

Writing and speaking

Write and speak effectively in the English language

Academic Writing

Demonstrate the ability to write for a variety of academic purposes and situations.

What students should do:

1. Describe, narrate or explain observations of human events or situations (e.g., biographies, historical narrative, ethnography)
2. Analyze patterns and relationships of ideas, topics or themes (e.g., literary analysis, ethnography, academic essay)
3. Construct support for a position, argument, plan or idea
4. Evaluate (e.g., review or critique) an idea, topic or theme based on criteria

Teacher notes:

1. Writing must represent a variety of purposes and situations.
2. Assessment task must include several products including one piece of writing of at least 1500 words in length.
3. The work must be validated as original through a "paper trail," observations, and/or conference.

Students may be asked to . . .

- Write a film review analyzing relationship of themes
- Produce a magazine for high school students
- Write an ethnography

Writing and Speaking 3.1

Writing and speaking

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Technical Writing

Write for a variety of technical purposes, situations and audiences.

What students should do:

1. Describe a complex process, procedure, or device for a particular audience (e.g., computer programs, business):
 - a. evaluate the amount of technical knowledge the audience has
 - b. determine where and how the information will be used
 - c. use style/format and conventions appropriate for the audience (e.g., bulleted steps, chronological sequencing, neutral voice)
 - d. use technical vocabulary appropriately for the audience
 - e. incorporate detailed examples or illustrations
 - f. include warnings or cautions to help audience prevent problems

Teacher notes:

1. Writing for technical purposes must include at least one complex project and work in all three of the following categories:
 - a. directions and procedures (e.g., handbooks, operating procedures, reports and proposals)
 - b. laboratory reports, investigative reports, analytical reports)
 - c. correspondence (e.g., memos, meeting minutes, news releases)
2. Whenever possible, the writing product should be evaluated by a knowledgeable person from a real world technical or business setting.

Students may be asked to . . .

- Write instructions for assembling a toy designed by the student
- Write a manual of directions for computer software in the school computer lab
- Write a feasibility study for locating a business or service on a particular site

Writing and Speaking 3.2

Writing and speaking

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Public Speaking

Construct and deliver speeches for a variety of purposes and audiences.

What students should do:

1. Construct and deliver a message for a specific audience:
 - a. determine the intent of the message (e.g., persuasive, informative, inspirational)
 - b. select appropriate conventions of communication (e.g., format, language)
 - c. construct support using information.
 - d. use visuals, technology or other equipment
 - e. use effective delivery techniques (e.g., non-verbals, projection and voice)
 - f. modify communication and/or adjust presentation based on verbal and non-verbal feedback
 - g. use skills of conciliation, mediation and/or negotiation to improve communication

Teacher notes:

Presentation should address both large and small groups in authentic or simulated settings.

Students may be asked to . . .

- Develop and present a proposal to address a school or community concern
- Deliver 3 public speaking presentations developed for different purposes and audiences

Writing and Speaking 3.3

Writing and speaking

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Public Parliamentary Procedures

Use public speaking strategies and techniques within a group.

What students should do:

1. Formulate clear, concise arguments for debate or extemporaneous speech
2. Support ideas with evidence
3. Speak for persuasive and/or demonstration purposes
4. Know and apply effective speech delivery techniques (e.g., voice, stage presence)
5. Conduct and participate in a meeting according to accepted parliamentary procedure
6. Recognize and respond to the needs of the audience or listener
7. Listen to and acknowledge the opinions of another person
8. Offer and accept criticism constructively

Teacher notes:

1. May use quality indicators of competitive speaking events as guidelines for assessment.
2. Parliamentary procedures should be at a level appropriate for semi-formal decision-making groups (e.g., school board, city council, union meeting).

Students may be asked to . . .

- Conduct a city council meeting according to accepted parliamentary procedures

Writing and Speaking 5.1

Writing and speaking

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Business Presentation

Prepare and communicate information in business situations.

What students should do:

1. Use technology to prepare written or visual information in a real or simulated business setting. Message must be:
 - a. appropriate for audience
 - b. structured in a clear, concise manner
 - c. formatted to facilitate comprehension
2. Present information orally in a real or simulated business setting:
 - a. use visuals, handouts and non-print materials effectively
 - b. speak with conciseness and clarity
 - c. explain technical vocabulary and use terms accurately
 - d. relate to the audience
 - e. use appropriate non-verbal communication
 - f. plan and deliver a well-organized presentation
 - g. summarize effectively
 - h. present pertinent details
 - i. monitor audience response and use strategies to maintain focus

Teacher notes:

Assessment must utilize appropriate current technology such as: Presentation Graphics Software, Desktop Publishing, Video and/or CD-ROM.

Students may be asked to . . .

- Prepare graphics and give a speech on how business trends are affecting your company

Writing and Speaking 7.1

Writing and speaking

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Interpersonal Communication

Demonstrate effective communication and problem-solving skills in personal, family, community and work situations.

What students should know:

1. Understand communication theories and principles
2. Understand how various factors (e.g., gender, point of view) affect patterns of communication, interaction and problem solving in families and work settings
3. Understand strategies for working and operating successfully within social and organizational systems

What students should do:

1. Apply communication and problem-solving skills in personal, family, community and/or work-place situations:
 - a. make a decision by consensus
 - b. resolve a conflict
 - c. deliver constructive criticism
 - d. express a complaint to an authority figure
 - e. handle an authentic situation which demands sensitivity to differences in age
 - f. justify a position or persuade a peer

Teacher notes:

1. May be assessed in simulated situations.
2. Students must be strongly cautioned to avoid the application of stereotypes in explaining differences in communication styles and patterns.

Writing and Speaking 10.1

Use and interpret the arts

Artistic Performance

Perform or present an artistic presentation in dance, literary arts, music, theater, visual arts, or media arts.

What students should know:

1. Understand the elements, techniques and processes of an art form
2. Understand how art works are structured for a variety of functions

What students should do:

1. Perform or present works in dance, literary arts, music, theater, visual arts, or media arts:
 - a. demonstrate elements and skills of art form
 - b. communicate intent
 - c. demonstrate a personal voice
 - d. present a range of work
 - e. demonstrate a sense of an artistic whole
 - f. demonstrate a consideration of audience
 - g. use multiple sources for critique and feedback

Students may be asked to . . .

- Write, direct and stage three dramatic scenes, each with a distinctly different focus
- Create two play drafts and a final working script

Use and interpret the arts

Artistic Performance continued

Teacher notes continued:

5. Assessment criteria should be unique to individual projects.
6. Students should perform at or above the standard achievement level of the Frameworks for Arts Curriculum Strategies (FACS).
7. Performances should incorporate use of appropriate technology.

Use and interpret the arts

Artistic Interpretation

Interpret and evaluate works of art in terms of specific criteria that represent an informed opinion or response.

What students should know:

1. Know a critical approach to interpreting and analyzing works of art
2. Understand the elements and structure of the art form and how they are used to create meaning
3. Know the historical, cultural and social background of selected artworks

What students should do:

1. Apply a critical approach to interpret and analyze works of art
2. Analyze and interpret artistic intent
3. Consider historical, cultural and social background in interpretation
4. Describe how the artist uses elements of the art form to produce particular effects
5. Communicate an informed interpretation using the vocabulary of the art form

Teacher notes:

1. Work critiqued should include complex examples from different historical, cultural and social contexts.
2. Students should perform at or above the standard achievement level of the Frameworks for Arts Curriculum Strategies (FACS).

Students may be asked to . . .

- Arrange an exhibit of art works based on a major theme. Explain how each of these works was chosen and discuss interpretations

- Create subjects, symbols and ideas in original works that reflect problems in daily life

Arts 3.2 & 6.2

Use and interpret the arts

Creative Technology

Use non-print technology for creative communication.

What students should know:

1. Know contemporary technological principles, concepts and tools
2. Know legal, environmental and ethical issues concerning production

What students should do:

1. Apply technology to create an original, complex production that meets quality standards of performance, broadcast, publication, business or industry
2. Demonstrate an advanced level of technological skill
3. Communicate effectively to accomplish the creative purpose for a target audience
4. Use multiple sources for critique and feedback
5. Manage the process of constructing or producing technical elements from the design
6. Apply principles of media aesthetics
7. Analyze how images both convey information and persuade

Students may be asked to . . .

- Create an interactive World Wide Web site to provide usable information
- Create functional scenery, properties, lighting, sound, costumes and makeup
- Design and produce a news segment

Arts 3.4

Artistic Creation

Create an artistic presentation in dance, literary arts, music, theater or visual/media arts.

What students should know:

1. Understand how to generate compositional ideas from a variety of sources
2. Understand the elements, techniques and processes of an art form
3. Understand how art works are structured for a variety of functions

What students should do:

1. Use an artistic decision-making process to create a complex presentation or composition
 - a. identify, analyze and select subject matter, symbols and ideas
 - b. use improvisation to generate and communicate artistic intent
 - c. create environment using the elements of the art form
 - d. demonstrate a consideration of audience
 - e. use multiple sources for critique and feedback
 - f. demonstrate a sense of an artistic whole
 - g. create to communicate

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Students may be asked to . . .

- Compose original music
- Choreograph a dance production
- Improvise using a 12-bar blues progression

Artistic Creation continued

Teacher notes:

1. Music students must read and notate.
2. Music, dance, media arts and theater students must perform independently and in a group. They must also demonstrate sensitivity to audience and ensemble response by making appropriate adjustments.
3. Theater performances must demonstrate the collaborative nature of art form.
4. Assessment criteria are unique to individual projects.
5. Students should perform at or above the standard achievement level of the Frameworks for Arts Curriculum Strategies (FACS).
6. Performances should incorporate use of appropriate technology.

Solve problems by applying mathematics

Algebraic Patterns

Analyze mathematical patterns, relationships and functions to model and solve problems.

What students should know:

1. Identify rates of change in different models of linear relationships
2. Know characteristics of algebraic (e.g., polynomial) and transcendental (e.g., exponential, periodic) functions and relations
3. Know functional notation and terminology

What students should do:

1. Translate between real world situations and mathematical models using:
 - a. graphs
 - b. data tables and/or spread sheets
 - c. verbal descriptions
 - d. algebraic expressions
2. Generalize patterns and build mathematical models to describe and predict real world situations. Include the following situations:
 - a. linear
 - b. exponential growth/decay
 - c. periodic
3. Use properties of mathematics to synthesize the concepts of algebra or justify reasoning in a logical argument

Teacher notes:

1. Must include at least one form of technology.
2. Embed elements of reasoning, problem solving, connections and communication in assessments.

Mathematics 1.1

Solve problems by applying mathematics

Patterns and Discrete Functions

Use discrete structures to model mathematical relationships and solve problems.

What students should know:

1. Understand the difference between discrete and continuous models of data
2. Understand principles of advanced counting (e.g., permutations, combinations)

What students should do:

1. Translate between real world situations and discrete mathematical models using:
 - a. finite graphs
 - b. matrices
 - c. verbal descriptions
 - d. data tables
 - e. sequences
2. Analyze and model recursive patterns
3. Build discrete mathematical models or develop algorithms to solve problems
4. Use properties of mathematics to justify reasoning in a logical argument

Teacher notes:

1. Must include at least one form of technology.
2. Embed elements of reasoning, problem solving, connections, and communication in assessments.

Mathematics 1.2

Students may be asked to . . .

- Collect data on postage stamp costs for a one hundred year period of time and predict future values
- Analyze patterns for sunrise and sunset to make conclusions or predictions

Students may be asked to . . .

- Use graphs and matrices to determine delivery routes to cities in Minnesota
- Compare several retirement investment strategies

Solve problems by applying mathematics

Shape and Space

Apply concepts of shape and space to illustrate and describe the physical world and solve problems.

What students should know:

1. Understand the characteristics of geometric figures in both two and three dimensions including:
 - a. transformations
 - b. congruence and similarity
 - c. perimeter, area and volume
 - d. distance
 - e. scaling
 - f. symmetry

What students should do:

1. Use spatial visualization to describe objects and solve problems
2. Analyze characteristics of shape, size and space in art, architecture, design or nature
3. Translate between numerical relationships and geometric representations to analyze problem situations (e.g., scaling, coordinate geometry)
4. Use properties of shape, location or measurement to justify reasoning in a logical argument

Teacher notes:

1. Must include at least one form of technology.
2. Embed elements of reasoning, problem solving, connections and communication in assessments.
3. Be sensitive to the use of diagrams or shapes which may communicate specific or unintended meanings to particular groups or individuals.

Students may be asked to . . .

- Create two different shaped packages for a given light bulb and a packing plan for a shipping carton
- Formulate and analyze the path of a comet

Solve problems by applying mathematics

Chance and Data Handling

Apply concepts of chance and data analysis to make critical judgements, predictions or decisions.

What students should know:

1. Understand the following statistical concepts:
 - a. measures of center, variability and rank
 - b. reliability
 - c. validity
 - d. correlation
 - e. sampling
2. Understand the following concepts related to uncertainty:
 - a. randomness
 - b. permutations
 - c. combinations
 - d. theoretical and experimental probability

What students should do:

1. Investigate a problem of significance:
 - a. formulate a complex question(s)
 - b. design a statistical study
 - c. collect data
 - d. represent data appropriately (e.g., tables, graphs, charts, plots, frequency distributions, data bases)
- e. use appropriate statistics to summarize data
- f. determine whether additional data and analysis are necessary
- g. draw conclusions based on data
- h. communicate the results appropriately for intended audience

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Students may be asked to . . .

