curricular outcomes using suggestions for differentiated instruction, ongoing assessment, and enrichment activities. The toolbox addresses specific learning outcomes for Cluster 0: *Overall Skills and Attitudes*. There are some references to geological resources in Manitoba. There is no index.

Comments

The specific learning outcomes for fossil fuels and geothermal energy are not addressed.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 108 pages, CAV videodisk, softcover

Copyright ISBN/Order # Title

2000 0-201-66457-7 The Earth's Crust (Student Text)

The Earth's Crust (Teacher's Guide)



The teacher's guide is an essential companion to the student text to address the majority of specific learning outcomes. It is clear, concise, and cross-referenced to the student text. Suggestions for enrichment, assessment, and ESL students are easily identified throughout the book. There are numerous suggestions for other related resources (e.g. web site addresses). There are also suggestions to differentiate instruction for a wide range of student competencies. There is no index.

Comments

There are no references to guide to use of the student toolbox in skill development.

Cautions

Teachers should preview web sites prior to use with students.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 87 pages, softcover

Copyright ISBN/Order # Title

2000 0-201-66462-3 The Earth's Crust (Teacher's Guide)

LEARNING AND TEACHING RESOURCES

Addison Wesley Science & Technology 8

Grade Level(s)
 K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Chan, Cecilia, ed.

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Depth • Teacher Reference 	<ul style="list-style-type: none"> • Series • Student Textbook • Teacher Guide

Publisher/Producer Pearson Education Canada
Distributor/Supplier Pearson Education Canada 26 Prince Andrew Place Don Mills, ON M3C 2T8
Telephone (416) 447-5101, ext. 3373 Toll Free (800) 563-9196 Fax (416) 447-2551 Internet www.pearsoned.ca

Range of Classroom Use

<ul style="list-style-type: none"> • General • ESL- teacher's guide includes suggested learning experiences

Annotation

Addison Wesley Science & Technology 8 resources recommended for use in Manitoba comprise a program overview, one student text entitled *Optics*, and the accompanying teacher's guide. These resources correspond with Cluster 2: *Optics*. The format is easy to read and well illustrated. Scientific skills and attitudes are addressed through a toolbox containing safety tips and references to Cluster 0: *Overall Skills and Attitudes*. The teacher's guide supports the student text with assessment and enrichment activities. The program philosophy is discussed in the program overview. There is no index.

Comments

The majority of learning experiences are teacher-directed.

Addison Wesley Science & Technology Program Overview: Grades 7-8


The *Addison Wesley Science & Technology Program Overview: Grades 7-8* contains sections on the scope and sequence of the program; using the student book and teacher's guide; fostering scientific knowledge; developing students' skills; science and technology connections with the outside world; attitudes in science; managing your science and technology program; assessment and evaluation issues; and, incorporating language and literacy into a science program. A bibliography of non-print resources and six blackline masters complete the program overview.

Physical Characteristics Grade 5 6 7 8 S1 Cluster 0 1 2 3 4
 • 64 pages, softcover

Copyright	ISBN/Order #	Title
2000	0-201-70645-8	Addison Wesley Science & Technology Program Overview: Grades 7-8

Optics (Student Text)


This resource addresses specific learning outcomes for Cluster 2: *Optics*. The format is easy to read and attractive to students, especially struggling learners. There is a good balance of graphics and print. The use of colour, cartoons, diagrams, and photographs enhances the science content. The toolbox includes ten sections that address the design process, technology, written reports, measurement, and visual tools. These are not embedded in the thematic student activities.

Comments

Background information on science concepts is not provided.

Physical Characteristics Grade 5 6 7 8 S1 Cluster 0 1 2 3 4
 • 113 pages, softcover

Copyright	ISBN/Order #	Title
2000	0-201-65463-6	Optics (Student Text)

LEARNING AND TEACHING RESOURCES

Addison Wesley Science & Technology 8

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Chan, Cecilia, ed.

Intended User(s) Student, Teacher

Optics (Teacher's Guide)



The teacher's guide supports the student text with learning experiences for enrichment and assessment, and allows for a variety of learning styles. It provides opportunities for design challenges and skill development not present in the student text.

Comments

The scientific information needs supplementing in some areas.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 111 pages, softcover

Copyright ISBN/Order # Title

2000	0-201-65468-7	Optics (Teacher's Guide)
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LEARNING AND TEACHING RESOURCES

Nelson Science 9

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Bloch, Marietta Mars, Program Consultant

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Breadth & Depth • Teacher Reference 	<ul style="list-style-type: none"> • Series • Student Textbook • Teacher Guide • Transparencies

Publisher/Producer	
Nelson Thomson Learning	
Distributor/Supplier	
Nelson Thomson Learning 1120 Birchmount Road Scarborough, ON M1K 5G4	
Telephone	(416) 752-9100
Toll Free	(800) 268-2222
Fax	416-752-9812
Internet	www.nelson.com

Range of Classroom Use

<ul style="list-style-type: none"> • General

Annotation

Nelson Science 9 includes a student text, a teacher's resource binder, and a transparencies package that address the majority of specific learning outcomes for all clusters of the Senior 1 science curriculum. The resource contains well-organized units that support strong skills development. The teacher resource includes lesson plans, assessment strategies, and blackline masters. The transparencies package contains replicated images from the student text.

Nelson Science 9 (Student Text)



The student text provides comprehensive coverage of Clusters 1-4: *Reproduction, Atoms and Elements, Nature of Electricity*, and *Exploring of the Universe*. Each Manitoba thematic science cluster has a corresponding unit in the text. A skills handbook segment is provided at the end of the text. Opportunities for Cluster 0: *Overall Skills and Attitudes* are presented. The text is well organized, contains an index and a glossary, and references to the skills handbook within each chapter. Colour photographs, diagrams, headings, and graphic organizers enhance the science content. Each chapter contains a science, technology, society and the environment (STSE) issue that supports the thematic cluster and Cluster 0: *Overall Skills and Attitudes* outcomes. At the end of each chapter there is a review that summarizes key expectations and terms and provides questions for students to demonstrate understanding, apply skills, and make connections. Career profiles, many of which are Canadian, are presented throughout.

Physical Characteristics Grade 5 6 7 8 S1 Cluster 0 1 2 3 4
 • 591 pages, hardcover

Copyright	ISBN/Order #	Title
1999	0-17-612032-7	Nelson Science 9 (Student Text)

Nelson Science 9 Teacher's Resource



The teacher's resource binder supports the implementation of Senior 1 science Clusters 1-4. The resource is divided into 11 sections and includes lesson plans, instructional strategies, activities for differentiated instruction, worksheets, and answers to review questions. It contains blackline masters that support each unit with reproducible charts, safety symbols, concept maps, activities, and quizzes. It also contains an insert of a correlation to the Manitoba science curriculum.

Physical Characteristics Grade 5 6 7 8 S1 Cluster 0 1 2 3 4
 • Binder with 11 sections, paginated separately

Copyright	ISBN/Order #	Title
2000	0-17-612062-9	Nelson Science 9 Teacher's Resource

LEARNING AND TEACHING RESOURCES

Nelson Science 9

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Bloch, Marietta Mars, Program Consultant

Intended User(s) Student, Teacher

Nelson Science 9 (Transparencies)

The 80 colour transparencies replicate materials from the student text.

Physical Characteristics

• 80 transparencies

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

1999 0-17-612045-9 Nelson Science 9 (Transparencies)

LEARNING AND TEACHING RESOURCES

Nelson Science & Technology 7

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Bloch, Marietta Mars, Program Consultant

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Breadth & Depth • Teacher Reference 	<ul style="list-style-type: none"> • Series • Student Textbook • Teacher Guide • Transparencies

<p>Publisher/Producer Nelson Thomson Learning</p> <p>Distributor/Supplier Nelson Thomson Learning 1120 Birchmount Road Scarborough, ON M1K 5G4</p> <p>Telephone (416) 752-9100 Toll Free (800) 268-2222 Fax 416-752-9812 Internet www.nelson.com</p>

Range of Classroom Use
<ul style="list-style-type: none"> • General

Annotation

This series includes an overall student text, five separately available student units, five corresponding teacher guides, five transparency packages, and a skills handbook. The overall student text comprises all of the material available in the separate student units and the skills handbook. The series provides complete and comprehensive coverage of the specific learning outcomes for all clusters in the Grade 7 science curriculum. Material for students is presented with graphic organizers, extension learning experiences, colour illustrations, and sidebar challenges to facilitate student connections, explorations, and reflections. The student text and separate units include references to the skills handbook. This is available separately and is also contained in the back of the student text. The skills handbook supports the achievement of Cluster 0: *Overall Skills and Attitudes*. The teacher's resource includes suggestions for assessment and ESL instruction, enrichment activities, and cross-curricular and cross-cluster connections. Blackline masters that can be used to help achieve the cluster outcomes are included, as well as a correlation chart to the Manitoba science curriculum.

Nelson Science & Technology 7 (Student Text)



Nelson Science & Technology 7 provides complete and comprehensive coverage of specific learning outcomes for Clusters 1-4: *Interactions Within Ecosystems*, *Particle Theory of Matter*, *Forces and Structures*, and *Earth's Crust*. It comprises five units and a skills handbook. Each chapter makes use of graphic organizers, extension activities, colour illustrations, sidebar challenges to make connections, explorations, and reflections upon learning. References to the skills handbook facilitate skill development. An ongoing design challenge is built upon throughout the unit. A glossary and an index are included.

Physical Characteristics Grade 5 6 7 8 S1 Cluster 0 1 2 3 4
 • 416 pages, hardcover

Copyright	ISBN/Order #	Title
2000	0-17-607495-3	Nelson Science & Technology 7 (Student Text)

Nelson Science & Technology Skills Handbook



Nelson Science & Technology Skills Handbook is intended for use in Grades 7 and 8 (the content of the handbook is identical in both grades, and identical to that in the overall student text). The handbook supports the achievement of Cluster 0: *Overall Skills and Attitudes*. It includes material on research skills, data collection, measurement and presentation, communication, and study skills. It provides examples of vocabulary and procedures such as writing reports, constructing graphs, reaching a conclusion, predicting and hypothesizing, and testing and evaluating a prototype. This resource is a necessary component for completing the specific learning outcomes related to Cluster 0.

Physical Characteristics Grade 5 6 7 8 S1 Cluster 0 1 2 3 4
 • 95 pages, softcover

Copyright	ISBN/Order #	Title
1999	0-17-612020-3	Nelson Science & Technology Skills Handbook

Nelson Science & Technology 7

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Bloch, Marietta Mars, Program Consultant

Intended User(s) Student, Teacher

Unit 2: Heat (Teacher's Resource)



The teacher's resource is necessary to provide coverage of specific learning outcomes relating to pure substances and mixtures in Cluster 2: *Particle Theory of Matter*. It includes background science information, suggestions for assessment, suggestions for ESL instruction, enrichment activities, and cross-curricular and cross-cluster connections. The resource binder includes blackline masters that can be used to help achieve the cluster outcomes, as well as a correlation chart to the Manitoba science curriculum.

Comments

To achieve complete coverage of Cluster 2, this resource must be combined with the *Pure Substances and Mixtures* unit.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 204 pages, binder

Copyright ISBN/Order # Title

2000 0-17-612012-2 Unit 2: Heat (Teacher's Resource)

Unit 2: Heat (Transparencies)



Eight colour transparencies are included that replicate specific pages from the student resource. The transparencies include material on changes of state, heat and water cycle, hot-water heating system, and the greenhouse effect.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 8 transparencies, hole-punched

Copyright ISBN/Order # Title

1999 0-17-612035-1 Unit 2: Heat (Transparencies)

Unit 3: Structural Strength and Stability (Student Text)



Structural Strength and Stability provides comprehensive coverage of specific learning outcomes for Cluster 3: *Forces and Structures*. This resource is accessible to a wide range of student abilities. It includes an ongoing design challenge that is built upon throughout the unit, and references to the skills handbook to facilitate skill development.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 64 pages, softcover

Copyright ISBN/Order # Title

1999 0-17-612003-3 Unit 3: Structural Strength and Stability (Student Text)

Unit 3: Structural Strength and Stability (Teacher's Resource)



The teacher's resource is necessary to provide complete coverage of Cluster 3: *Forces and Structures*. It includes background science information, suggestions for assessment, suggestions for ESL instruction, enrichment activities, and cross-curricular and cross-cluster connections. The resource binder includes blackline masters that can be used to help achieve the cluster objectives, as well as a correlation chart to the Manitoba science curriculum.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 198 pages, binder

Copyright ISBN/Order # Title

2000 0-17-612013-0 Unit 3: Structural Strength and Stability (Teacher's Resource)

Nelson Science & Technology 7

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Bloch, Marietta Mars, Program Consultant

Intended User(s) Student, Teacher

Unit 3: Structural Strength and Stability (Transparencies)



Eight colour transparencies are included that replicate pages from the student resource such as application of force, tension, compression, torsion, shear, and structural failures.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 8 transparencies, hole-punched

Copyright ISBN/Order # Title

1999 0-17-612036-X Unit 3: Structural Strength and Stability (Transparencies)

Unit 4: The Earth's Crust (Student Text)



The Earth's Crust provides comprehensive coverage of specific learning outcomes for Cluster 4: *Earth's Crust*. This resource is easily accessible to a wide range of student abilities. It includes an ongoing design challenge that is built upon throughout the unit, and references to the skills handbook to facilitate skill development.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 64 pages, softcover

Copyright ISBN/Order # Title

1999 0-17-612004-1 Unit 4: The Earth's Crust (Student Text)

Unit 4: The Earth's Crust (Teacher's Resource)



The teacher's resource is necessary to provide complete coverage of Cluster 4: *Earth's Crust*. It includes suggestions for assessment, suggestions for ESL instruction, enrichment activities, and cross-curricular and cross-cluster connections. The resource includes blackline masters that can be used to help achieve the cluster objectives, as well as a correlation chart to the Manitoba science curriculum.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 208 pages, binder

Copyright ISBN/Order # Title

2000 0-17-612014-9 Unit 4: The Earth's Crust (Teacher's Resource)

Unit 4: The Earth's Crust (Transparencies)



Eight colour transparencies are included that replicate pages from the student resource such as mechanical and biological weathering, moving plates, and volcanoes.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 8 transparencies, hole-punched

Copyright ISBN/Order # Title

1999 0-17-612037-8 Unit 4: The Earth's Crust (Transparencies)

Unit 5: Interactions Within Ecosystems (Student Text)



Interactions Within Ecosystems provides comprehensive coverage of specific learning outcomes for Cluster 1: *Interactions Within Ecosystems*, with the exception of use and care of a microscope. This is addressed in the skills handbook. This resource is easily accessible for a wide range of student abilities. It includes an ongoing design challenge that is built upon throughout the unit, and references to the skills handbook to facilitate skill development.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 64 pages, softcover

Copyright ISBN/Order # Title

1999 0-17-612000-9 Unit 5: Interactions Within Ecosystems (Student Text)

LEARNING AND TEACHING RESOURCES

Nelson Science & Technology 7

Grade Level(s)
 K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Bloch, Marietta Mars, Program Consultant

Intended User(s) Student, Teacher

Unit 5: Interactions Within Ecosystems (Teacher's Resource)



The teacher's resource is necessary to provide complete coverage of Cluster 1: *Interactions Within Ecosystems*. It includes suggestions for assessment, suggestions for ESL instruction, enrichment activities, and cross-curricular and cross-cluster connections. The resource binder includes blackline masters that can be used to help achieve the cluster objectives, as well as a correlation chart to the Manitoba science curriculum.

Physical Characteristics

• 188 pages, binder

 Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright	ISBN/Order #	Title
2000	0-17-612010-6	Unit 5: Interactions Within Ecosystems (Teacher's Resource)

Unit 5: Interactions Within Ecosystems (Transparencies)



Eight colour transparencies are included that replicate pages from the student resource, including the ecological pyramid, the water cycle, poisons in the food chain, and secondary successions.

Physical Characteristics

• 8 transparencies, hole-punched

 Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright	ISBN/Order #	Title
1999	0-17-612033-5	Unit 5: Interactions Within Ecosystems (Transparencies)

LEARNING AND TEACHING RESOURCES

Nelson Science & Technology 8

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Bloch, Marietta Mars, Program Consultant

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Breadth & Depth • Teacher Reference 	<ul style="list-style-type: none"> • Series • Student Textbook • Teacher Guide • Transparencies

<p>Publisher/Producer Nelson Thomson Learning</p> <p>Distributor/Supplier Nelson Thomson Learning 1120 Birchmount Road Scarborough, ON M1K 5G4</p> <p>Telephone (416) 752-9100 Toll Free (800) 268-2222 Fax 416-752-9812 Internet www.nelson.com</p>

Range of Classroom Use

<ul style="list-style-type: none"> • General

Annotation

This series includes an overall student text, four separately available student units, four corresponding teacher guides, four transparency packages, and a skills handbook. The series provides complete and comprehensive coverage of the majority of specific learning outcomes for all clusters of the Grade 8 science curriculum. Although the overall student text includes five units, only four of these correspond with the specific learning outcomes for Grade 8 science in Manitoba. The student materials are presented with graphic organizers, extension activities, colour illustrations, and design challenges that strengthen scientific skills and attitudes. The student text and separate student units reference the skills handbook. This is available separately and is also contained in the back of the student text. The skills handbook reinforces the processes of design, scientific inquiry, research, and communication. The teacher's resources include suggestions for assessment, ESL instructional strategies, enrichment experiences, differentiated instruction, and cross-curricular connections. Blackline masters that can be used to help achieve the cluster outcomes are included, as well as a correlation chart to the Manitoba science curriculum.