- Use a computer simulation to find the likelihood of success in shooting 1000 free throws
- Design and conduct a study to determine whether high school students with jobs have lower grades

Solve problems by applying mathematics

Chance and Data Handling continued

- Analyze and evaluate the statistical design (e.g., sampling techniques, misuse of statistics, validity of instrument) and reasonableness of conclusions in a published study or article
- Use probability experiments, simulations or theory to model situations involving uncertainty and make predictions

Teacher notes:

- Must include the use of at least one form of technology.
- Embed the elements of reasoning, problem solving, connections and communication in assessments.

Mathematics 1.4 continued

Solve problems by applying mathematics

Technical Applications

Apply mathematics to solve technical problems.

What students should know:

- Know computational technologies
- Know how to use complex measurement equipment for several systems (e.g., electronic, construction, transportation)
- Convert between measuring systems (e.g., metric, English, farads, henrys)
- Measure to scale (e.g., linear and logarithmic electronic meter scales, scale drawings)
- Calculate quantities using algebraic formulas (e.g., volume, power, impedance)
- Understand information in complex graphs, tables, and charts
- Understand scientific/exponential notation for use in complex systems
- Understand trigonometric applications appropriate to technical situations
- Understand fundamental geometric constructions or calculations for use in drafting or construction

What students should do:

- Create a set of plans to design or modify a complex structure, product, or system
 - research background information
 - calculate mathematical specifications
 - develop a materials list which matches mathematical specifications
- Construct a complex structure, product or model to mathematical specifications
- Analyze an existing complex structure, product or system for purposes of maintenance, repair, trouble shooting or optimizing function

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Mathematics 12.1

Students may be asked to . . .

- Design and create a set of plans for building a wood product, such as a complex piece of furniture or cabinetry

Solve problems by applying mathematics

Technical Applications continued

Teacher notes:

1. The complexity of tasks should be equivalent to that required for entry into apprenticeship training. Options include:
 - a. analysis, maintenance, and repair of television systems
 - b. production of a complete set of plans with specifications for a boat or snowmobile trailer
 - c. the design and construction of a high-mileage, fuel-efficient vehicle
 - d. the design and/or complete analysis of the energy characteristics of a residential or commercial structure

Solve problems by applying mathematics

Measurement

Use precision measurement instruments and techniques to analyze or design technical products.

What students should know:

1. Know measurement systems related to a specific technical process
2. Know mathematical principles of the measurement system
3. Know conversions of measurement units
4. Know how measuring tools are used within systems
5. Understand information found in graphs, tables and charts

What students should do:

1. Given a complex technical application involving repair, assembling or design of a specific product:
 - a. select appropriate measuring tools for the system
 - b. measure with appropriate level of precision
 - c. maintain specific tolerances in measurement

Teacher notes:

1. Assessments must include complex application of more than one system of measurement.

Students may be asked to . . .

- Plan and build a complex structure such as a deck, a home addition or audio amplifier
- Analyze and rebuild an engine
- Survey and develop a building site
- Produce a machine part to specified tolerance

Math Research

Gather and analyze information on a mathematical topic.

What students should do:

1. Design and conduct an investigation:
 - a. select and refine a topic through research
 - b. formulate generalizations about the topic
 - c. document insights gained during the investigation
 - d. connect new concepts to familiar ideas in mathematics or other content areas
 - e. use mathematical properties to support conclusions
 - f. communicate findings for audience outside of mathematics

Teacher notes:

1. Information should be gathered from a variety of sources such as print, technological or human.
2. Teachers should assist students in selecting topics at an appropriate level of difficulty.

Students may be asked to...

- Explore from a mathematical viewpoint the question: How does a bridge support all that weight?
- Design your own numeration system and explain why you prefer it to the base ten system we currently use

History of Science

Understand the interaction between social, economic, technological and/or environmental factors and the occurrence of scientific advances.

What students should know:

1. Understand the significance of a number of major scientific advances of recorded history

What students should do:

1. Gather information on at least three major scientific breakthroughs (i.e., new ideas that challenged accepted ways of thinking)
2. Investigate and analyze the social, economic, technological and/or environmental context in which a scientific breakthrough occurred
3. Analyze the immediate and long term effect of the scientific breakthrough on the social, economic, technological and/or environmental contexts

Teacher notes:

1. Tasks must represent an intensive study of the history of science.
2. Examples of major scientific breakthroughs are: Copernican Revolution, Newtonian Mechanics, quantum theory, aspects of medical technology, atomic theory and plate tectonics.

Students may be asked to...

- Analyze the social factors of the Renaissance which led to the discrediting of the theory of the geocentric universe

Scientific Investigation

Use scientific inquiry and logical reasoning to answer questions, solve problems and communicate results.

What students should know:

1. Understand the concepts of:
 - a. variables, controls, hypotheses, qualitative and quantitative data
 - b. instrumentation
 - c. measurement including scientific notation, significant figures and error
 - d. graphical interpretation and analysis

Students may be asked to . . .

- Conduct a series of lab investigations to investigate a concept in physics
- Write a report making recommendations regarding drug effectiveness

What students should do:

1. Given a report of scientific research:
 - a. identify the question to be investigated and the critical variables
 - b. identify scientific concepts related to research
 - c. evaluate the researcher's methodology
 - d. evaluate how data and data analysis support conclusions
 - e. specify implications for further investigation
2. Design and conduct an experiment to investigate a question of significance:
 - a. investigate a topic and frame a question
 - b. formulate a testable hypothesis
 - c. identify relevant variables
 - d. describe methodology
 - e. select and use appropriate technology
 - f. systematically record relevant data
 - g. select and apply statistical methods

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Scientific Investigation continued

- h. analyze data and make generalizations
- i. use data to construct reasonable explanations to support or refute hypothesis
- j. compare results to theory, experience and/or current models
- k. specify implications for further investigation
- l. identify and consider alternative interpretations of results
- m. communicate and defend results of the investigation

Teacher notes:

1. Consider implications for the environment when applicable.
2. Report of a scientific research investigation may include a published work, a student-generated document, a scientific abstract or a teacher-created simulation.
3. To create authentic scientific situations, students should work in groups when appropriate but be assessed individually.

Research Process

Collect primary data to investigate a topic, problem or issue.

What students should know:

1. Know primary research techniques:
 - a. surveys
 - b. structured and unstructured interviews
 - c. observations
 - d. questionnaires
2. Know how to access secondary sources in multiple ways

What students should do:

1. Refine a topic into a clear statement of a research problem with subproblems
2. Evaluate research problem for feasibility (e.g., availability and access to data)
3. Create a plan for collecting and interpreting data
4. Write a review of background information based on survey of related literature from a variety of sources:
 - a. identify key issues
 - b. identify relevant historical and contextual background
5. Collect and interpret primary data (e.g., interview, observation, questionnaire)
6. Discuss research findings:
 - a. describe research problem
 - b. describe the findings from survey of literature
 - c. present primary data
 - d. interpret and analyze information
 - e. formulate possibilities for further research

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Inquiry 3.1
Category A: Published Sources

Students may be asked to . . .

- Create a case affirming a national policy resolution
- Write a biographical sketch of an individual describing the historical and social period in which s/he lived

Research Process continued

Teacher notes:

1. Use computer search techniques to access information.
2. Teacher will provide guidelines for acceptable selection of sources and communication formats.

History through Culture

Understand historical periods through investigation of their cultural expressions.

What students should know:

1. Know major events, conflicts, leaders of an historical period

What students should do:

1. Read historical fiction to analyze cultural expressions of an era
2. Gather information to analyze selected cultural expressions of a different historical period, including:
 - a. dominant philosophies
 - b. major events or conflicts
 - c. important leaders and their contributions
 - d. major writings and/or publications
 - e. artistic works
 - f. architecture
 - g. technology
 - h. daily life/social customs
3. Interpret ideas from a drama or historical fiction to create a study of cultural expression
4. Compare representations of the historical period to authentic cultural expressions

Teacher notes:

Final product must be a synthesis of a number of aspects of the historical period.

Students may be asked to . . .

- Create an original drama showcasing the dominant philosophies, artistic works, occupations and social class distinctions of a historical period

History of the Arts

Understand the past and continuing development of an art form or theme.

What students should know:

1. Understand properties and functions of works of art from various historical periods or cultures. For each work:
 - a. trace changes and/or developments of themes or ideas over time and across cultures
 - b. identify social or cultural contexts
 - c. know the form and function of each work
 - d. know expressive qualities of art for each historical period

What students should do:

1. Gather information to analyze the development of a selected idea or theme
2. Select, describe and interpret works of art in a historical and/or cultural framework

Teacher notes:

1. Include more than one cultural perspective of the theme or of works of art relating to the theme.
2. The study of the development of the theme or idea should encompass a significant period of time and include a contemporary perspective.
3. Students should perform at or above the standard achievement level of the Frameworks for Arts Curriculum Strategies (FACS).

Students may be asked to . . .

- Create a set of maps showing the development of an art form or theme in relation to cultural influences
- Plan and present a multimedia presentation showing major developments of an art form

inquiry

Conduct research and communicate findings

Social Science Processes

Investigate historical artifacts, documents, events or concepts using social science processes.

What students should know:

1. Know primary research techniques
 - a. surveys
 - b. structured and unstructured interviews
 - c. observations
 - d. questionnaires
2. Know how to access sources in multiple ways

What students should do:

1. Formulate a question about a historical event, issue or interpretation of a concept
2. Create a plan for collecting and interpreting data
3. Evaluate research problem for feasibility (e.g., availability and access to data)
4. Gather information through observation, interviews, surveys or experiments
5. Gather background information based on survey of related literature from a variety of sources:
 - a. identify key issues
 - b. identify relevant historical and contextual background (e.g., time period, geographic location)
6. Discuss research findings:
 - a. describe issues
 - b. describe the findings from survey of literature
 - c. present primary data
 - d. identify bias and context of data or findings
 - e. examine how the time period and location of data source affect the data
 - f. examine limitations of the investigation, research process or findings
 - g. formulate possibilities for further research

Students may be asked to . . .

- Write a report about how the history of an address in a town in Minnesota relates to the history of the city, state, nation and world

Inquiry 4.1
Category C: Data Gathering

inquiry

Conduct research and communicate findings

Cultures Across Time

Understand the significance of events and themes across cultures and time.

What students should know:

1. Understand historical developments of world cultures:
 - a. contributions of significant people
 - b. key events which precipitate development and/or change
 - c. factors which influence the outcomes of historical events (e.g., geographic location, chance occurrences, social movements, technology)
 - d. development of ideas, beliefs and cultural expressions
 - e. development of social and political institutions
 - f. interactions and conflicts within or across cultures

What students should do:

1. Examine major historical developments or turning points in world history:
 - a. describe significance of the event in its historical context
 - b. examine cause and effect relationships
 - c. discuss impact on other cultures and/or time periods
 - d. compare historical interpretations and perspectives

Teacher notes:

1. This standard is open to a historical or cultural approach.
2. Include tasks which address both western and non-western cultures.

Inquiry 4.2
Category A: Published Sources

Themes of U.S. History

Trace significant themes in the development of the United States.

What students should know:

1. Understand the importance of key events, concepts and people in the historical development of the United States

What students should do:

1. Illustrate at least one theme in relationship to the historical development of the United States:
 - a. gathering and interaction of the nation's people
 - b. development of United States democracy
 - c. economic and technological changes
 - d. changing role and interaction of the United States in the world
2. Illustrate the influence of diverse ideas or beliefs (e.g., religions, sovereignty, ethnicity, class, gender, cultures) on a theme or an event in the historical development of the United States
3. Compare and contrast the relationship between historical and contemporary themes or events

Teacher notes:

Tasks may reflect chronological or thematic organization.

Students may be asked to . . .

- Show how the evolution of democracy is related to current political or social issues

Recorders of History

Understand that historical knowledge is the result of decisions made by recorders of history.

What students should know:

1. Understand events in a chronological framework
2. Understand factors influencing decisions made by recorders of history
3. Understand the types of information sources (e.g., documents, artifacts, interviews) and validation procedures (e.g., corroboration of evidence) used by recorders of history

What students should do:

1. Analyze two or more accounts of the same historical event recorded in different time periods:
 - a. compare and contrast the accounts
 - b. explain the differences in terms of availability and use of sources, societal influences on the recorder, and purpose of the account (if known)
2. Record the history of an event using several primary sources
 - a. identify factors which influence the recorder of the event
 - b. use appropriate validation procedures (e.g., multiple occurrences, reliability of source)

Teacher notes:

Select topics for student histories which have an adequate number of sources available.

Students may be asked to . . .

- Compare and contrast historical documents from different time periods about the same event
- Write a historical account using letters, journals and photographs

inquiry

Conduct research and communicate findings

Issue Analysis

Research an issue and evaluate proposed positions or solutions.

What students should do:

1. Gather information on past or contemporary issues
2. Identify relevant questions or a range of points of view
3. Summarize relevant background information
4. Examine information from each source for bias and intended audience
5. Identify areas of conflict, compromise or agreement among various groups concerning the issue
6. Evaluate multiple positions and proposed solutions for the issue:
 - a. analyze conclusions, arguments and supporting evidence
 - b. identify motives of groups or individuals
 - c. analyze feasibility and practicality
 - d. identify impact on policies
 - d. compare alternative solutions
 - e. project consequences

Students may be asked to . . .