Nelson Science & Technology 8 (Student Text)



Nelson Science & Technology 8 provides complete and comprehensive coverage of specific learning outcomes for Cluster 1-4: *Cells and Systems, Optics, Fluids, and Water Systems*. The student text is compilation of all four units in the series and the skills handbook. The unit on "Mechanical Advantage and Efficiency" is not part of the Manitoba science curriculum at this grade. It includes a glossary and an index.

Physical Characteristics Grade 5 6 7 8 S1 Cluster 0 1 2 3 4
 • 429 pages, hardcover

Copyright	ISBN/Order #	Title
1999	0-17-607497-4	Nelson Science & Technology 8 (Student Text)

Nelson Science & Technology Skills Handbook



Nelson Science & Technology Skills Handbook is intended for use in Grades 7 and 8 (the content of the handbook is identical in both grades, and identical to that in the overall student text). The handbook supports the achievement of Cluster 0: *Overall Skills and Attitudes*. It includes material on research skills, data collection, measurement and presentation, communication, and study skills. It provides examples of vocabulary and procedures such as writing reports, constructing graphs, reaching a conclusion, predicting and hypothesizing, and testing and evaluating a prototype. This resource is a necessary component for completing the specific learning outcomes related to Cluster 0.

Physical Characteristics Grade 5 6 7 8 S1 Cluster 0 1 2 3 4
 • 95 pages, softcover

Copyright	ISBN/Order #	Title
1999	0-17-612020-3	Nelson Science & Technology Skills Handbook

LEARNING AND TEACHING RESOURCES

Nelson Science & Technology 8

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Bloch, Marietta Mars, Program Consultant

Intended User(s) Student, Teacher

Unit 1: Cells, Tissues, Organs, and Systems (Student Text)



Cells, Tissues, Organs, and Systems addresses the majority of outcomes for Cluster 1: *Cells and Systems*. The format is easy to read and attractive. This resource includes references to the skills handbook to facilitate skills development.

Comments

The *Cell* unit must be supplemented to achieve curricular outcomes.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 76 pages, softcover

Copyright	ISBN/Order #	Title
1999	0-17-612005-X	Unit 1: Cells, Tissues, Organs, and Systems (Student Text)

Unit 1: Cells, Tissues, Organs, and Systems (Teacher's Resource)



This teacher's resource supports student learning for Cluster 1: *Cells and Systems*. It includes science background information and is correlated with the student unit. Suggestions for technology integration, cross-curricular connections, differentiated instruction, assessment, and blackline masters are included, as well as a correlation chart to the Manitoba science curriculum.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 211 pages, binder

Copyright	ISBN/Order #	Title
1999	0-17-612015-7	Unit 1: Cells, Tissues, Organs, and Systems (Teacher's Resource)

Unit 1: Cells, Tissues, Organs and Systems (Transparencies)



Eight colour transparencies are included that replicate student text diagrams and include cells structure, specialized cells, and organ systems.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 8 transparencies, hole-punched

Copyright	ISBN/Order #	Title
1999	0-17-612039-4	Unit 1: Cells, Tissues, Organs and Systems (Transparencies)

Unit 2: Fluids (Student Text)



Fluids addresses the curriculum outcomes for Cluster 3: *Fluids*. A large percentage of Cluster 0: *Overall Skills and Attitudes* are also addressed through the thematic content on fluids. Student investigation and design challenges allow for student-initiated discovery. It includes references to the skills handbook to facilitate skills development.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 64 pages, softcover

Copyright	ISBN/Order #	Title
1999	0-17-612006-8	Unit 2: Fluids

Unit 2: Fluids (Teacher's Resource)



This teacher's resource supports student learning for Cluster 3: *Fluids*. It includes science background information and is correlated with the student unit. Suggestions for technology integration, cross-curricular connections, differentiated instruction, assessment, and blackline masters are included, as well as a correlation chart to the Manitoba science curriculum.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 215 pages, binder

Copyright	ISBN/Order #	Title
1999	0-17-612016-5	Unit 2: Fluids (Teacher's Resource)

Nelson Science & Technology 8

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Bloch, Marietta Mars, Program Consultant

Intended User(s) Student, Teacher

Unit 2: Fluids (Transparencies)



Eight colour transparencies are included that replicate student text diagrams including densities of common substance, and comparing and measuring densities.

Physical Characteristics

• 8 transparencies, hole-punched

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

1999 0-17-612040-8 Unit 2: Fluids (Transparencies)

Unit 4: Water Systems (Student Text)



Water Systems addresses the curriculum outcomes for Cluster 4: *Water Systems*. Lesson plans include student investigations, design challenges, and student-initiated discovery. The resource uses appropriate vocabulary and balances graphics and print. It includes references to the skills handbook to facilitate skills development.

Physical Characteristics

• 64 pages, softcover

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

1999 0-17-612009-2 Unit 4: Water Systems

Unit 4: Water Systems (Teacher's Resource)



This teacher's resource supports student learning for Cluster 4: *Water Systems*. It includes science background information and is correlated with the student unit. Suggestions for cross-curricular connections, differentiated instruction, assessment, and blackline masters are included, as well as a correlation chart to the Manitoba science curriculum.

Physical Characteristics

• 222 pages, binder

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

1999 0-17-612019-X Unit 4: Water Systems (Teacher's Resource)

Unit 4: Water Systems (Transparencies)



Eight colour transparencies are included that replicate student text diagrams including the water cycle and water treatment processes.

Physical Characteristics

• 8 transparencies, hole-punched

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

1999 0-17-612043-2 Unit 4: Water Systems (Transparencies)

Unit 5: Optics (Student Text)



Optics addresses the curriculum outcomes for Cluster 2: *Optics*. The design challenges students to apply their scientific skills and attitudes. The resource is appropriate in terms of readability, graphics, and interest. It includes references to the skills handbook to facilitate skills development.

Physical Characteristics

• 64 pages, softcover

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

1999 0-17-612007-6 Unit 5: Optics

LEARNING AND TEACHING RESOURCES

Nelson Science & Technology 8

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Bloch, Marietta Mars, Program Consultant

Intended User(s) Student, Teacher

Unit 5: Optics (Teacher's Resource)



This teacher's resource supports student learning for Cluster 2: *Optics*. It provides cross-curricular connections, examples of differentiating instruction, and a wide variety of assessment strategies, and correlates to the student text. It also includes a correlation chart to the Manitoba science curriculum.

Physical Characteristics

• 192 pages, binder

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

1999 0-17-612082-3 Unit 5: Optics (Teacher's Resource)

Unit 5: Optics (Transparencies)



Eight colour transparencies are included that replicate student text diagrams including the human eye, light, lenses, and mirrors.

Physical Characteristics

• 8 transparencies, hole-punched

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

1999 0-17-612041-6 Unit 5: Optics (Transparencies)

LEARNING AND TEACHING RESOURCES

Pan Canadian Science Place 5

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Graham, Wendy, ed.

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Depth • Teacher Reference 	<ul style="list-style-type: none"> • Series • Student Textbook • Teacher Guide

<p>Publisher/Producer Scholastic Canada Ltd.</p> <p>Distributor/Supplier Scholastic Canada Ltd. 175 Hillmount Road Markham, ON L6C 1Z7</p> <p>Telephone (905) 887-7323 ext. 393 Toll Free (800) 268-3848 Fax (905) 887-3642 Internet www.education.scholastic.ca</p>

Range of Classroom Use

<ul style="list-style-type: none"> • General • Gifted Learner- suggestions for extension are included • ESL- suggestions for extension are included
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Annotation

Pan Canadian Science Place 5 resources recommended for use in Manitoba include two student texts entitled *Body Works* and *Weatherwise*, and the accompanying teacher's guides that are correlated to Manitoba's science curriculum.

Body Works (Student Text)



Body Works includes 15 lessons organized on the basis of activating, exploring/investigating, and applying. It addresses specific learning outcomes for Cluster 1: *Maintaining a Healthy Body*. The text is visually appealing. It includes photographs, diagrams, and a glossary. Scientific inquiry and design process skills and attitudes are addressed. There is no index.

Comments

The resource includes some concepts that are not part of the Grade 5 science curriculum, such as cell metabolism.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 64 pages, softcover

Copyright	ISBN/Order #	Title
2000	0-7791-0065-4	Body Works (Student Text)

Body Works (Teacher's Guide - Manitoba Edition)



The teacher's guide is organized into lessons that correspond with the student text and are cross-referenced to the Manitoba science curriculum. Lesson organization includes information on preparing, investigating, and applying. Background information related to science concepts is provided. A section on common student misconceptions is included at the beginning of each lesson. Links to other subject areas are made as well as suggestions to extend student learning. There are blackline masters that include suggestions for instruction and assessment, design process performance rubrics, graphic organizers, and differentiated learning strategies. An overall correlation chart summarizing which specific learning outcomes are addressed by each lesson is included. There is no index.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

• 119 pages, hole-punched

Copyright	ISBN/Order #	Title
2000	0-7791-0052-2	Body Works (Teacher's Guide - Manitoba Edition)

Pan Canadian Science Place 5

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Graham, Wendy, ed.

Intended User(s) Student, Teacher

Weatherwise (Student Text)



Weatherwise includes 11 lessons organized on the basis of activating, exploring/investigating, and applying. It addresses specific learning outcomes for Cluster 4: *Weather*. Scientific inquiry and design process skills and attitudes are addressed. The resource includes photographs, diagrams, and a glossary. The visuals are engaging. Diverse ethnic backgrounds are portrayed. There is no index.

Comments

The resource includes material on the atmosphere that is not a part of Manitoba's Grade 5 science curriculum.

Physical Characteristics

• 48 pages, softcover

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

2000 0-7791-0069-7 *Weatherwise* (Student Text)

Weatherwise (Teacher's Guide - Manitoba Edition)



The teacher's guide is organized into lessons that correspond with the student text and are cross-referenced to the Manitoba science curriculum. Lesson organization includes information on preparing, investigating, and applying. Background information related to science concepts is provided. A section on common student misconceptions is included at the beginning of each lesson. There are blackline masters that include suggestions for instruction and assessment, design process performance rubrics, graphic organizers, and differentiated learning strategies. An overall correlation chart summarizing which specific learning outcomes are addressed by each lesson is included. There is no index.

Physical Characteristics

• 88 pages, hole-punched

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

2000 0-7791-0064-6 *Weatherwise* (Teacher's Guide - Manitoba Edition)

LEARNING AND TEACHING RESOURCES

Pan Canadian Science Place 6

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Graham, Wendy, ed.

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Depth • Teacher Reference 	<ul style="list-style-type: none"> • Series • Student Textbook • Teacher Guide

<p>Publisher/Producer Scholastic Canada Ltd.</p> <p>Distributor/Supplier Scholastic Canada Ltd. 175 Hillmount Road Markham, ON L6C 1Z7</p> <p>Telephone (905) 887-7323 ext. 393 Toll Free (800) 268-3848 Fax (905) 887-3642 Internet www.education.scholastic.ca</p>

Range of Classroom Use

<ul style="list-style-type: none"> • General • Gifted Learner- suggestions for extension are included • ESL- suggestions for extension are included
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Annotation

Pan Canadian Science Place 6 resources recommended for use in Manitoba include a student text and a teacher's guide that is correlated to Manitoba's science curriculum. Together they address Grade 6 Cluster 1: *Diversity of Living Things* in a comprehensive manner.

Variety of Life (Student Text)



Variety of Life addresses specific learning outcomes for Cluster 1: *Diversity of Living Things*. It contains 15 lessons organized in a visually engaging manner. It includes many learning experiences and progresses through the outcomes in a logical way. A concluding design project effectively synthesizes the outcomes and reinforces student learning. This text addresses several topics extraneous to the Grade 6 science curriculum such as microorganisms, extended classifications, use of the microscope, and carbon 14 dating. There is no index.

Physical Characteristics

• 64 pages, softcover

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright	ISBN/Order #	Title
2000	0-7791-0085-9	Variety of Life (Student Text)

Variety of Life (Teacher's Guide - Manitoba Edition)



The teacher's guide provides background science information and supplementary learning experiences to enhance the material in the student text as well as cross references to the Manitoba science curriculum. A section on common student misconceptions is included at the beginning of each lesson. Links to English language arts, mathematics, and social studies are clearly identified along with suggestions to extend student learning. Blackline masters of student activities and assessment are included, as well as an overall correlation chart summarizing which specific learning outcomes are addressed by each lesson. There is no index.

Physical Characteristics

• 120 pages, hole-punched

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright	ISBN/Order #	Title
2000	0-7791-0072-7	Variety of Life (Teacher's Guide - Manitoba Edition)

LEARNING AND TEACHING RESOURCES

Sciencepower 7

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Various Authors

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Breadth & Depth • Teacher Reference 	<ul style="list-style-type: none"> • Series • Student Textbook • Teacher Guide • Transparencies

<p>Publisher/Producer McGraw-Hill Ryerson</p> <p>Distributor/Supplier McGraw-Hill Ryerson 300 Water Street Whitby, ON L1N 9B6</p> <p>Telephone (905) 430-5183 Toll Free Fax (905) 430-5194 Internet www.mcgrawhill.ca</p>
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Range of Classroom Use

<ul style="list-style-type: none"> • General

Annotation

Sciencepower 7 comprises a student text and a teacher's resource binder that addresses the majority of specific learning outcomes for Grade 7 science. At the end of each unit in the student text, students are encouraged to engage in research and discussions relevant to the material covered. The teacher's resource binder includes background science information, suggestions for instruction, strategies for supporting different student needs, cross-curricular links, colour transparencies drawn from the student text, and suggestions for assessment. Suggestions for learning are hands-on, diverse, and based on both the scientific inquiry and the design process models.

Sciencepower 7 (Student Text)



Sciencepower 7 is divided into units and supporting chapters that address Clusters 1-4: *Interactions Within Ecosystems*, *Particle Theory of Matter*, *Forces and Structures*, and *Earth's Crust*. The student text addresses the majority of specific learning outcomes in a comprehensive way with a variety of suggested learning experiences to promote active learning. Many of these are hands-on experiences. Graphic organizers, chapter headings, photographs, colour illustrations, and cartoon drawings enhance the text. The use of science journals to record and reflect on learning is encouraged. At the end of each unit students have the opportunity to analyze an issue, examine various perspectives, and present their findings. A science and technology skills guide appears at the end of the student text, and references are made to the guide within each unit. The challenging vocabulary and the manner in which content is addressed may not be suited to the range of student abilities within a grade. Each page contains extensive text blocks. Multicultural diversity is portrayed. An index and glossary are included.

Comments

The text contains some additional information not directly related to the Manitoba science curriculum.

Cautions

Web sites require previewing before use with students.

Physical Characteristics

• 517 pages, hardcover

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright	ISBN/Order #	Title
1999	0-07-560357-8	Sciencepower 7 (Student Text)

Sciencepower 7

Grade Level(s)

- K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Various Authors

Intended User(s) Student, Teacher

Sciencepower 7 Teacher's Resource Binder (Ontario Edition)



The *Teacher's Resource Binder* contains eight separate handbooks. Five of the handbooks correlate with the student text. The additional three serve as general support to teachers. They include an introduction and implementation handbook, a skills development handbook, and a handbook on assessment and evaluation. The assessment and evaluation handbook contains rubrics, student checklists, and ideas for portfolio assessment entries. The skills development handbook provides teaching support to the student text as well as general information on the scientific inquiry process, technological problem solving, and societal decision making. The resource binder effectively supports and extends the scientific knowledge presented in the student text. Fourteen colour transparencies replicate material illustrated in the student text.

Comments

The teacher's resource binder frequently references blackline masters. The majority of these are part of a separate package.

Physical Characteristics

- 8 handbooks, various pages, binder
- 14 colour transparencies

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

1999 0-07-560358-6 Sciencepower 7 Teacher's Resource Binder (Ontario Edition)

LEARNING AND TEACHING RESOURCES

Sciencepower 8

Grade Level(s)
 K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Various Authors

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Breadth & Depth • Teacher Reference 	<ul style="list-style-type: none"> • Series • Student Textbook • Teacher Guide • Transparencies

Publisher/Producer McGraw-Hill Ryerson
Distributor/Supplier McGraw-Hill Ryerson 300 Water Street Whitby, ON L1N 9B6
Telephone (905) 430-5183 Toll Free Fax (905) 430-5194 Internet www.mcgrawhill.ca

Range of Classroom Use
<ul style="list-style-type: none"> • General

Annotation

Sciencepower 8 comprises a student text and a teacher's resource binder that address specific learning outcomes for Grade 8 science. Cluster 0: *Overall Skills and Attitudes* is addressed through thematic learning experiences. The student text is well organized and illustrated. Although the student text contains five units, only four of these correspond with the specific learning outcomes for the Manitoba science curriculum. The teacher's resource binder effectively supports and extends the scientific knowledge presented in the student text, and includes background science information, suggestions for instruction, strategies for supporting different student needs, cross-curricular links, colour transparencies, and suggestions for assessment.