- **Research an issue which impacts society and analyze it from the following points of view:**
 - historical significance
 - interest groups
 - conflicts
 - related issues
 - effect on the local area
 - effect on the entire country

Inquiry 4.6
Category A: Published Sources

inquiry

Conduct research and communicate findings

Scientific Methods

Apply steps of scientific methods, logical reasoning and creative thinking to answer questions and solve problems.

What students should do:

1. Identify and formulate a question:
 - a. conduct a literature review
 - b. define a problem
 - c. formulate a hypothesis
 - d. design an experiment
2. Gather information:
 - a. use appropriate technological tools and methodologies
 - b. record data
 - c. perform an experiment
3. Handle data:
 - a. apply appropriate technology
 - b. select and apply statistical processes
4. Analyze data and make generalizations:
 - a. replicate experiment
 - b. identify and consider alternative interpretations of results
 - c. formulate new questions based on investigation
 - d. compare findings to theory, experience and current practice
 - e. use evidence to support ideas
 - f. develop conclusions
 - g. formulate recommendations
5. Communicate results and conclusions:
 - a. report findings in approved format
 - b. summarize results and conclusions
 - c. report self-reflections and generalizations

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Inquiry 5.1
Category B: Scientific Methods

Students may be asked to . . .

- **Identify an agricultural problem and conduct an experiment to answer the question or solve the problem**

Conduct research and communicate findings

Scientific Methods continued

Apply steps of scientific methods, logical reasoning and creative thinking to answer questions and solve problems.

Teacher notes:

1. Experiment must contribute to the student's general body of knowledge or confirm an understanding of existing knowledge.
2. Student must use most current technology available.

Inquiry 5.1 continued
Category B: Scientific Methods

Conduct research and communicate findings

Research and Create a Business Plan

Develop and implement a plan to start a business or an organization.

What students should know:

1. Know relevant scientific principles
2. Understand economic principles
3. Understand marketing/sales
4. Understand how the business or organization functions within a larger context
5. Understand potential impact of business or organization on people and communities
6. Understand human resources management

What students should do:

1. Gather information:
 - a. keep records
 - b. use market research
 - c. track markets
 - d. use computers, telecommunications and satellite technology
 - e. use a variety of sources of information
 - f. utilize human resources
2. Develop a business plan:
 - a. conduct a feasibility study
 - b. produce a cost/benefit analysis
 - c. conduct a resource assessment
 - d. identify alternative solutions to problems

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Inquiry 5.2
Category C: Data Gathering

Students may be asked to . . .

- Create a business plan for a school business

inquiry

Conduct research and communicate findings

Research and Create a Business Plan continued

3. Implement plan:
 - a. communicate information regarding decisions
 - b. apply human relations skills
 - c. apply relevant/useful mechanical and technical skills
 - d. use marketing and sales techniques
 - e. integrate economic, marketing, sales and technical aspects with sound environmental practices
 - f. analyze effectiveness of plan

Teacher notes:

May be assessed in actual or simulated situations.

Inquiry 5.2 continued
Category C: Data Gathering

inquiry

Conduct research and communicate findings

Market Research

Investigate a product through market research.

What students should do:

1. Conduct secondary research (e.g., maps, chamber of commerce information, census data) to investigate a market need or problem
2. Define marketing problem
3. Conduct market research using any two of the following methods:
 - a. direct mail survey
 - b. telemarketing survey
 - c. personal interview
 - d. discussion group
 - e. panels
 - f. sampling
 - g. observations
 - h. market analysis
4. Correlate, tabulate and report findings
5. Analyze the viability of product, price, place and promotion based on research findings

Students may be asked to . . .

- Research a line of products to be sold in the school store

Inquiry 7.1
Category C: Data Gathering

Case Study

Use observation and theory to study human interaction, learning or development.

What students should know:

1. Know theories of human behavior, learning or development
2. Know methods and techniques of primary research (e.g., interview techniques, narrative reporting, record keeping)
3. Know legal and ethical procedures related to research (e.g., copyright laws, use of human subjects)

Students may be asked to . . .

- Test child development theories by observing a preschool group and write descriptions of behavior

What students should do:

1. Refine a topic into a clear statement of a research problem with subproblems
2. Create a plan for collecting data:
 - a. evaluate feasibility (e.g., access, confidentiality, obligations)
 - b. establish a process for conducting observations and recording descriptions
3. Gather and analyze data:
 - a. conduct observations, interviews and/or debriefings
 - b. record data
 - c. identify key scenes and/or important interview information
 - d. identify patterns and various interpretations of data
4. Survey related literature

—continued next page—

Inquiry 10.1
Category C: Data Gathering

Case Study continued

5. Communicate findings:
 - a. describe key scenes, people, dialogue and or places
 - b. compare findings to theories of human interaction, learning or development
 - c. make conclusions based on findings
 - d. identify implications for further study

Inquiry 10.1 continued
Category C: Data Gathering

inquiry

Conduct research and communicate findings

New Product Development

Research, develop and test a new product.

What students should know:

1. Understand the characteristics of needs analysis
2. Know characteristics and impact of the use of specific materials or technology
3. Understand material processing and/or design techniques

What students should do:

1. Develop and test a new product:
 - a. research the need and the market
 - b. design a new or improved product which meets the need
 - c. create the new or improved product
 - d. test and evaluate the product
 - e. assess the impact of production, use and eventual disposal of the product on the environment, society, and health, as applicable

Students may be asked to . . .

- Create a video presentation for a public service announcement
- Create an interactive training module
- Create a multi-media data base

Inquiry 12.1
Category C: Data Gathering

sciences

Understand and apply scientific concepts

Biological Concepts

Understand biological concepts, theories and principles through investigation and analysis of cells, organisms and ecosystems.

What students should know:

1. Understand cell theory (e.g., differentiation, homeostasis)
2. Understand mechanisms of heredity (e.g., DNA, traits, reproduction)
3. Understand biological change over time (e.g., natural selection, biodiversity)
4. Understand the interdependence of organisms (e.g., cooperation/competition)
5. Understand material cycles and energy flow in living systems (e.g., photosynthesis, nitrogen cycle)
6. Understand the behavior of organisms (e.g., cause/effect, stimulus/response)
7. Understand the historical significance of major scientific advances (e.g., vaccines, genetics)

What students should do:

1. Identify and formulate questions based on observations and the corresponding scientific concepts
2. Design and conduct investigations using at least two of the following methods:
 - a. Inquiry (e.g., verification, guided, open-ended)
 - b. case study
 - c. service learning (e.g., adopt a stream)
 - d. field study

—continued next page—

Students may be asked to . . .

- Design an investigation to analyze pond water to determine the presence of microorganisms

Understand and apply scientific concepts

Biological Concepts continued

3. Analyze data to support or refute hypotheses:
 - a. select and apply statistical processes
 - b. compare results to scientific theories, current models and/or personal experience
4. Use scientific evidence to defend or refute an idea in an historical or contemporary context:
 - a. identify scientific concepts found in evidence
 - b. evaluate the validity of the idea in relationship to scientific information
 - c. analyze the immediate and long-term impact on the individual and/or society in the areas of technology, economics and the environment

Teacher notes:

1. This standard should be paired with Inquiry Standard 2.2 whenever appropriate.
2. Students are encouraged to communicate to an audience outside of the school setting whenever possible.
3. Students must demonstrate basic safety procedures and skills when using tools and equipment.

Understand and apply scientific concepts

Chemical Concepts

Understand concepts, theories and principles in chemistry through investigation and analysis.

What students should know:

1. Understand atomic theory (e.g., isotopes, quantum theory)
2. Understand relationships between the structure and properties of matter:
 - a. organic and inorganic bonding
 - b. periodicity
 - c. solutions chemistry
3. Understand chemical reactions (e.g., rates, stoichiometry)
4. Understand interactions of energy and matter (e.g., phase change, equilibrium)
5. Understand the historical significance of major scientific advances (e.g., periodic table, atomic theory)

What students should do:

1. Identify and formulate questions based on observations and the corresponding scientific concepts
2. Design and conduct investigations using at least two of the following methods:
 - a. inquiry (e.g., verification, guided, open-ended)
 - b. case study
 - c. service learning (e.g., adopt a stream)
 - d. field study

—continued next page—

Students may be asked to . . .

- Analyze the chemical reactions that produce hydrogen gas through field study

Understand and apply scientific concepts

Chemical Concepts continued

3. Analyze data to support or refute hypotheses:
 - a. select and apply statistical processes
 - b. compare results to scientific theories, current models and/or personal experience
 - c. identify and consider alternative interpretations of results
4. Use scientific evidence to defend or refute an idea in an historical or contemporary context:
 - a. use relevant scientific information
 - b. analyze the immediate and long-term impact on the individual and/or society in the areas of technology, economics and the environment

Teacher notes:

1. This standard should be paired with Inquiry Standard 2.2, whenever appropriate.
2. Students are encouraged to communicate to an audience outside of the school setting whenever possible.
3. Students must demonstrate basic safety procedures and skills when using tools and equipment.

Sciences 2.2 continued

Understand and apply scientific concepts

Earth and Space Systems

Understand concepts, theories and principles of earth and space systems through investigation and analysis.

What students should know:

1. Understand earth systems through the interaction of forces and energy (e.g., plate tectonics, terranes)
2. Understand geochemical processes and cycles (e.g., rock cycle, chemical reservoirs)
3. Understand theories of the origin and evolution of the universe (e.g., planetary systems, stellar cycles)
4. Understand energy in the earth system (e.g., global climate, convection)
5. Understand the historical significance of major scientific advances (e.g., geological time scale, plate tectonics)

What students should do:

1. Identify and formulate questions based on observations and the corresponding scientific concepts
2. Design and conduct investigations using at least two of the following methods:
 - a. inquiry (e.g., verification, guided, open-ended)
 - b. case study
 - c. service learning (e.g., adopt a stream)
 - d. field study

—continued next page—

Sciences 2.3

Students may be asked to . . .

- Create a topographical map which includes geographical features, relate the site to the earth's equilibrium, describe how the land features were formed, and describe atmospheric dynamics that affect the site

Understand and apply scientific concepts

Earth and Space Systems

continued

3. Analyze data to support or refute hypotheses:
 - a. select and apply statistical processes
 - b. compare results to scientific theories, current models and/or personal experience
 - c. identify and consider alternative interpretations of results
4. Use scientific evidence to defend or refute an idea in an historical or contemporary context:
 - a. use relevant scientific information
 - b. analyze the immediate and long-term impact on the individual and/or society in the areas of technology, economics and the environment

Teacher notes:

1. This standard should be paired with Inquiry Standard 2.2 whenever appropriate.
2. Students are encouraged to communicate to an audience outside of the school setting whenever possible.
3. Students must demonstrate basic safety procedures and skills when using tools and equipment.

Sciences 2.3 continued

Understand and apply scientific concepts

Laws of Physics

Understand physics through interactions of matter, forces and energy.

What students should know:

1. Understand the concept of motion (e.g., linear, circular, projectile)
2. Understand the concept of force (e.g., gravitational, electromagnetic, nuclear)
3. Understand laws of conservation (e.g., mass, momentum)
4. Understand concepts of electricity and magnetism (e.g., circuits, semi-conductors, super-conductors)
5. Understand the concepts of waves (e.g., sound, electromagnetic, geometric optics)
6. Understand concepts of energy and work (e.g., thermal, potential/kinetic, thermonuclear)
7. Understand the historical significance of major scientific advances (e.g., Newtonian mechanics, nuclear physics)

What students should do:

1. Identify and formulate questions based on observations and the corresponding scientific concepts
2. Design and conduct investigations using at least two of the following methods:
 - a. Inquiry (e.g., verification, guided, open-ended)
 - b. case study
 - c. service learning (e.g., playground construction)
 - d. field study

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Students may be asked to . . .

- Examine the basic postulates of Special Relativity through a verification inquiry process
- Examine particles and wave duality and design a field study

Sciences 2.4

Understand and apply scientific concepts

Laws of Physics continued

3. Analyze data to support or refute hypotheses:
 - a. select and apply statistical processes
 - b. compare results to scientific theories, current models and/or personal experience
 - c. identify and consider alternative interpretations of results
4. Use scientific evidence to defend or refute an idea in an historical or contemporary context:
 - a. use relevant scientific information
 - b. analyze the immediate and long-term impact on the individual and/or society in the areas of technology, economics and the environment

Teacher notes:

1. This standard should be paired with Inquiry Standard 2.2 whenever appropriate.
2. Students are encouraged to communicate to an audience outside of the school setting whenever possible.
3. Students must demonstrate basic safety procedures and skills when using tools and equipment.

Understand and apply scientific concepts

Environmental Studies

Apply decision-making model(s) to issues involving relationships among the individual, the society, the economy and the environment.

What students should know:

1. Understand factors which precipitate changes in the environment:
 - a. human intervention
 - b. natural phenomena
2. Understand the scientific principles, laws or theories related to specific environmental changes
3. Understand short and long-term impacts of changes in the environment
4. Understand implications of changes in the environment at local, regional and/or global levels

Students may be asked to . . .