Sciencepower 8 (Student Text)


Sciencepower 8 is organized into units and supporting chapters that address Clusters 1-4: *Cell and Systems, Optics, Fluids, and Water Systems*. The text is well organized and illustrated with colour photographs, graphics, and diagrams. The sidebars provide for cross-curricular extensions to mathematics, technology, and English language arts. The use of science journals to record and reflect on learning is encouraged. At the end of each unit students have the opportunity to analyze an issue, examine various perspectives, and present their findings. Skills and attitudes are addressed through hands-on learning experiences provided in each thematic unit and at the back of the text. The section on "Mechanical Advantage and Efficiency" goes beyond the specific learning outcomes for Grade 8 science in Manitoba, however, it provides supplemental information on fluids and as learning experiences to support Cluster 0: *Overall Skills and Attitudes*. Multicultural diversity is portrayed. An index and glossary are included.

Comments

Material from the skills guide is not referenced within the units in the student text. The challenging vocabulary and the manner in which the content is addressed may not be suited to all learners.

Cautions

Web sites require previewing before use with students.

Physical Characteristics

- 580 pages, hardcover

 Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright	ISBN/Order #	Title
1999	0-07-560359-4	Sciencepower 8 (Student Text)

Sciencepower 8

Grade Level(s)

- K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Various Authors

Intended User(s) Student, Teacher

Sciencepower 8 Teacher's Resource Binder (Ontario Edition)



The *Teacher's Resource Binder* contains eight separate handbooks. Five of the handbooks correlate with the student text. The three additional handbooks include an introduction and implementation handbook, a skills development handbook, and a handbook on assessment and evaluation. The assessment and evaluation handbook contains general checklists, performance rubrics, and self-assessment suggestions appropriate for use in a variety of classroom applications. (The identical handbook is included in the *Teacher's Resource Binder* for both *Sciencepower 8* and *Sciencepower 9*.) The skills development handbook provides teaching support to the student text as well as general information on the scientific inquiry process, technological problem solving, and societal decision making. The resource binder supports and extends the scientific knowledge presented in the student text. Some strategies are included for adaptation and modification of learning experiences. The separate handbook that corresponds to the section on mechanical advantage and efficiency goes beyond the specific learning outcomes for Manitoba Grade 8 science. The information may be used to supplement the fluids cluster, however. Sixteen colour transparencies replicate material illustrated in the student text.

Cautions

Web sites require previewing before use with students.

Physical Characteristics

- 8 handbooks, various pages, binder
- 16 colour transparencies

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright ISBN/Order # Title

2000	0-07-560360-8	Sciencepower 8 Teacher's Resource Binder (Ontario Edition)
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LEARNING AND TEACHING RESOURCES

Sciencepower 9

Grade Level(s)
 K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Various Authors

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Breadth & Depth • Teacher Reference 	<ul style="list-style-type: none"> • Series • Student Textbook • Teacher Guide • Transparencies

Publisher/Producer McGraw-Hill Ryerson
Distributor/Supplier McGraw-Hill Ryerson 300 Water Street Whitby, ON L1N 9B6
Telephone (905) 430-5183 Toll Free Fax (905) 430-5194 Internet www.mcgrawhill.ca

Range of Classroom Use

<ul style="list-style-type: none"> • General

Annotation

Sciencepower 9 comprises a student text and teacher's resource binder that address the majority of specific learning outcomes for Senior 1 Science. The student text is clear and well-organized. The teacher's resource binder effectively supports and extends the scientific knowledge presented in the student text, and includes background scientific information, suggestions for instruction, colour transparencies, and suggestions for assessment.

Sciencepower 9 (Student Text)


Sciencepower 9 provides strong coverage for specific learning outcomes of Clusters 1-3: *Reproduction, Atoms and Elements*, and *Nature of Electricity*. It also addresses the majority of specific learning outcomes for Cluster 4: *Exploring the Universe*. The text is comprised of four units containing several chapters, a science skills guide, a glossary, and an index. The science skills guide includes learning strategies, graphic organizers, safety symbols, and use of a microscope. Each chapter includes a chapter at a glance, a chapter review, key concepts, skills and terms, a science log, starting point activities, and activities to extend student learning. Background scientific knowledge is extensive and supported by a series of student investigations. Students are encouraged to check, extend, and test their understanding through focussed questions. Illustrations, photographs, and labelled diagrams enhance the text. Skill and attitude development in the area of scientific inquiry is provided. Many investigations include extra challenges that provide opportunities for higher-level thinking.

Cautions

Web sites require previewing before use with students.

Physical Characteristics

 Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

- 628 pages, hardcover

Copyright	ISBN/Order #	Title
1999	0-07-560361-6	Sciencepower 9 (Student Text)

Sciencepower 9

Grade Level(s)

- K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Various Authors

Intended User(s) Student, Teacher

Sciencepower 9 Teacher's Resource Binder (Ontario Edition)



The *Teacher's Resource Binder* contains eight separate handbooks. These include an introduction and implementation handbook, an applied course handbook, a skills development handbook, and an assessment and evaluation handbook. The applied course handbook includes blackline masters for use with the student text. The assessment and evaluation handbook contains general checklists, performance rubrics, and self-assessment suggestions appropriate for use in a variety of classroom applications. (The identical handbook is included in the *Teacher's Resource Binder* for both *Sciencepower 8* and *Sciencepower 9*.) The skills handbook provides additional teaching support to the student text, as well as general information on the scientific inquiry process, technological problem solving, and societal decision making. The four remaining handbooks provide science-specific support and detailed instructional support correlated to the student text. This resource has a strong match to all Manitoba outcomes except Cluster 4: *Exploring the Universe*. Reproducible charts and tests for classroom use are provided with the resource binder. Sixteen colour transparencies that replicate diagrams from the student text are included.

Physical Characteristics

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

- 8 handbooks, paginated separately, binder
- 16 colour transparencies

Copyright ISBN/Order # Title

2000 0-07-560362-4 Sciencepower 9 Teacher's Resource Binder (Ontario Edition)

LEARNING AND TEACHING RESOURCES

By Design: Technology Exploration & Integration
Teachers Helping Teachers

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Czeneda, J.

Intended User(s) Teacher

<p>Resource Designation</p> <ul style="list-style-type: none"> • Teacher Reference 	<p>Type of Resource</p> <ul style="list-style-type: none"> • Teacher Content Reference • Blackline Master
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<p>Publisher/Producer Trifolium Books Inc.</p> <p>Distributor/Supplier Trifolium Books Inc. 250 Merton St. Suite 203 Toronto, ON M4S 1B1</p> <p>Telephone (416) 483-7211 Toll Free Fax (416) 483-3533 Internet www.pubcouncil.ca/trifolium</p>
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<p>Range of Classroom Use</p> <ul style="list-style-type: none"> • General
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Annotation

This teacher's resource is organized into four units, each of which contains several learning experiences for the development of design process skills and attitudes. The emphasis on the design process, which addresses Cluster 0: *Overall Skills and Attitudes* for Grades 6-8, is strengthened by cross-curricular connections to subject areas including math, English language arts, social studies, and art. Assessment strategies and blackline masters are included in the appendix, as well as supplemental resource listings. Safety tips are included as well as safety quizzes.

By Design: Technology Exploration & Integration



Physical Characteristics

• 164 pages, softcover

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright	ISBN/Order #	Title
1996	1-895579-78-3	By Design: Technology Exploration & Integration

LEARNING AND TEACHING RESOURCES

Design and Technology System
Active Learning Series

Grade Level(s)

- K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Moore, N.

Intended User(s) Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Teacher Reference 	<ul style="list-style-type: none"> • Teacher Content Reference • Blackline Master

<p>Publisher/Producer Exclusive Educational Products Ltd.</p> <p>Distributor/Supplier Exclusive Educational Products Ltd. 243 Saunders Road Barrie, ON L4N 9A3</p> <p>Telephone (705) 725-1166 Toll Free (800) 563-1166 Fax (705) 725-1167 Internet www.exclusiveeducational.ca</p>

Range of Classroom Use
<ul style="list-style-type: none"> • General

Annotation

This teacher's resource contains learning experiences that address the majority of specific learning outcomes for Cluster 0: *Overall Skills and Attitudes* for Grades 5 to Senior 1. The learning experiences integrate with a variety of thematic clusters, with an emphasis on the specific learning outcomes for Cluster 0. The first two sections provide information related to skills, materials, safety, and assessments, as well as guidelines for using tools. The following three sections provide information and learning experiences that address simple machines, power and energy, and challenges on a variety of topics. Emphasis is on involving students in the design process through problem-solving. The black and white diagrams effectively guide students in their constructions. The appendix includes blackline masters for students to record their work. Teachers may reproduce the student activity pages for classroom use. There is no index.

Design and Technology System



Physical Characteristics

- 130 pages, binder

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright	ISBN/Order #	Title
1997	0055	Design and Technology System

LEARNING AND TEACHING RESOURCES

Discover Flight

Active Learning Series

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Simpson, Ed

Intended User(s) Teacher

Resource Designation

- Teacher Reference

Type of Resource

- Teacher Content Reference
- Blackline Master

Publisher/Producer

Exclusive Educational Products Ltd.

Distributor/Supplier

Exclusive Educational Products Ltd.
243 Saunders Road
Barrie, ON L4N 9A3

Telephone (705) 725-1166

Toll Free (800) 563-1166

Fax (705) 725-1167

Internet www.exclusiveeducational.ca

Range of Classroom Use

- General

Annotation

This teacher's resource includes specific lessons and learning experiences to achieve the majority of specific learning outcomes for Grade 6 Cluster 2: *Flight*. It includes information on flight pioneers, blackline masters for group work, cross-curricular links to social studies and physical education, and a glossary of terms. Background information on concepts related to flight is included, as well as opportunities to address specific learning outcomes for Cluster 0: *Overall Skills and Attitudes*. Suggestions for assessment, graphic organizers, checklists for cooperative learning skills, and cross-curricular activity links are included. There is no index.

Comments

Some of the suggested learning experiences surrounding design process outcomes do not cover the higher-level skills and attitudes related to evaluation and synthesis. This resource needs to be supplemented to achieve specific learning outcomes related to the relationship of air to water, unbalanced forces, and the comparison of aircraft to spacecraft.

Discover Flight



Physical Characteristics

- 139 pages, binder

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright	ISBN/Order #	Title
1998	0007	Discover Flight

LEARNING AND TEACHING RESOURCES

Mathematics, Science, & Technology Connections
Teachers Helping Teachers

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Corney, B.

Intended User(s) Teacher

<p>Resource Designation</p> <ul style="list-style-type: none"> • Teacher Reference 	<p>Type of Resource</p> <ul style="list-style-type: none"> • Teacher Content Reference • Blackline Master
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<p>Publisher/Producer</p> <p>Trifolium Books Inc.</p> <p>Distributor/Supplier</p> <p>Trifolium Books Inc. 250 Merton St. Suite 203 Toronto, ON M4S 1B1</p> <p>Telephone (416) 483-7211</p> <p>Toll Free</p> <p>Fax (416) 483-3533</p> <p>Internet www.pubcouncil.ca/trifolium</p>
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<p>Range of Classroom Use</p> <ul style="list-style-type: none"> • General
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Annotation

This teacher's resource addresses specific learning outcomes for Cluster 0: *Overall Skills and Attitudes* for Grades 5-8. It contains extensive information to support the design process, including safety tips and technological notes. The suggested learning experiences are organized by theme. Blackline masters support the design process and assist students in planning their inquiries. There are cross-curricular links to math, English language arts, social studies, and art. Technological and supplemental resource lists are included. The book is clearly organized and easy to use.

Mathematics, Science, & Technology Connections



Physical Characteristics

• 148 pages, softcover

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright	ISBN/Order #	Title
1996	1-895579-37-6	Mathematics, Science, & Technology Connections

LEARNING AND TEACHING RESOURCES

Digital Field Trip to the Wetlands, The
The Digital Field Trip Series

Grade Level(s)

- K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Digital Frog International, Inc.

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Depth • Teacher Reference 	<ul style="list-style-type: none"> • Interactive Software/Multimedia • User's Manual • Teacher Guide

<p>Publisher/Producer Digital Frog</p> <p>Distributor/Supplier Digital Frog Trillium Place, 7377 Calfass Road Puslinch, ON N0B 2J0</p> <p>Telephone (519) 766-1097 Toll Free (800) 621-FROG (3764) Fax (519) 767-9994 Internet www.digitalfrog.com</p>

Range of Classroom Use
<ul style="list-style-type: none"> • General

Annotation

The Digital Field Trip to the Wetlands CD-ROM supports specific learning outcomes for Grade 6 Cluster 1: *Diversity of Living Things* and Grade 7 Cluster 1: *Interactions Within Ecosystems*. This interactive CD-ROM takes students on a virtual field trip to a Canadian wetland in Ontario's Algonquin Provincial Park. The software is easy to navigate by using the detailed, hyperlinked site map and help screens. The resource includes videos and slide shows of a variety of animals in their habitats. Animated clips are detailed and descriptive. Through exploration and discovery, students learn about the importance of wetlands in the environment, threats to their survival, and ideas for their survival and safety. Students may explore science information about interactions within ecosystems and check their knowledge through quizzes and games. There are opportunities for discussing open-ended questions before the answers are given. Student explorations within this software may provide knowledge that can be extended through field trips. The accompanying print material contains teacher notes, a field guide, blackline masters, answer keys, and a study guide. The blackline masters provide a practical tutorial to guide students through the information and activities. The tutorial has general applications and may be used as part of a field trip journal. Students are encouraged to find solutions to environmental problems. Critical thinking skills are promoted.

Digital Field Trip to the Wetlands, The



Physical Characteristics

- CD-ROM
- Binder with Teacher's Guide (26 pages) and User's Guide (26 pages)

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

System Requirements

Windows System: 386/25, Pentium is preferable, 8 MB RAM, 2 MB hard disk space for Quicktime, 2.5 MB hard disk space for application, Windows 3.1 or better, colour monitor, sound card, and speakers

Copyright	ISBN/Order #	Title
1998	0-9681551-1-1	CD-ROM Hybrid (Mac and Windows)
1996	4W51-W	Teacher's Guide and User's Guide

LEARNING AND TEACHING RESOURCES

Starry Night Backyard

Grade Level(s)

- K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Sienna Software

Intended User(s) Student, Teacher

Resource Designation

- Student-Depth
- Teacher Reference

Type of Resource

- Interactive Software/Multimedia
- Student Workbook
- User's Manual
- Teacher Guide
- Web Site

Publisher/Producer

Sienna Software, Inc.

Distributor/Supplier

Sienna Software, Inc.
303 - 411 Richmond Street East
Toronto, ON M5A 3S5

Telephone (800) 252-5417, ext. 223

Toll Free

Fax (416) 410 - 0359

Internet www.siennasoft.com

Range of Classroom Use

- General

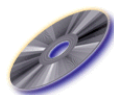
Annotation

Starry Night Backyard CD-ROM addresses specific learning outcomes for Grade 6, Cluster 4: *Exploring the Solar System* and Senior 1, Cluster 4: *Exploring the Universe*. It contains a teacher's guide and web site links, bringing the night sky into the classroom from any point in the world. This CD-ROM tracks student-initiated simulations of objects in space such as comets, stars, the moon, lunar eclipses, and the sun as seen from any place on earth. A floppy disk is provided that contains a student workbook which reinforces science content. While some of the content goes beyond the curriculum, it is a good resource for addressing science outcomes related to astronomy. The user's guide is clearly written.

Comments

The operation of this program is less complex than *Starry Night (Deluxe Version)*. The teacher should work through the resource before introducing it to students; however, it may be best used as a teacher demonstration resource.

Starry Night Backyard



Physical Characteristics

- CD-ROM, floppy disk
- 77 pages User's Guide

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4



System Requirements

Macintosh System: 68040 or PowerPC Macintosh or better; CD-ROM drive
Windows System: Windows 95/98/NT or better (will not work with Windows 3.1)
All Versions: colour monitor, sound card, graphics card

Copyright	ISBN/Order #	Title
1999	9532	Starry Night Backyard CD-ROM
1999		Starry Night Backyard User's Guide

LEARNING AND TEACHING RESOURCES

Starry Night (Deluxe Version)

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Sienna Software

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Depth • Teacher Reference 	<ul style="list-style-type: none"> • Interactive Software/Multimedia • Student Workbook • User's Manual • Teacher Guide • Web Site

<p>Publisher/Producer Sienna Software, Inc.</p> <p>Distributor/Supplier Tangent Scientific Supply Inc. 1 - 13 Hannover Drive St. Catherine's, ON L2W 1A3</p> <p>Telephone (905) 704-1500 Toll Free Fax (905) 704-01555 Internet</p>
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Range of Classroom Use

<ul style="list-style-type: none"> • General

Annotation

Starry Night (Deluxe Version) CD-ROM addresses specific learning outcomes for Senior 1, Cluster 4: *Exploring the Universe*. It contains a teacher's guide and web site links, bringing the night sky into the classroom from any point in the world and from any point in time. It simulates the concept of retrograde motion and tracks student-initiated simulations. A floppy disk is provided that contains a student workbook which reinforces science content. This version contains expanded menus and therefore more options for creating meaningful simulations than *Starry Night Backyard*. The user's guide is clearly written.

Comments

The navigation of the software is complex. The teacher should work through the resource before introducing it to students; however, it may be best used as a teacher demonstration resource.