- Create an equation that predicts the products of mixing household chemicals and analyze the impact on environmental quality

What students should do:

1. Examine an environmental issue through a case study, service learning opportunity or field study:
 - a. identify relevant scientific principles, theories or laws
 - b. identify relevant social and economic issues
 - c. determine and analyze the costs and benefits of various solutions
 - d. determine the impact of potential solutions on environmental quality
 - e. use evidence to justify a recommended course of action

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Understand and apply scientific concepts

Environmental Studies continued

Teacher notes:

1. This standard should be paired with a standard from Inquiry, People and Cultures, Decision Making or Managing Resources whenever appropriate.
2. Consider choosing issues that can illustrate how local issues can also be global.
3. Students are encouraged to communicate to an audience outside of the school setting whenever possible.
4. Students must demonstrate basic safety procedures and skills when using tools and equipment.

Sciences 2.5 continued

Understand and apply scientific concepts

Technical Systems

Apply knowledge, skills and tools of technological systems to extend human capabilities while preserving ecological functions.

What students should know:

1. Know the scientific principles and elements (inputs, processes, outputs, feedback) of a specific technological system in relationship to a macro-system (e.g., a manufacturing system in relationship to a macro-system such as power and energy)
2. Know basic skills and use of tools related to operating a specific system

What students should do:

1. Create, modify, analyze or troubleshoot a technological system
2. Transfer knowledge of a specific system to create or modify a plan for a macro-system
3. Examine short-term impact on the environment and long-term sustainability

Teacher notes:

1. Suggestions to indicate appropriate level of difficulty and complexity:
 - a. create model of a magnetic bus route system
 - b. design distribution and communication system for a building
 - c. develop a high-mileage vehicle
 - d. construct a solar-powered vehicle
 - e. develop a technological system for a developing country
 - f. develop a magnetic levitation transportation system accommodating the needs of the disabled

Sciences 12.1

Students may be asked to . . .

- Analyze mechanical, fluid, electrical and thermal systems through experiments that vary the inputs, outputs or other processes

people and cultures

Understand interaction between people and cultures

U.S. Citizenship

Understand the foundations, rights and responsibilities of United States citizenship.

What students should know:

1. Understand how the United States government, as established by the Constitution, embodies the principles and ideals of a democratic republic
2. Know the rights and responsibilities of United States citizens and non-citizens
3. Understand the formal and informal structures within which interest groups exercise power
4. Understand the concept of tribal sovereignty and the relationship of sovereignty to treaties and tribal governments of Minnesota-based American Indian Tribes

What students should do:

1. Examine persisting issues involving rights, roles and status of individuals in relation to the general welfare of society
2. Analyze how citizens can affect public policy
3. Observe, analyze and interact with an actual or simulated governmental process

Students may be asked to . . .

- Participate on an advisory council on youth issues and analyze how their decisions affect public policy
- Create an information guide for citizen participation in the government process

people and cultures

Understand interaction between people and cultures

Human Geography

Understand how cultures interact with their environments.

What students should know:

1. Identify the location of major places and geographic features on the surface of the earth
2. Understand the physical and cultural characteristics of places
3. Understand the physical processes that shape patterns (e.g., forests, deserts, oceans) on the earth's surface
4. Understand how movement of cultural characteristics interconnects various places
5. Understand how the physical environment is modified by and modifies human activities

What students should do:

1. Interpret and communicate geographic information through maps and other forms of graphic tools (e.g., air photos, satellite images) and geographic information systems (e.g., generate maps or correlations from information stored by location in databases) or physical landscapes (e.g., changes in local traffic patterns, construction of a mall, reclamation of wetlands)
2. Analyze the effects of alterations on cultural and/or physical landscapes (e.g., changes in local traffic patterns, construction of a mall, reclamation of wetlands)
3. Analyze the relationship between geography and a dispute about land use vs. ownership or political control
4. Analyze the relationship between geography and culture

Students may be asked to . . .

- Determine the feasibility of locating an agricultural site and analyze the effects on the cultural and physical landscape
- Create a section of an atlas for a local site

people and cultures

Understand interaction between people and cultures

Multiple Perspectives

Evaluate events and actions from multiple perspectives.

What students should do:

1. Identify how perspectives influence beliefs, actions and world view
2. Identify how data and experiences may be interpreted differently
3. Identify issues, topics or concepts around which disagreement or ambiguity exists
 - a. describe a point of view concerning the issue
 - b. investigate reasons (e.g., race, class, gender) for identified points of view(s)
 - c. investigate reasons for alternate viewpoints (e.g., race, class, gender)
 - d. analyze how the interpretation of an issue is affected by omitted viewpoints

Students may be asked to . . .

- Read articles about issues facing Latin American countries and identify how perspectives influence beliefs, actions, and world views
- Keep a journal identifying issues facing each culture, examine subjective and objective responses

People and Cultures 4.7

people and cultures

Understand interaction between people and cultures

Institutions and Traditions in Society

Understand the interaction among individuals, groups and institutions.

What students should know:

1. Understand societal concepts (e.g., values, traditions, roles) that influence the interaction among individuals, groups, and institutions in society
2. Understand how societal concepts and institutions develop and change over time
3. Understand that cultural diversity affects conflict and cohesion within and across groups and institutions

What students should do:

1. Examine tension between individuality and conformity
2. Examine how roles, status and social class affect interaction in groups and institutions
3. Describe how institutions change over time
4. Analyze how institutions affect continuity and change

Teacher notes:

Students who conduct social science observations must follow legal and ethical codes of behavior.

Students may be asked to . . .

- Analyze case studies to determine how diverse roles and social class affect interaction in society

People and Cultures 4.8

people and cultures

Understand interaction between people and cultures

Community Service

Understand the relationships between organizations and the communities they serve through direct service or experience.

What students should know:

1. Understand the ramification of selected community or environmental issues, events or services for specific populations
2. Know the purpose and function of public and private organizations and agencies that focus on a selected issue, event or service
3. Understand how agencies determine level of service
4. Know skills needed in specific organizational settings

What students should do:

1. Assess and evaluate the impact of an issue, event, or service on a target population
2. Suggest, apply and evaluate strategies designed to improve the community through direct service or other authentic experience

Teacher notes:

Be prepared to adjust instruction or modify assignments in regard to individual students' abilities, background and values.

Students may be asked to . . .

- Analyze an important health issue and evaluate its impact on members of your community
- Design and participate in a community improvement project

People and Cultures 8.1

decision making

Use information to make decisions

Career Investigation

Evaluate career choices through informed decision making.

What students should know:

1. Understand a variety of career clusters
2. Know attributes and aptitudes needed in particular types of occupations and careers
3. Know how attitudes and behaviors affect climate of a workplace
4. Understand how systems within a workplace affect or interact with systems in the community
5. Understand how systems affect an individual worker

What students should do:

1. Determine personal interest, aptitudes and abilities
2. Establish an explicit career action plan, selecting the program that meets a career/vocational preparation goal
3. Investigate a career through research, internship, mentorship or community service placement
4. Evaluate career choices in relationship to life goals and personal attributes

Teacher notes:

Tasks must include use of appropriate technology.

Students may be asked to . . .

- Identify career strengths, work interests, work values, aptitudes in a self-analysis paper
- Work in an actual setting, volunteer position or school simulated work site and evaluate the appropriateness in relationship to personal goals and attributes

Decision Making 7.1

decision making

Use information to make decisions

Individual and Community Health

Make informed decisions that enhance individual, family and community health.

What students should know:

1. Understand concepts of health promotion and disease prevention that affect adults (e.g., accidents, substance use, sexual responsibility)
2. Understand how public policy influences the health of individuals, family, and community

What students should do:

1. Analyze critical factors in the areas of health care services (e.g., chemical, emotional, and medical treatment options), provider options (e.g., day care, elder care, hospice, services for handicapped) and products;
2. Analyze the effect of culture (e.g., personal background, age, ability), media and/or technology on decisions regarding services and products
3. Analyze how personal behavior and communication (e.g., choice of strategies and skills) impact health maintenance and disease prevention
4. Analyze immediate and long term impact of health decisions
5. Select appropriate response strategies in simulated situations of need or advocacy:
 - a. personal
 - b. family
 - c. community

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Decision Making 8.1

decision making

Use information to make decisions

Individual and Community Health continued

Teacher notes:

1. Tasks should reflect the six priority health behavior areas as defined by the Centers for Disease Control and Prevention.
2. Packages may be written to include tasks for the Decision Making Standards 10.1 and 11.1.

Students may be asked to . . .

- Design commercials for prime time television that promote positive behavioral choices in at least two of the six priority health behaviors
- Design a five-session class to promote conflict-resolution skills

decision making

Use information to make decisions

Emergency Health Care

Make informed decisions in response to health crisis situations for individuals, the family, or the community.

What students should know:

1. Know basic medical terminology, location of major organs and functions of body systems
2. Know proper use of basic medical equipment, procedures and techniques
3. Understand how health crisis or violent situations can be prevented
4. Know legal issues related to crisis intervention

What students should do:

1. Analyze short and long-term consequences of safe, risky and harmful behaviors
2. Develop injury prevention and management strategies for personal, family and community health
3. Demonstrate strategies for preventing and/or solving interpersonal conflicts in simulated situations (e.g., medical emergency, personal crisis, community violence)
4. Given at least two different emergency medical situations:
 - a. analyze and assess injuries
 - b. apply proper emergency care procedures (e.g., airway, breathing, circulation)
 - c. use appropriate medical equipment
 - d. respond appropriately to a variety of emotional reactions (e.g., shock)

Teacher notes:

Include tasks involving at least one trauma (e.g., fractures, bleeding, burns) one medical emergency (asthma, heart attack, choking) and one violence prevention strategy.

Decision Making 8.2

decision making

Use information to make decisions

Occupational Experience

Apply a decision-making process to real-world situations.

What students should know:

1. Know individual career-related strengths, experiences and interests that may affect lifework choices
2. Know current and projected employment outlook in selected career clusters
3. Know skills, technical information, and work relationships regarding a specific job
4. Understand current work-related laws (e.g., OSHA, labor laws, discrimination laws) and how they affect a worker

Students may be asked to . . .

- Analyze and assess injuries in simulated emergencies and apply proper emergency care procedures

Students may be asked to . . .

- Intern in a business setting and evaluate your job performance according to the expectations of the workplace
- Establish a mentor relationship in your field of interest

What students should do:

1. Apply a decision-making process to make short-term and long-term employment choices
2. Create documents for job-seeking and placement
3. Integrate technical knowledge and skills to achieve goals in an employment situation
4. Apply effective problem-solving strategies in employer-employee, co-worker, and customer-client situations
5. Evaluate job performance according to standards and expectations of the workplace and personal job goals

Teacher notes:

1. May be assessed in a simulated or actual work setting.
2. Refer to Minnesota Graduation Standards Benchmarks for decision-making guidelines. For a copy contact the Office of Graduation Standards.

Decision Making 9.1

decision making

Use information to make decisions

Nutrition

Analyze food and nutrition issues that affect personal, family, community, and world well-being.

What students should know:

1. Understand the influence of socio-cultural, political, economic and environmental perspectives on food choices
2. Understand principles of food and nutrition related to the following components:
 - a. food safety
 - b. dietary recommendations
 - c. food preparation practices
 - d. relationship of eating patterns to health
 - e. nutrient and physiology functions within the body

Students may be asked to . . .

- Analyze social, economic and personal factors of a nutritional issue

What students should do:

1. Analyze critical situation factors (e.g., economic, political, personal) affecting food selection patterns
2. Analyze the nutritional consequences of food selection based on relevant evidence
3. Analyze a specific nutritional issue or problem
4. Design, implement, and assess a plan of action

Decision Making 10.1

decision making

Use information to make decisions

Physical Education and Fitness

Apply informed decision-making processes to select appropriate physical activities to achieve fitness.

What students should know:

1. Understand principles of training necessary to improve fitness
2. Know rules and skills associated with physical activities

What students should do:

1. Design and implement a health-enhancing fitness plan:
 - a. establish current levels of cardiovascular fitness, muscular endurance and flexibility
 - b. set cardiovascular, muscular and flexibility goals to improve total body fitness
 - c. select measurement strategies
 - d. identify frequency, intensity, time and types of activities required to meet goals
 - e. analyze impact of goal on cardiovascular system and affected muscle groups
 - f. evaluate reasonableness of maintaining fitness plan over an extended period of time
 - g. evaluate effectiveness of plan on total body fitness
2. Demonstrate knowledge and skills in:
 - a. an aerobic activity
 - b. at least two physical activities

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Students may be asked to . . .

- Evaluate current levels of fitness, set goals for improvement, and determine how to maintain the plan over an extended period of time

Decision Making 11.1

decision making

Use information to make decisions

Physical Education and Fitness continued

Teacher notes:

1. Provide opportunities for students to demonstrate competence by offering a variety of activities,
2. Nationally recognized fitness standards appropriate for age and gender may be used as reference in assessing fitness. For example:
 - a. Physical Best: American Alliance of Health, Physical Education, Recreation and Dance (AAHPERD)
 - b. President's Challenge: President's Council on Physical Fitness
 - c. Fitness Gram: Institute for Aerobic Research

Decision Making 11.1 continued

managing resources

Manage resources for a household, community or government

Economic Systems

Understand how individuals, households, businesses and governments use scarce resources to satisfy unlimited wants and needs.