Starry Night (Deluxe Version)



Physical Characteristics

- CD-ROM, floppy disk
- 64 pages Quick Start Guide

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

System Requirements

Macintosh System: 68040 or PowerPC Macintosh; CD-ROM drive; 8 MB of RAM, and 10-40 MB hard disk
 Windows System: Pentium; Windows 95 or NT 4.0; 16 MB RAM, and 15-60 MB of hard disk space
 All Versions: colour monitor, sound card, graphics card

Copyright	ISBN/Order #	Title
1998	9530	Starry Night Deluxe Version CD-ROM (Win/Mac)
1998		Starry Night Deluxe Quick Start Guide

LEARNING AND TEACHING RESOURCES

Black Widow Spider and More

Grade Level(s)

- K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Omega Films Limited

Intended User(s) Student, Teacher

Resource Designation

- Student-Depth
- Teacher Reference

Type of Resource

- Videocassette
- Teacher Guide

Publisher/Producer

Stanton Films

Distributor/Supplier

Omega Films Limited
 585 Middlefield Road, Unit 23
 Scarborough, ON M1V 4Y5

Telephone (416) 291-4733

Toll Free

Fax 416-291-7775

Internet omega@baloo.com

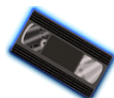
Range of Classroom Use

- General

Annotation

Black Widow Spider and More addresses specific learning outcomes for Grade 6 Cluster 1: *Diversity of Living Things*. It is an in-depth resource focussing on the differences between insects and spiders. It includes a section that addresses the classification of vertebrates and invertebrates. It also compares and contrasts adaptations of common arthropods. A one-page teacher's guide explains the purpose of the video and provides additional information, discussion questions, and references for further reading. This resource goes beyond Manitoba science outcomes in the area of spider reproduction.

Black Widow Spider and More



Physical Characteristics

- 1 videocassette (VHS) 13 minutes, colour
- 1 page (inside cover)

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4



Copyright	ISBN/Order #	Title
2000	5-0103	Black Widow Spider and More

LEARNING AND TEACHING RESOURCES

Cells and Tissues

Science Key Concepts Series

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Benchmark Media

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Depth • Teacher Reference 	<ul style="list-style-type: none"> • Series • Videocassette • Teacher Guide

<p>Publisher/Producer Benchmark Media</p> <p>Distributor/Supplier Marlin Motion Pictures Ltd. 211 Watline Avenue Mississauga, ON L4Z 1P3</p> <p>Telephone (905) 890-1500 Toll Free (800) 865-7617 Fax (905) 890-6550 Internet www.marlineducation.com</p>
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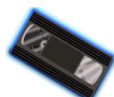
Range of Classroom Use

<ul style="list-style-type: none"> • General

Annotation

Cells and Tissues addresses specific learning outcomes for Grae 8 Cluster 1: *Cells and Systems*, by comparing plant and animal cells, specialized cells in multi-cellular organisms, and cell relationships. The first half of the video is grade appropriate; the last part goes beyond Manitoba science outcomes but can be used for enrichment purposes. The teacher's guide is limited but contains suggestions for pre- and post-viewing experiences, and hands-on learning experiences.

Cells and Tissues



Physical Characteristics

- 1 videocassette (VHS), 13 minutes, colour
- 3 pages



Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright	ISBN/Order #	Title
1998	76958	Cells and Tissues (VHS)
1998		Cells and Tissues (Teacher's Guide)

LEARNING AND TEACHING RESOURCES

Changes in Matter
Matter and Its Properties

Grade Level(s)

- K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Jerome, Brian A.

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Depth • Teacher Reference 	<ul style="list-style-type: none"> • Series • Videocassette • Teacher Guide

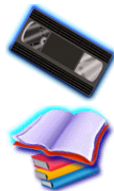
<p>Publisher/Producer AGC/United Learning</p> <p>Distributor/Supplier Marlin Motion Pictures Ltd. 211 Watline Avenue Mississauga, ON L4Z 1P3</p> <p>Telephone (905) 890-1500 Toll Free (800) 865-7617 Fax (905) 890-6550 Internet www.marlineducation.com</p>
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Range of Classroom Use
<ul style="list-style-type: none"> • General

Annotation

Changes in Matter addresses specific learning outcomes for Grade 5 Cluster 2: *Properties of and Changes in Substances*. The video includes information on physical and chemical changes and investigations related to how characteristics and properties of substances may change when they interact. The different characteristics and samples of physical changes are shown, such as the burning of paper, the baking of a cake, and the rusting of a car. Reversible and non-reversible changes are discussed. This video is accompanied by a teacher's guide that contains a summary of the video, activating questions to introduce the video, a script, discussion and review questions, and Internet references. Eleven blackline masters of vocabulary lists, pre- and post-tests, and other supplementary materials are included. The resource is thematically based and meets some Cluster 0: *Overall Skills and Attitudes* outcomes.

Changes in Matter



Physical Characteristics

- 1 videocassette (VHS), 18 minutes, colour
- 20 pages, softcover
- 11 blackline masters

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright	ISBN/Order #	Title
1999	76961	Changes in Matter (VHS)
1999		Changes in Matter (Teacher's Guide)

LEARNING AND TEACHING RESOURCES

Destination Cosmos 20 - Telescope Trail
Destination Cosmos 20

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Omega Films Limited

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Depth • Teacher Reference 	<ul style="list-style-type: none"> • Videocassette • Teacher Guide

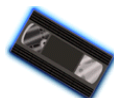
<p>Publisher/Producer Landmark Media Inc.</p>
<p>Distributor/Supplier Omega Films Limited 585 Middlefield Road, Unit 23 Scarborough, ON M1V 4Y5</p>
<p>Telephone (416) 291-4733</p>
<p>Toll Free</p>
<p>Fax 416-291-7775</p>
<p>Internet omega@baloo.com</p>

Range of Classroom Use
<ul style="list-style-type: none"> • General

Annotation

Destination Cosmos 20: Telescope Trail supports specific learning outcomes for Senior 1 Cluster 4: *Exploring the Universe*. Specifically, it addresses how technologies have extended the ability to explore and understand space. Canadian content includes footage of the Canadarm in space. Authentic footage of robotics, the Hubble telescope, and the space shuttle are also featured. The video includes footage of repairs done in space to the Hubble telescope. It addresses design process outcomes for Cluster 0: *Overall Skills and Attitudes*, particularly those related to evaluating the original plan of an investigation and providing suggestions for improvement. The teacher's guide provides little support.

Destination Cosmos 20 - Telescope Trail



Physical Characteristics

• 1 videocassette (VHS), 10 minutes, colour

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4



Copyright	ISBN/Order #	Title
1999	8-1259	Destination Cosmos 20 - Telescope Trail

LEARNING AND TEACHING RESOURCES

Electromagnetic Spectrum, The
Science Key Concepts Series

Grade Level(s)

- K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Benchmark Media

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Depth • Teacher Reference 	<ul style="list-style-type: none"> • Series • Videocassette • Teacher Guide

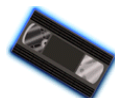
<p>Publisher/Producer Benchmark Media</p> <p>Distributor/Supplier Marlin Motion Pictures Ltd. 211 Watline Avenue Mississauga, ON L4Z 1P3</p> <p>Telephone (905) 890-1500 Toll Free (800) 865-7617 Fax (905) 890-6550 Internet www.marlineducation.com</p>
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Range of Classroom Use
<ul style="list-style-type: none"> • General

Annotation

The Electromagnetic Spectrum addresses specific learning outcomes for Grade 8 Cluster 2: *Optics*, including the light spectrum, the additive theory of colour, and ways of detecting colour. The various types of electromagnetic radiation are compared and contrasted. Students will identify with the references to technology in daily life such as the jumbotron, microwave, cell phones, and tanning beds. Important safety tips are referenced. Many pertinent examples of each wavelength are presented. The teacher's guide is limited but contains suggestions for pre- and post-viewing activities, and hands-on learning experiences.

Electromagnetic Spectrum, The



Physical Characteristics

- 1 videocassette (VHS), 15 minutes, colour
- 3 pages

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4



Copyright	ISBN/Order #	Title
1998	76964	The Electromagnetic Spectrum (VHS)
1998		The Electromagnetic Spectrum (Teacher's Guide)

LEARNING AND TEACHING RESOURCES

Exploring Phases of Matter
Matter and Its Properties

Author(s) Jerome, Brian A.

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Depth • Teacher Reference 	<ul style="list-style-type: none"> • Series • Videocassette • Teacher Guide

Range of Classroom Use

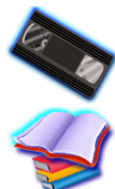
<ul style="list-style-type: none"> • General

<p>Publisher/Producer AGC/United Learning</p> <p>Distributor/Supplier Marlin Motion Pictures Ltd. 211 Watline Avenue Mississauga, ON L4Z 1P3</p> <p>Telephone (905) 890-1500 Toll Free (800) 865-7617 Fax (905) 890-6550 Internet www.marlineducation.com</p>
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Annotation

Exploring Phases of Matter addresses specific learning outcomes for Grade 5 Cluster 2: *Properties of and Changes in Substances*. The video looks at changes of states in matter and includes information on melting, freezing, condensation, and evaporation. It demonstrates the use of heat and its relation to changes of state. The simple example of water changing from ice (solid) to water (liquid) to steam (gas) illustrates the principle of energy affecting changes in phase. The role that energy loss and gain play in phase changes is illustrated through animated graphics. This video is accompanied by a teacher's guide that contains a summary of the video, activating questions to introduce the video, a script, discussion and review questions, and Internet references. Eight blackline masters of vocabulary lists, pre- and post-tests, and other supplementary materials are included. The resource is thematically based and meets some Cluster 0: *Overall Skills and Attitudes* outcomes.