What students should know:

1. Know the fundamental concepts of microeconomics and macroeconomics

What students should do:

1. Analyze a public issue in terms of production, distribution and consumption
2. Analyze how change in the economy affects individuals, households, business and government
3. Explain how scarcity of productive resources (e.g., human, capital, technological, natural) impacts decisions concerning the production and distribution of goods and services
4. Examine how domestic and global economic systems interact
5. Compare the rules and procedures of different economic systems by examining the effect on:
 - a. supply
 - b. demand
 - c. capital
 - d. prices
 - e. role of institutions (e.g., government, banks, labor unions)

Students may be asked to . . .

- Analyze issues of food shortages in African countries. Make a recommendation for improvement and discuss the impact on the world economy

Managing Resources 4.1

managing resources

Manage resources for a household, community or government

Natural/Managed Systems

Understand the interaction and interdependence of natural and managed systems.

What students should know:

1. Understand natural ecosystems
2. Understand human-managed systems

What students should do:

1. Design, support and communicate a resource management plan involving natural and managed systems:
 - a. understand the biological, physical and human characteristics of the systems
 - b. gather data using appropriate techniques
 - c. identify the nature of the interactive and interdependent relationships
 - d. design an assessment of the environmental impact
 - e. analyze economic and environmental costs and benefits
 - f. present and defend a cost/benefit risk analysis to a jury of peers
 - g. modify the plan based on feedback

Students may be asked to . . .

- Assess the environmental impact of an agricultural innovation by presenting a cost-benefit risk analysis to a panel of student experts

Managing Resources 5.1

managing resources

Manage resources for a household, community or government

Personal Financial Management

Apply the fundamentals of personal financial management through informed decision-making.

What students should know:

1. Understand sound buying principles (e.g., comparison shopping, per unit pricing, price versus quality rationales)
2. Understand issues involved in renting or buying a home
3. Know personal finance terminology
4. Understand insurance options (e.g., life, health, auto)

What students should do:

1. Create plans for major purchases
2. Evaluate personal banking services (e.g., checking accounts, savings accounts) and cash/credit options
3. Analyze a household budget
4. Prepare personal income tax statements
5. Analyze and select investment options (e.g., IRAs, CD's, annuities)

Teacher notes:

1. Tasks should require actual management of finances when possible.
2. Simulations should require students to manipulate unexpected factors which complicate real-life financial management.
3. Tasks must include student's use of appropriate technology.

Students may be asked to . . .

- Prepare tax documents for a complicated real-life financial management situation
- Create an investment plan which includes household budget items, personal savings, and IRA or annuities

Managing Resources 7.1

managing resources

Manage resources for a household, community or government

Business Management

Apply the fundamentals of business management through informed decision-making.

What students should know:

1. Know business management strategies including:
 - a. personnel management procedures
 - b. customer, employee and management practices
 - c. use of banking services
 - d. forms of business organization (e.g., partnership, profit and non-profit organizations)
2. Understand current work-related laws (e.g., OSHA, labor laws, discrimination laws) and how they affect employment

What students should do:

1. Apply the following business management strategies:
 - a. maintain finances of the business
 - b. analyze business expenses/organizational costs including environmental costs
 - c. apply personnel management procedures
 - d. apply human relations strategies
 - e. apply marketing strategies
2. Organize work time around long-term priorities and immediate needs

Teacher notes:

1. Should be assessed in authentic business settings such as school-operated businesses, storefront businesses, internships, or service learning activities.
2. Simulations should include:
 - a. work flow activities
 - b. interaction and interdependence between workers
 - c. use of real products, when possible
 - d. use of technology

Managing Resources 7.2

managing resources

Manage resources for a household, community or government

Financial Systems

Manage financial systems and information.

What students should know:

1. Know basic accounting principles

What students should do:

1. Prepare accounts, ledgers, journals, financial statements and payroll data
2. Conduct financial analysis using mathematical techniques including:
 - a. ratio analysis
 - b. comparative statements analysis
 - c. cost analysis
 - d. trend analysis
3. Create a report based on information obtained from data analysis:
 - a. describe and display data
 - b. analyze effectiveness of past financial actions
 - c. recommend future courses of action based on conclusions of data analysis

Teacher Notes:

Use available accounting software.

Students may be asked to...

- Do an analysis of the buying trends of the businesses in your school district

Managing Resources 7.3

managing resources

Manage resources for a household, community or government

Family Resources

Manage resources in household and work situations.

What students should know:

1. Understand basic economic principles (e.g., supply and demand, scarcity and identification of wants and needs)

What students should do:

1. Analyze the resources needed in household and work situations
2. Manage household financial processes (e.g., using a checkbook, establishing credit, making consumer purchases)
3. Analyze how the use of household and/or business resources are related to broader economic systems
4. Develop a plan to manage household and work-related resources for an extended period of time

Teacher notes:

May use authentic settings, simulated settings or case studies.

Students may be asked to . . .

- Develop a personal management resource plan to monitor expenditures and allocation of resources

Managing Resources 10.1

languages

Communicate in another language

Symbol System of Drafting

Communicate using the world's universal language of drafting.

What students should do:

1. Draw a set of plans applying the universal language used in technical drawing. Project must include use of:
 - a. standard drafting practices and conventions
 - b. appropriate symbols and line types
 - c. appropriate drafting tools and equipment

Teacher notes:

1. Drafting practices and conventions should include but are not limited to angles, projections, exploded views and dimensions.
2. Suggested plans include:
 - a. advanced architecture
 - b. mechanics
 - c. electronics
 - d. electronic schematic diagrams
 - e. computer numerical control (CNC)
 - f. computer-aided drawing (CAD)

Students may be asked to . . .

- Create a set of drawings for manufacturing and production
- Use architectural language to produce a floor plan for a multi-level residence

Languages 12.1

Communicate in another language

World Language

Comprehend and communicate in a language other than English on a broad range of topics.

What students should know:

1. Identify traditions, products or places that a culture recognizes as descriptive of itself
2. Understand how past and present events have contributed to the development of language and culture

What students should do:

1. In a language other than English:
 - a. comprehend complex information (e.g., current events, historical events, literature, art)
 - b. write detailed, in-depth essays or reports
 - c. participate in extended discussions
 - d. analyze information based on criteria used by members of the culture itself

Teacher notes:

1. Tasks should be in the intermediate range on the ACTFL Proficiency Guidelines scale.
2. Students will use all modalities (listening, reading, writing and speaking) appropriate to the language to meet standard.

Students may be asked to . . .

- Participate in an extended discussion on current events
- Write an essay describing how cultural traditions shape group identity

Communicate in another language

World Language in the Workplace

Communicate in a work-related situation in a language other than English.

What students should know:

1. Know relevant vocabulary
2. Know cultural customs pertinent to the product or service to be delivered

What students should do:

1. In a language other than English:
 - a. comprehend complaints, problems, or questions concerning a product or service
 - b. communicate precisely to perform an action or produce a product (e.g., technical procedures, responding to a complaint)
 - c. communicate using appropriate cultural customs (e.g., formal/informal forms of address, personal space)
2. Interpret information from and into a language other than English
3. Perform a service or deliver a product in an actual work setting or mentoring situation

Teacher notes:

1. Tasks should be in the intermediate range on the ACTFL Proficiency Guidelines Scale.
2. Students will use all modalities (listening, reading, writing and speaking) appropriate to the language to meet standard.

Students may be asked to . . .

- Interpret for Spanish speakers in the customer service department of a local business

Communicate in another language

American Sign Language

Comprehend and communicate information in American Sign Language on a broad range of topics.

What students should know:

1. Identify traditions, products or places which deaf culture recognizes as descriptive of itself (e.g. ASL literature, key figures in deaf history)
2. Identify how past and present events have contributed to the development of American Sign Language and culture

What students should do:

1. Comprehend information on current or historical events, literary or artistic topics through video or signed presentations
2. Use signing to communicate in extended discussions and presentations on a broad range of topics
3. Analyze situations or information using criteria important to members of deaf culture

Students may be asked to . . .

- View a news broadcast in American Sign Language and analyze its relevance to the local community

Languages.13.3

Communicate in another language

American Sign Language in the Workplace

Communicate in a work-related situation in American Sign Language.

What students should know:

1. Sign relevant technical vocabulary

What students should do:

1. Use American Sign Language to:
 - a. comprehend simulated complaints, problems or questions concerning the delivery of the product or service
 - b. communicate precise technical procedures required to perform actions or produce a product
2. Communicate using appropriate norms and values of deaf culture
3. Perform service or deliver the product in an actual work setting or mentoring situation

Students may be asked to . . .

- Use American Sign Language to interpret at the city council meeting

Languages 13.4

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March 1, 1996

MINNESOTA DEPARTMENT OF CHILDREN, FAMILIES AND LEARNING
Performance Package
Minnesota Profile of Learning
Content Standard Inquiry 5.1

Student _____

_____ Developmental Level <input checked="" type="checkbox"/> MN Standard Level

Course Agriculture _____

Title of Package/Activity Scientific Experimental Processes

Summary Statement of Content Standard

Apply steps of scientific methods, logical reasoning and creative thinking to answer questions and solve problems.

Description of Student Performances	Performance Record	Achievement Grades/Ratings
Collects and organizes a file of information on a research problem about food, fiber, or renewable resources.	Date: Date:	
Develops a proposal which identifies what the student hopes to accomplish, explains the theoretical basis for the research, and summarizes proposed research procedures.	Date:	
Maintains a data collection log to record exactly what was done during the study.	Date:	
Conducts an analysis of the data collected during the experiment and verifies the results by repeating the experiment, if appropriate.	Date:	
Writes a final report that discusses the problem, hypothesis, data collection, results, statistical analysis, interpretations/conclusions.	Date:	

Circle Final Achievement Grade/Rating:	4 3 2 1
--	---------------

Task Management Skills	Performance Record	TMS Grades/Ratings
Manages time well Stays on task Strives for accuracy		

Key: 4 = Exceeds expectations, approximately "A" work
 3 = Meets expectations, approximately "B" work
 2 = Work has deficiencies or process lacks independence
 1 = Unacceptable or incomplete

Circle Final Task Management Skills Grade/Rating:	4 3 2 1
---	---------------

STUDENT PERFORMANCE TASK 1
Scientific Experimental Process

Standard Code	Level	Topic	Amount of Time
Inquiry 5.1	_____ Developmental MN Standard _____ ✓ _____	Agriculture Inquiry	6-10 hours

Specific Statement(s) from the Standard

What students should do:

1. Identify and formulate a question:
 - a. conduct a literature review
 - b. define a problem
 - c. formulate a hypothesis.

Product

1. A research file of relevant background information
2. A concisely stated research problem
3. A tentative hypothesis

Central Learning

1. Identify and clarify the component parts of a complex task or idea.
2. Use evidence and reasoning to explain and support an idea.

Description of Task

Scientific research will deepen your understanding of a subject through problem-solving. By applying the processes and procedures of scientific research to agriculture, not only are you immersed in an interesting subject, the results may yield benefits to all humans.

This assessment package requires that you conduct a significant research project in agriculture (i.e., food, fiber, or renewable resources). Research can focus on production, processing, or distribution.

Complete the following:

1. Identify a problem or situation that needs to be improved in the field of agriculture (food, fiber, or renewable resources).
For example: Less than adequate numbers of plants per unit area to optimize productivity of the site

Then explain the following:

- a. For whom is the problem "a problem" (That is, who owns the problem)?
For example: The producers (farmer or home gardener).
- b. Who are the stakeholders or actors in the problem?
Farmers or home gardeners, chemical company that produces the seed or other crop protection product used on the crop, seed company, seed salesperson, state or federal regulatory agencies that limit drainage or respond to water quality issues associated with runoff or erosion, advisors (county extension agents, private consultants).
- c. Who or what is being acted upon?
Fact finding relative to poor plant establishment.

STUDENT PERFORMANCE TASK 1 Scientific Experimental Process

Description of Task, continued

d. Who or what would benefit from improvement in the problem?

Who: producers (farmer or home gardener)

*What: consumers (quantity, quality, price of produce or products)
profitability (yield + quality = profitability)*

environment: (insufficient plants per unit could cause increased erosion on a rolling landscape)

How you define the problem will affect what you decide to research.

2. Information can be collected from books, newspapers, magazines, scientific journals, brochures, reports, tape recordings, lectures, and the Internet.

Include interviews with "experts." Look for informed people "in the field" who can help you identify issues and concerns.

At this stage you are collecting, summarizing, and organizing this material in your research file. Later you will use the information to write a review of literature (information) related to your project.

To help you keep track of what's important, keep a chart, list or database for each source that summarizes key issues and indicates the relevance to your research problem.

For example:

Source*	Issue: Environment	Issue: Quality	Issue: Yield

*Author, date, title, source including volume and number, pages.

Carefully document your sources with full citation of written materials as you take notes, make copies, and record interviews.

Develop a hypothesis based on background information, fact finding, and problem identification.

Task Management Skills

Manages time well

Special Notes

Teachers may need to model the analysis of the problem.

Teachers must screen research problems and hypotheses carefully. Students should probably focus their research on a small part of a significant problem to keep the project manageable.

Students should select a research file format that is appropriate for them. Suggested research file formats include notebooks, file boxes, computer databases, etc.

The American Society of Agronomy publishes a Publications Handbook and Style Manual that provides valuable information on writing scientific studies.

STUDENT PERFORMANCE TASK 1
Scientific Experimental Process

Performance Criteria

CHECKLIST FOR RESEARCH PROBLEM, RESEARCH FOLDER, HYPOTHESIS

E=Excellent
 S=Satisfactory
 N=Needs Improvement

<u>Student Evaluation</u>	<u>Research Problem</u>	<u>Teacher Evaluation</u>
_____	The problem is stated precisely.	_____
_____	The problem is sufficiently defined: <ul style="list-style-type: none"> • ownership • stakeholder • subject • beneficiaries. 	_____
_____	The problem has been segmented into researchable units.	_____
_____	The researchable unit defines a project feasible for the student's skills and the resources available.	_____
_____	The problem is significant in the field of agriculture (i.e., food, fiber, or renewable resources).	_____

Research File Background Information

_____	Information is directly related to the research problem: <ul style="list-style-type: none"> • similar scientific studies • current and historical studies • alternative viewpoints about the problem • information about subproblems • interviews with informed people in the field. 	_____
_____	Summary chart, notecards, or database reveals a firm grasp of the problem.	_____
_____	Background information is gathered from authoritative primary and secondary sources.	_____
_____	Information is organized logically for easy access and reading.	_____

Hypothesis

_____	Hypothesis is related to the identified problem or situation in agriculture (i.e., food, fiber, or renewable resources).	_____
_____	Hypothesis is a logical, well-educated prediction based on background research.	_____
_____	Hypothesis is concise, clearly stated and testable.	_____

OVERALL EVALUATION _____

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

STUDENT PERFORMANCE TASK 2

Scientific Experimental Process

Standard Code	Level	Topic	Amount of Time
Inquiry 5.1	<input type="checkbox"/> Developmental <input checked="" type="checkbox"/> MN Standard	Agriculture Inquiry	4-8 hours

Specific Statement(s) from the Standard

What students should do:

1. Identify and formulate a question:
 - d. design an experiment.

Product

Research proposal

Central Learning

1. Use evidence and reasoning to explain and support an idea.
2. Identify and clarify the component parts of a complex task or idea.

Description of Task

After your hypothesis has been approved and you have completed preliminary research about your topic (assessment task #1), you must develop a research proposal.

The proposal is completed before you begin your experiment. It identifies exactly what you hope to accomplish, explains the theoretical basis for your research, and summarizes your proposed research procedures. Your proposal must be typed/word processed and include the following:

1. Theoretical Framework

Write a review of the literature (information) that you gathered in your research file; that is, summarize and explain the relevance of the information you have gathered to your own research problem. This review of the information will provide the theoretical framework for your own study.

2. Research Methods and Techniques (See Quick Review of Experimental Design on page 6)

Describe in detail the methods you will use in your research. Include the following:

- planned experiment (variables, treatments and controls)
- experimental design (layout) and replications
- plans for data collection
- methods of analysis
- necessary materials and equipment.

3. Milestone Chart

Develop a calendar or milestone chart for experiment dates, observation/measurement times, and deadlines.

Task Management Skills

Manages time well

Special Notes

Randomization and replication are two key concepts that students should be able to apply within their experimental design to increase the validity and reliability of their experiments. Teachers may need to mentor students through the process of developing a sound experimental design to reduce biases and variation in the data and increase confidence in the final results.

STUDENT PERFORMANCE TASK 2 Scientific Experimental Process

A Quick Review of Experimental Design: Randomization, Replication Within Your Experiment, and Planning a Sequence of Experiments

Planning the Experiment

Assume you are designing an experiment about the treatment of seeds.

This is your hypothesis: *Appropriate treatment of seeds will improve your germination and emergence and reduce seedling rot.*

You identify two organic seed treatments (Products A, B) and two inorganic treatments (Products C, D). In addition you will need a fifth treatment as your control: an untreated check.

Fig. 1 - Five Treatments for Seeds

Organic Product A	Organic Product B	Inorganic Product C	Inorganic Product D	Untreated seeds (check)
-------------------	-------------------	---------------------	---------------------	-------------------------

Why is Replication Within Your Experiment Important?

To increase the validity of your experiments you will need to replicate (repeat) the 5 treatments shown in figure 1. Replication also increases your validity. If you replicate the 5 different seed treatments at least four times, you will minimize the effects of any unusual situations, such as position, unrelated to your hypothesis about seed treatments.

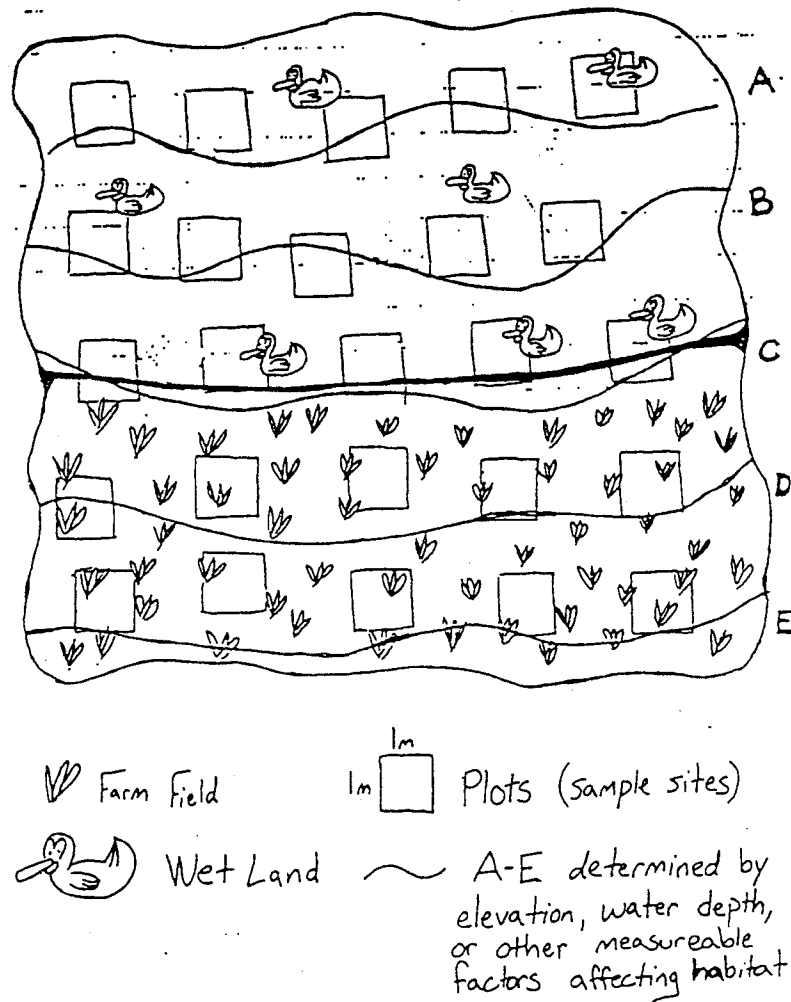
Fig. 2 - Replication of Treatments

Replication	Treatments				
1	Organic Product A	Organic Product B	Inorganic Product C	Inorganic Product D	Untreated (Check)
2	Untreated (Check)	Inorganic Product D	Organic Product B	Organic Product A	Inorganic Product C
3	Untreated (Check)	Organic Product A	Inorganic Product C	Organic Product B	Inorganic Product D
4	Organic Product B	Inorganic Product C	Untreated (Check)	Inorganic Product D	Organic Product A
5	Inorganic Product D	Organic Product A	Untreated (Check)	Inorganic Product C	Organic Product B

STUDENT PERFORMANCE TASK 2 Scientific Experimental Process

Different experiments will require different replication procedures. For example, if you are comparing biodiversity on an agricultural field with a wetland, you will need to collect a variety of biological samples from both the field and the wetland. Your collection or sampling plan might include 4 or 5 sites of an area 1 meter by 1 meter, along parallel lines that are 10 feet apart. The distance between A-E will be determined by elevation, aspect, water depth, or other measurable factors of habitat.

Fig. 3 - Replication Procedure for Collecting Biological Samples From a Field and Adjacent Wetland



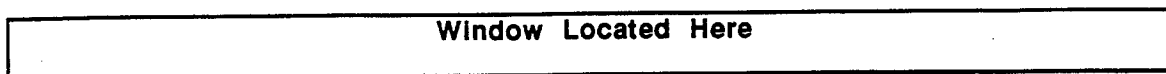
STUDENT PERFORMANCE TASK 2 Scientific Experimental Process

Why is Randomization Important?

Assume that you have decided to replicate your five different seed treatments four times. Line up the seed pots from the seed treatment experiment in front of a window as indicated below:

Fig. 4 - Non-Randomized Treatment Replications

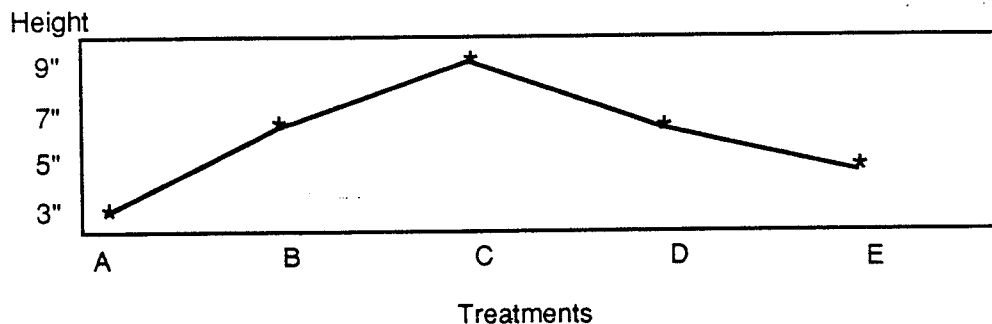
Time and Place of Experiment: Minnesota in March



Replication	Distance from Window	Types of Treatments			
1	1'	Organic Product A	Organic Product A	Organic Product A	Organic Product A
2	3'	Organic Product B	Organic Product B	Organic Product B	Organic Product B
3	5'	Inorganic Product C	Inorganic Product C	Inorganic Product C	Inorganic Product C
4	7'	Inorganic Product D	Inorganic Product D	Inorganic Product D	Inorganic Product D
5	9'	Untreated Seeds (check)	Untreated Seeds (check)	Untreated Seeds (check)	Untreated Seeds (check)

Your graph of plant growth might look like this:

Fig. 5 - Graph of Plant Growth



At first glance, the treatment with Inorganic Product C looks like the most effective. But the seeds closest to the window, which were treated with Organic Product A, were too cold from the air draining down and away from the window to grow well. The seeds farthest from the window, the Untreated Seeds, did not get enough light. Therefore, this growth curve represents the effects of temperature and light variation from the window as well as the effects of the treatments. To minimize the effects of light and temperature on your seed treatment experiments, you will need to randomize within each replication the placement of seeds in relation to the window. You could use random drawings, a random table, or another type of randomization system.

STUDENT PERFORMANCE TASK 2 Scientific Experimental Process

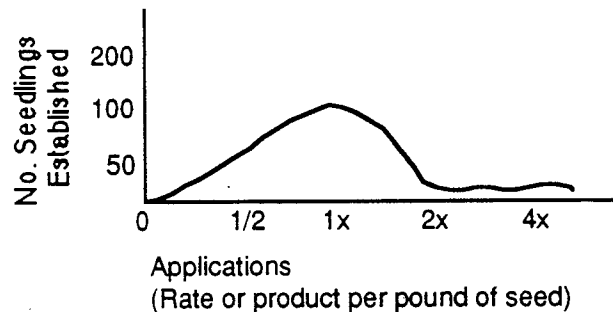
Fig. 6 - Randomized Treatment Replications

Replications	Distance from Window	Types of Treatments				
		1	1'	Organic Product A	Organic Product B	Inorganic Product C
2	3'	Organic Product B	Organic Product A	Untreated Check	Inorganic Product C	Inorganic Product D
3	5'	Inorganic Product D	Inorganic Product C	Untreated Check	Organic Product A	Organic Product B
4	7'	Inorganic Product C	Untreated Check	Organic Product B	Organic Product A	Inorganic Product D

Why May You Need to Plan a Sequence of Experiments?

- Part 1: In the case of the seed treatment project your planned experiment should really be a sequence of experiments. The first part of the experimental process will *identify the products that perform the best*. But if you stop here, you won't know the most effective amounts of the product or frequency of treatment that works best.
- Part 2: Part two of the experimental process will *define the optimum rate/level of treatment among the product(s) that perform the best*.