Exploring Phases of Matter



Physical Characteristics

- 1 videocassette (VHS), 18 minutes, colour
- 20 pages, softcover
- 8 blackline masters

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright	ISBN/Order #	Title
1999	76967	Exploring Phases of Matter (VHS)
1999		Exploring Phases of Matter (Teacher's Guide)

LEARNING AND TEACHING RESOURCES

How Do They...? Recycle Paper

How Do They...?

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) National Film Board of Canada

Intended User(s) Student, Teacher

Resource Designation

- Student-Depth
- Teacher Reference

Type of Resource

- Series
- Videocassette
- Teacher Guide

Publisher/Producer

National Film Board of Canada

Distributor/Supplier

National Film Board of Canada
245 Main Street
Winnipeg, MB R3C 1A7

Telephone (204) 983-7997

Toll Free

Fax

Internet www.nfb.ca

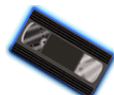
Range of Classroom Use

- General

Annotation

How Do They...? Recycle Paper is a short video without narration that addresses specific learning outcomes for Grade 5 Cluster 2: *Properties of and Changes in Substances*. The video provides an overview of the paper recycling process in Winnipeg, Manitoba, from blue box to recycled product, at a pace appropriate for Grade 5 students. The resource includes teacher notes on the paper recycling process as well as suggested learning experiences. The video addresses some specific learning outcomes for Cluster 0: *Overall Skills and Attitudes*.

How Do They...? Recycle Paper



Physical Characteristics

- 1 videocassette (VHS), 4 minutes, colour
- 1 page (inside cover)

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4



Copyright	ISBN/Order #	Title
1999	C0199 210	How Do They...? Recycle Paper

LEARNING AND TEACHING RESOURCES

How Do They...? Recycle Steel

How Do They...?

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) National Film Board of Canada

Intended User(s) Student, Teacher

Resource Designation

- Student-Depth
- Teacher Reference

Type of Resource

- Series
- Videocassette
- Teacher Guide

Publisher/Producer

National Film Board of Canada

Distributor/Supplier

National Film Board of Canada
 245 Main Street
 Winnipeg, MB R3C 1A7

Telephone (204) 983-7997

Toll Free

Fax

Internet www.nfb.ca

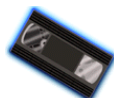
Range of Classroom Use

- General

Annotation

How Do They...? Recycle Steel is a short video without narration that addresses specific learning outcomes for Grade 5 Cluster 2: *Properties of and Changes in Substances*. The video provides an overview of steel recycling in Selkirk, Manitoba. It is an activating experience to focus student discussion and access prior knowledge. The video provides an overview of the steel recycling process at a pace appropriate for Grade 5 students. The resource includes teacher notes on the metal recycling process and suggested learning experiences. This resource addresses some specific learning outcomes for Cluster 0: *Overall Skills and Attitudes*.

How Do They...? Recycle Steel



Physical Characteristics

- 1 videocassette (VHS), 4 minutes, colour
- 1 page (inside cover)

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4



Copyright	ISBN/Order #	Title
1999	C0199 209	How Do They...? Recycle Steel

LEARNING AND TEACHING RESOURCES

Liftoff to Learning: Atmosphere Below

Liftoff to Learning

Grade Level(s)

- K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Landmark Media Inc.

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Depth • Teacher Reference 	<ul style="list-style-type: none"> • Videocassette • Teacher Guide

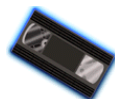
<p>Publisher/Producer Landmark Media Inc.</p> <p>Distributor/Supplier Omega Films Limited 585 Middlefield Road, Unit 23 Scarborough, ON M1V 4Y5</p> <p>Telephone (416) 291-4733 Toll Free Fax 416-291-7775 Internet omega@baloo.com</p>
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Range of Classroom Use
<ul style="list-style-type: none"> • General

Annotation

Liftoff to Learning: Atmosphere Below addresses specific learning outcomes for Grade 5 Cluster 4: *Weather*. It discusses global warming, the greenhouse effect, ozone depletion, and El Nino in a way that is accessible to Grade 5 students. It can be used to generate student discussion and reflection about sustainable development. The teacher's guide provides little support.

Liftoff to Learning: Atmosphere Below



Physical Characteristics

• 1 videocassette (VHS), 28 minutes, colour

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4



Copyright	ISBN/Order #	Title
1999	8-1236	Liftoff to Learning: Atmosphere Below

LEARNING AND TEACHING RESOURCES

Measuring Matter
Matter and Its Properties

Grade Level(s)

K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Jerome, Brian A.

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Depth • Teacher Reference 	<ul style="list-style-type: none"> • Series • Videocassette • Teacher Guide

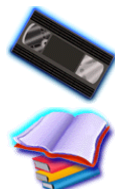
<p>Publisher/Producer AGC/United Learning</p> <p>Distributor/Supplier Marlin Motion Pictures Ltd. 211 Watline Avenue Mississauga, ON L4Z 1P3</p> <p>Telephone (905) 890-1500 Toll Free (800) 865-7617 Fax (905) 890-6550 Internet www.marlineducation.com</p>
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Range of Classroom Use
<ul style="list-style-type: none"> • General

Annotation

Measuring Matter addresses specific learning outcomes for Grade 5 Cluster 2: *Properties of and Changes in Substances* and Grade 8 Cluster 3: *Fluids*. The video identifies properties of the three states of matter and the ways solids, liquids, and gases are measured. A review of the metric system is included that reinforces concepts related to measurement. The principle of density is introduced. The difference between mass (weight) and density is shown by comparing equal volumes of two different types of matter. The use of ruler, scale, beaker, graduated cylinder, and thermometer are demonstrated. This video is accompanied by a teacher's guide that contains a summary of the video, activating questions to introduce the video, a script, discussion and review questions, and Internet references. Eight blackline masters of vocabulary lists, pre- and post-tests, and other supplementary materials are included. The resource is thematically based and meets some Cluster 0: *Overall Skills and Attitudes* outcomes.

Measuring Matter



Physical Characteristics

- 1 videocassette (VHS), 18 minutes, colour
- 20 pages, softcover
- 8 blackline masters

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright	ISBN/Order #	Title
1999	76968	Measuring Matter (VHS)
1999		Measuring Matter (Teacher's Guide)

LEARNING AND TEACHING RESOURCES

Observing the Properties of Matter
Matter and Its Properties

Grade Level(s)

- K 2 4 6 8 S2 S4
 1 3 5 7 S1 S3

Author(s) Jerome, Brian A.

Intended User(s) Student, Teacher

Resource Designation	Type of Resource
<ul style="list-style-type: none"> • Student-Depth • Teacher Reference 	<ul style="list-style-type: none"> • Series • Videocassette • Teacher Guide

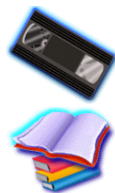
<p>Publisher/Producer AGC/United Learning</p> <p>Distributor/Supplier Marlin Motion Pictures Ltd. 211 Watline Avenue Mississauga, ON L4Z 1P3</p> <p>Telephone (905) 890-1500 Toll Free (800) 865-7617 Fax (905) 890-6550 Internet www.marlineducation.com</p>
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Range of Classroom Use
<ul style="list-style-type: none"> • General

Annotation

Observing the Properties of Matter addresses specific learning outcomes for Grade 5 Cluster 2: *Properties of and Changes in Substances*. The video identifies characteristics and properties that distinguish substances from each other. Properties such as shape, size, colour, texture, odour, sound, weight, and taste are discussed. This video is accompanied by a teacher's guide that contains a summary of the video, activating questions to introduce the video, a script, discussion and review questions, and Internet references. Nine blackline masters of vocabulary lists, pre- and post-tests, and other supplementary materials are included. The resource is thematically based and meets some Cluster 0: *Overall Skills and Attitudes* outcomes.

Observing the Properties of Matter



Physical Characteristics

- 1 videocassette (VHS), 18 minutes, colour
- 20 pages, softcover
- 9 blackline masters

Grade 5 6 7 8 S1 Cluster 0 1 2 3 4

Copyright	ISBN/Order #	Title
1999	76970	Observing the Properties of Matter (VHS)
1999		Observing the Properties of Matter (Teacher's Guide)