Fig. 7 - Performance Based on Level of Treatment With Organic Product A



STUDENT PERFORMANCE TASK 2 Scientific Experimental Process

Performance Criteria

CHECKLIST FOR RESEARCH PROPOSAL

E=Excellent
S=Satisfactory
N=Needs Improvement

Student
Evaluation

Review of the Literature

Teacher
Evaluation

_____	Develops a sound theoretical/methodological framework for student's own project, by: <ul style="list-style-type: none"> • summarizing information accurately • explaining the relevance of information to student's own project. 	_____
-------	--	-------

Research Design

_____	Research methods are clearly explained.	_____
_____	Research methods are appropriate for the study: <ul style="list-style-type: none"> • Experimental design <ul style="list-style-type: none"> --variable and controls --randomization --replication --repeatability (as time and resources allow) • Data collection <ul style="list-style-type: none"> --kinds of data --methods (including instrumentation and technology) --times. 	_____

Ethics

_____	Requirements for ethical research are completed and submitted to the appropriate groups.	_____
-------	--	-------

Timeline

_____	Plan establishes experiment dates, observation points, measurement times and other deadlines important to completing the project.	_____
-------	---	-------

Writing

_____	Opening adequately summarizes the proposal.	_____
_____	Organization of ideas makes sense.	_____
_____	The writing is clear and easy to understand.	_____
_____	Technical vocabulary is used correctly.	_____
_____	Words convey what writer intended.	_____
_____	Mechanics are correct: <ul style="list-style-type: none"> • documentation • spelling • punctuation • grammar • capitalization. 	_____

OVERALL EVALUATION _____

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

STUDENT PERFORMANCE TASK 3
Scientific Experimental Process

Standard Code	Level	Topic	Amount of Time						
Inquiry 5.1	<table border="1" style="margin: auto;"> <tr><td>_____</td><td>Developmental</td></tr> <tr><td style="text-align: center;">√</td><td>MN Standard</td></tr> <tr><td>_____</td><td></td></tr> </table>	_____	Developmental	√	MN Standard	_____		Agriculture Inquiry	10-15 hours
_____	Developmental								
√	MN Standard								

Specific Statement(s) from the Standard

What students should do:

2. Gather information:
 - a. applying appropriate instrumentation, analytical techniques, and methodologies
 - b. recording data
 - c. perform an experiment.
3. Handle data:
 - a. apply appropriate data management technology
 - b. select and apply appropriate statistical procedures.

Product

Data experiment and collection log

Central Learning

Systematically apply skills with accuracy and precision to solve problems and/or accomplish a task.

Description of Task

Create a data collection log to record all information about your experiment while it is being conducted. Arrange the log so that you can conveniently calculate sums, medians, and means.

Include the following:

- date and title of experiment
- treatments, variables and controls
- frequency and timing of treatments/collections and observations
- data from unplanned observations
- replications (3-10 as appropriate and affordable).

Task Management Skills

Strives for accuracy
 Stays on task
 Manages time well

STUDENT PERFORMANCE TASK 3
Scientific Experimental Process

Special Notes

Performance Criteria

CHECKLIST FOR DATA COLLECTION LOG

E=Excellent
 S=Satisfactory
 N=Needs Improvement

Student
 Evaluation

Teacher
 Evaluation

_____	All steps in experimental process were followed in the correct sequence: • layout • data collection • use of equipment.	_____
_____	An adequate amount of data was collected for interpretation.	_____
_____	Data was gathered using accepted and ethical scientific research techniques.	_____
_____	Appropriate instrumentation and technology were used to collect data.	_____
_____	Data collection log is well organized and information is clearly presented.	_____

OVERALL EVALUATION _____

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

STUDENT PERFORMANCE TASK 4
Scientific Experimental Process

Standard Code	Level	Topic	Amount of Time				
Inquiry 5.1	<table border="1"> <tr> <td>_____</td> <td>Developmental</td> </tr> <tr> <td>_____</td> <td>MN Standard</td> </tr> </table>	_____	Developmental	_____	MN Standard	Agriculture Inquiry	2-4 hours
_____	Developmental						
_____	MN Standard						

Specific Statement(s) from the Standard

What students should do:

4. Analyze data and make generalizations:
 - a. replicate experiments
 - b. identify and consider alternative interpretations of results
 - f. develop conclusions.

Product

Analysis and replication of the experiment carried out in assessment task #3

Central Learning

1. Systematically apply skills with accuracy and precision to solve problems and/or accomplish a task.
2. Use evidence and reasoning to explain and support an idea.

Description of Task

At this point you have identified a research problem, developed an hypothesis, designed and carried out an experiment, and collected all relevant data and information about the experiment in your data collection log (see assessment tasks 1-3).

Now it is time to determine if your original hypothesis is supported by the data. In order to reach a conclusion about your hypothesis, you must:

1. Analyze the data collected to either accept or reject your hypothesis.
 - a. Construct appropriate data tables and graphs to analyze data.
 - b. Accompany your graphs/tables with a written summary of your conclusions.
2. If appropriate in terms of time, resources, and the scope of your project, repeat your experiment to further validate the hypothesis.
3. Account for possible basis of variability in data contributing to problems in your study.

Task Management Skills

Strives for accuracy
 Manages time well

STUDENT PERFORMANCE TASK 4 Scientific Experimental Process

Special Notes

Students will probably need help with analysis of both qualitative and quantitative data. Remind students:

- that confidence in the hypothesis increase with repeated trials and more samples
- that by interpreting errors and determining that a suspected variable did not change the experiment's results they can gain valuable information
- that results should never be altered to fit a theory.

Performance Criteria

CHECKLIST FOR DATA ANALYSIS

E=Excellent

S=Satisfactory

N=Needs Improvement

Student
Evaluation

Teacher
Evaluation

	Data are presented in clear and easy to understand graphs and tables.	
	The selected method of data analysis is appropriate for the experiment.	
	The experiment was repeated a sufficient number of times.	
	Conclusions accepting or rejecting original hypothesis are supported by data.	
	Alternative interpretations of results are identified and considered.	
	Inconclusive findings and/or limitations of conclusions are identified.	
	Relationship to related scientific research and/or theory is presented.	

OVERALL EVALUATION

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

STUDENT PERFORMANCE TASK 5
Scientific Experimental Process

Standard Code	Level	Topic	Amount of Time						
Inquiry 5.1	<table border="0"> <tr> <td>_____</td> <td>Developmental</td> </tr> <tr> <td>_____</td> <td>MN Standard</td> </tr> <tr> <td>_____</td> <td></td> </tr> </table>	_____	Developmental	_____	MN Standard	_____		Agriculture Inquiry	2 hours
_____	Developmental								
_____	MN Standard								

Specific Statement(s) from the Standard

What students should do:

4. Analyze data and make generalizations:
 - c. formulate new questions based on investigation
 - d. compare findings to theory, experience and current practice
 - e. use evidence to support ideas
 - g. formulate recommendations.
5. Communicate results and conclusions:
 - a. report findings in approved format
 - b. summarize results and conclusions
 - c. report self-reflections and generalizations.

Product

Final written paper that reports the findings of the research project

Central Learning

1. Represent abstract ideas through a written product, visual model, formula, or other accepted means of communication.
2. Use evidence and reasoning to explain and support an idea.

Description of Task

Now that your research is complete, you must develop a written report of the entire project; fortunately you have already completed most of the work (see assessment tasks #1-4). Synthesizing information about your project in one final paper, however, will lead you to think about your work in more complex ways and present your work as a unified whole.

Your paper must be organized as follows (this format is similar to those commonly required for science competitions):

1. Cover page
2. Abstract (a concise summary of the project in 200 words or less):
 - problem
 - hypothesis
 - procedures
 - results
 - conclusions.
3. Table of Contents
4. Introduction:
 - important background information with bibliographic references
 - dependent and independent variables
 - related studies
 - rationale for and purpose of your study.

STUDENT PERFORMANCE TASK 5 Scientific Experimental Process

Description of Task, continued

5. Materials and methods for data collection:
 - methods, conditions and materials used to conduct the study and to collect data.
6. Data analysis:
 - analysis in graph/table form with accompanying written summary.
7. Interpretations and conclusions:
 - major findings, as related to your project goals
 - interpretation of results
 - comparison to other research
 - limitations of research
 - recommendations for further study
 - reactions to and self-reflection about the project.
8. Bibliography

Task Management Skills

Manages time well
Generates goals and plans

Special Notes

- Students may be asked to present their experiment and findings in the form of an exhibit at the University of Minnesota Science Fair. These exhibits should follow the format set forth in the University of Minnesota Science Fair Guidelines.
- Students will need instruction in synthesizing information from previously completed assessment tasks into the final paper. It is recommended that students maintain computer files of previously completed work to make transferring and revising information (e.g., preliminary research, hypothesis, methods and techniques, statistical analysis) easier.
- Teachers may organize in-class revision and editing groups.
- Teachers may provide samples of acceptable final papers for students to use as models.

Performance Criteria

CHECKLIST FOR WRITTEN REPORT

E=Excellent
S=Satisfactory
N=Needs Improvement

<u>Student Evaluation</u>		<u>Teacher Evaluation</u>
	<u>Title Page</u>	
_____	Title page explicitly states significant identifying information about the report (e.g., title of research project, names, dates, class, etc.)	_____
	<u>Abstract</u>	
_____	Abstract is a concise summary of the research project, including: <ul style="list-style-type: none"> • problem • hypothesis • procedures • results • conclusions. 	_____
	<u>Table of Contents</u>	
_____	Sections are listed accurately as they appear in the report.	_____

STUDENT PERFORMANCE TASK 5

Scientific Experimental Process

<u>Student Evaluation</u>		<u>Teacher Evaluation</u>
	<u>Introduction</u>	
_____	Background information is a concise summary of key information the reader needs to understand the research project, such as: <ul style="list-style-type: none"> • related studies and/or theories • variables/controls • rationale for the project • purpose of the project • hypothesis. 	_____
_____	All information that is paraphrased or copied word-for-word is correctly documented.	_____
	<u>Data Collection</u>	
_____	Data collection methods and materials are precisely summarized.	_____
_____	Procedures are described step-by-step and in sufficient detail to allow other researchers to replicate the study.	_____
_____	Specific instrumentation and technology used in the study are identified.	_____
	<u>Data Analysis</u>	
_____	Results of statistical analysis are clearly presented: <ul style="list-style-type: none"> • written summary of key findings • statistical results in graphs and tables. 	_____
	<u>Interpretations and Conclusions</u>	
_____	Interpretations, limited to and based on an analysis of the data, are valid.	_____
_____	Interpretations accept or reject the original hypothesis.	_____
_____	Inconclusive findings and/or limitations of the research are identified.	_____
_____	Relationship to related scientific research and/or theory is presented when appropriate.	_____
_____	Implications of results and recommendations for further study are identified.	_____
_____	Personal reactions to and/or reflections about the research project are summarized.	_____

STUDENT PERFORMANCE TASK 5
Scientific Experimental Process

<u>Student Evaluation</u>		<u>Teacher Evaluation</u>
	<u>Bibliography</u>	
_____	Bibliography is correctly formatted and includes all primary and/or secondary sources.	_____
	<u>Organization and Editing</u>	
_____	Paper is well organized and edited.	_____
_____	Audience-appropriate vocabulary is incorporated and defined when necessary.	_____
	OVERALL EVALUATION	_____

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

Special thanks to Kerry Lindgren and Mike McDaniel from Freshwater Education District (1100 5th Street NE, Suite 2, Staples, MN 56479) for their initial contribution.

MINNESOTA DEPARTMENT OF CHILDREN, FAMILIES AND LEARNING
Performance Package
Minnesota Profile of Learning
Content Standard Inquiry 4.1

Student _____ _____ Developmental Level MN Standard Level

Course Urban Geography Title of Package/Activity Researching a Shopping Location

Summary Statement of Content Standard

Investigate historical artifacts, documents, events or concepts using social science processes.

Description of Student Performances	Performance Record	Achievement Grades/Ratings
Produces a booklet, video or multi-media presentation depicting the history and current nature of a shopping location, as well as issues that confront its continuing development.	Date: Date: Date: Date: Date:	

Circle Final Achievement Grade/Rating:
4 3 2 1

Task Management Skills	Performance Record	TMS Grades/Ratings
Generates goals and plans for achieving Seeks help when needed		
Key: 4 = Exceeds expectations, approximately "A" work 3 = Meets expectations, approximately "B" work 2 = Work has deficiencies or process lacks independence 1 = Unacceptable or incomplete	Circle Final Task Management Skills Grade/Rating:	4 3 2 1

STUDENT PERFORMANCE TASK 1 Researching a Shopping Location

Standard Code	Level	Topic	Amount of Time				
Inquiry 4.1	<table border="1" style="margin: auto;"> <tr> <td style="width: 50px; height: 20px;"></td> <td style="width: 100px; height: 20px;">Developmental</td> </tr> <tr> <td style="text-align: center;">√</td> <td style="text-align: center;">MN Standard</td> </tr> </table>		Developmental	√	MN Standard	Creating a Work Plan	1 week
	Developmental						
√	MN Standard						

Specific Statement(s) from the Standard

What the students should know:

2. Know how to access sources in multiple ways.

What the students should do:

1. Formulate a question about a historical event, issue or interpretation of a concept.
2. Create a plan for collecting and interpreting data.
3. Evaluate research problem for feasibility (e.g., availability and access to data).
4. Gather background information based on survey of related literature from a variety of sources:
 - a. identify key issues
 - b. identify relevant historical and contextual background (e.g., time period, geographic location).

Product

Work plan and feasibility report

Central Learning

Represent abstract ideas through a written product, visual model, formula, or other accepted means of communication.

Description of Task

For this project you will work in groups to research the history and current use of a shopping location. The project includes the following tasks:

- creating a work plan
- mapping land use
- surveying
 - business owners/managers
 - customers
 - architecture and sign usage
- counting
 - traffic flow
 - available parking space
- collecting relevant documents
- creating and presenting the final project.

Your final project will be a booklet, videotape, or multimedia presentation to business owners/managers and interested community members.

Creating a Work Plan

Select a study area that is a shopping location that includes a minimum of six commercial establishments. The size of the study area should depend upon the number of students involved in the project and access to the shopping location. Structure a question that addresses the history of the commercial area, current or present forces that make it successful, major issues that confront its future development, and key individuals involved in the success of the study area.

Before going to the next steps, create a work plan for your project, including obtaining permission from the business community you plan to research, if appropriate. Meet with your teacher to defend the feasibility of your project. If working in groups, all individual tasks must be delineated and approved by the teacher.

STUDENT PERFORMANCE TASK 1

Researching a Shopping Location

Task Management Skills

Generates goals and plans for achieving

Special Notes

This project should be done in groups. Teachers will need to consider how to organize the overall project. One option may be to assign 3-5 students to research a particular location.

The other option is to research in-depth only one location as an entire class. In both cases, teachers should consider how to divide the task.

Performance Criteria

CHECKLIST FOR WORK PLAN

E=Excellent
S=Satisfactory
N=Needs Improvement

Student
Evaluation

Teacher
Evaluation

_____	The research question is clearly defined.	_____
_____	The boundaries of the study are clearly defined.	_____
_____	Study area is accessible for student researchers.	_____
_____	Steps in the project are clearly defined and sequenced.	_____
_____	Roles of team members are clearly defined (if appropriate).	_____

OVERALL EVALUATION _____

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

STUDENT PERFORMANCE TASK 2

Researching a Shopping Location

Standard Code	Level	Topic	Amount of Time
Inquiry 4.1	_____ Developmental MN Standard _____ √	Mapping	1 week

Specific Statement(s) from the Standard

What the students should know:

2. Know how to access sources in multiple ways.

What the students should do:

4. Gather information through observation, interviews, surveys or experiments.
5. Gather background information based on survey of related literature from a variety of sources:
 - a. identify key issues
 - b. identify relevant historical and contextual background (e.g., time period, geographic location).

Product

Set of land use maps showing current and past land uses

Central Learning

Represent abstract ideas through a written product, visual model, formula, or other accepted means of communication.

Description of Task

Create maps for the study area that show current land use and land use prior to commercial development. Maps should conform to standard measures of quality (including TODALSS -Title, Orientation, Date, Author, Legend, Source, and Scale).

1. Secure or draw a base map showing property boundaries of the study area.

Design a key that shows land use patterns in the study area. The key should differentiate among types of commercial use: retail (convenience or regional), office functions, specialized service functions, etc.

For study areas with several floors of commercial activity, floor-specific maps will be necessary.

2. Create a map of current land use:

With a blank base map, walk through the study area taking notes on the map of the land uses in each property. Be careful to discover uses on second floors and/or side entrances. Record the data on the draft copy of your base map. Then create the final map of the current land use.

3. Create a map of prior land use:

Consult with local planning offices or government agencies to find maps or air photographs that show the study area before it was developed as a commercial site. If information is available, construct a land use map based on that data. Use the same patterns and symbols from the current land use map.

Task Management Skills

Generates goals and plans for achieving
Strives for accuracy

STUDENT PERFORMANCE TASK 2

Researching a Shopping Location

Special Notes

Planning reports are available at public libraries or government offices. These reports will provide good models for this kind of assignment.

Performance Criteria

CHECKLIST FOR LAND USE MAPS

E=Excellent
S=Satisfactory
N=Needs Improvement

Student
Evaluation

Teacher
Evaluation

Land Use Maps and Map Design Criteria

_____	Scale is appropriate for information portrayed.	_____
_____	Classifications are appropriate for environment and scale.	_____
_____	Information is clear and complete (TODALSS): <ul style="list-style-type: none"> • Title • Orientation • Date • Author • Legend • Source • Scale. 	_____
_____	Message is neat and clear: <ul style="list-style-type: none"> • avoids unnecessary information • minimizes distortion of information • mappable data is portrayed accurately • mappable data portrayed at appropriate ranges and limits. 	_____
_____	Shading/fill pattern is clear and effective: <ul style="list-style-type: none"> • avoids distortion or optical illusion • tone pattern reproduces well • provides strong contrast between adjacent tones and patterns • most important information is darkest. 	_____
_____	Symbols represent data classifications appropriately: <ul style="list-style-type: none"> • pictorial symbols are closely related to the idea represented • symbols are simple and uncluttered • symbols enlarge, reduce, and reproduce clearly. 	_____

OVERALL EVALUATION _____

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

STUDENT PERFORMANCE TASK 3 Researching a Shopping Location

Standard Code	Level	Topic	Amount of Time
Inquiry 4.1	<hr style="width: 50px; margin: 0 auto;"/> Developmental <hr style="width: 50px; margin: 0 auto;"/> MN Standard	Creating and Administering a Survey	Several weeks

Specific Statement(s) from the Standard

What the students should know:

1. Know primary research techniques:
 - a. surveys
 - b. structured and unstructured interviews
 - c. observations
 - d. questionnaires.

What the students should do:

1. Formulate a question about a historical event, issue or interpretation of a concept.
2. Create a plan for collecting and interpreting data.
4. Gather information through observation, interviews, surveys or experiments.
6. Discuss research findings:
 - a. describe issues
 - c. present primary data
 - d. identify bias and context of data or findings
 - f. examine limitations of the investigation, research process or findings
 - g. formulate possibilities for further research.

Product

1. Set of survey questions
2. Tabulation of survey results in chart form
3. Analysis of a survey administered by the students to the managers/owners of the businesses of the study area

Central Learning

Gather information by framing initial questions, listening to responses, and immediately developing further questions to probe for relevant information.

Description of Task

Part 1 - Create and Administer Survey Questionnaire

1. Brainstorm potential issues confronting business managers/owners (if possible, involve a business person in these sessions).
2. After issues/topics are determined, specific questions should be developed that relate to those general issues/topics. Questionnaires should take no longer than 15 minutes to administer.
3. Questions should be sequenced in a logical order.
4. Practice administering the questions to your classmates.
5. Test your questionnaire by interviewing business people outside the study area to determine if the questions are clear. Revise questions as necessary.
6. Administer the questionnaire in the study area. Ask your teacher to notify local peace officers and business associations that students are conducting a class project.
7. Inform your teacher of any problems you encounter so that you can develop alternative strategies if some managers/owners are unwilling to cooperate.

STUDENT PERFORMANCE TASK 3
Researching a Shopping Location

Description of Task, continued

Part 2 - Tabulate and Analyze Results

1. Tabulate the results of the survey and display in chart form.
2. Categorize responses into patterns that relate to general issues/topics surveyed.
3. Make tentative generalizations.

Part 3 - Evaluating Survey

1. Evaluate the limitations of the survey:
 - biases
 - omitted questions
 - unavailable/unwilling participants.
2. Discuss additional information discovered unintentionally.
3. Identify questions that proved to be unanswerable. These questions may be good topics for next year's class.

Task Management Skills

Seeks help when needed
Generates goals and plans for achieving

STUDENT PERFORMANCE TASK 3 Researching a Shopping Location

Special Notes

Mail surveys and self-administered questionnaires are not advised because of expense and low return rates.

Performance Criteria

CHECKLIST FOR TASK SURVEY QUESTIONNAIRE

E=Excellent
S=Satisfactory
N=Needs Improvement

Student
Evaluation

Teacher
Evaluation

Survey Questions

_____	Questions relate to the topic.	_____
_____	The questionnaire is short.	_____
_____	Questions are concise.	_____
_____	Questions say precisely what you mean.	_____

Data Analysis

_____	Categories of data relate to the survey issues.	_____
_____	Summary of data is in appropriate chart form.	_____
_____	Summary statement includes: <ul style="list-style-type: none"> • accurately identified patterns of responses • generalizations supported by data. 	_____

Evaluation of Survey

_____	Biases are identified clearly.	_____
_____	Gaps in information are clearly acknowledged.	_____
_____	Unexpected information is recorded and its relevance is determined.	_____

OVERALL EVALUATION

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

STUDENT PERFORMANCE TASK 4 Researching a Shopping Location

Standard Code	Level	Topic	Amount of Time						
Inquiry 4.1	<table border="0"> <tr> <td style="border: none;">_____</td> <td style="border: none;">Developmental</td> </tr> <tr> <td style="border: none; text-align: center;">√</td> <td style="border: none;">MN Standard</td> </tr> <tr> <td style="border: none;">_____</td> <td style="border: none;"></td> </tr> </table>	_____	Developmental	√	MN Standard	_____		Measuring Traffic Flow	One or two weeks
_____	Developmental								
√	MN Standard								

Specific Statement(s) from the Standard

What students should know:

1. Know primary research techniques:
 - a. surveys
 - b. structured and unstructured interviews
 - c. observations
 - d. questionnaires
2. Know how to access sources in multiple ways.

What students should do:

4. Gather information through observation, interviews, surveys or experiments.

Product

Vehicle and pedestrian traffic flow map

Central Learning

Reflect on various levels of information, identify underlying assumptions, and perceive relationships that make sense out of our world.

Description of Task

Create a flow map to show vehicle and pedestrian traffic. Consult local planning agencies to determine if this information already exists. If it is available, do not conduct another survey.

If information is not available, use the following procedures:

1. Using the base map, locate key access points in the study area. Station members of your group at key access points during rush hour. Ideally, you will be equipped with mechanical counters. Count cars throughout the rush periods (mornings, evenings, and weekends). Look for evidence of any traffic congestion.
2. Repeat step one during off-peak hours.
3. Individual student counts should be collected and mapped.
4. Repeat steps 1-3 for pedestrians.
5. Write a brief analysis (approximately 300 words) of traffic flows.

Task Management Skills

Strives for accuracy
Follows safety rules

STUDENT PERFORMANCE TASK 4 Researching a Shopping Location

Special Notes

Rush periods may vary according to the day of the week. For example, the Friday afternoon rush may begin at 3:00 p.m. in contrast to the weekday rush that begins at 4:00 p.m. Therefore, students may need to count cars on different days as well as at different times of the day. You may wish to specify the number of days students need to count cars to get an adequate sample.

Performance Criteria

CHECKLIST FOR VEHICLE AND PEDESTRIAN TRAFFIC FLOW MAP

E=Excellent
S=Satisfactory
N=Needs Improvement

Student
Evaluation

Teacher
Evaluation

Map Design

_____	Information is clear and complete (TOTALSS):	_____
	<ul style="list-style-type: none"> • Title • Orientation • Date • Author • Legend • Source • Scale. 	
_____	Message is neat and clear:	_____
	<ul style="list-style-type: none"> • avoids unnecessary information • minimizes distortion of information • mappable data is portrayed accurately • mappable data portrayed at appropriate ranges and limits. 	
_____	Shading/fill Pattern is clear and effective:	_____
	<ul style="list-style-type: none"> • avoids distortion or optical illusion • tone pattern reproduces well • provides strong contrast between adjacent tones and patterns • most important information is darkest. 	
_____	Symbols represent data classifications appropriately:	_____
	<ul style="list-style-type: none"> • pictorial symbols are closely related to the idea represented • symbols are simple and uncluttered • symbols enlarge, reduce, and reproduce clearly. 	
_____	Analysis identifies potential shoppers and traffic congestion.	_____

OVERALL EVALUATION _____

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

STUDENT PERFORMANCE TASK 5
Researching a Shopping Location

Standard Code	Level	Topic	Amount of Time				
Inquiry 4.1	<table border="1"> <tr> <td>_____</td> <td>Developmental</td> </tr> <tr> <td>_____</td> <td>MN Standard</td> </tr> </table>	_____	Developmental	_____	MN Standard	Survey of Available Parking Spaces	One week
_____	Developmental						
_____	MN Standard						

Specific Statement(s) from the Standard

What students should know:

1. Know primary research techniques:
 - a. surveys
 - b. structured and unstructured interviews
 - c. observations
 - d. questionnaires.
2. Know how to access sources in multiple ways.

What students should do:

4. Gather information through observation, interviews, surveys or experiments.

Product

Map of available parking spaces for the study area

Central Learning

Reflect on various levels of information, identify underlying assumptions, and perceive relationships that make sense out of our world.

Description of Task

Create a map of available parking spaces for the study area. On a draft land use map, identify all potential parking spaces. Include on-street spots as well as parking lots. Take the map into the field to count spots. Record your observations on the land use maps.

Consult your local planning office to determine if there are parking requirements for commercial establishments specified in the zoning code. If such specifications exist, compare existing places with the numbers required to determine if there exists a parking shortage.

If possible, compare information from surveys with your own observations.

Task Management Skills

Seeks help when needed
 Strives for accuracy
 Follows safety rules

STUDENT PERFORMANCE TASK 5 Researching a Shopping Location

Special Notes

The student's summary statement of observations and survey data should clearly identify any existing problems.

Performance Criteria

CHECKLIST FOR TASK PARKING SURVEY

E=Excellent
S=Satisfactory
N=Needs Improvement

Student
Evaluation

Teacher
Evaluation

Map Design

_____	Information is clear and complete (TODALSS):	_____
	<ul style="list-style-type: none"> • Title • Orientation • Date • Author • Legend • Source • Scale. 	
_____	Message is neat and clear:	_____
	<ul style="list-style-type: none"> • avoids unnecessary information • minimizes distortion of information • mappable data is portrayed accurately • mappable data portrayed at appropriate ranges and limits. 	
_____	Shading/fill pattern is clear and effective:	_____
	<ul style="list-style-type: none"> • avoids distortion or optical illusion • tone pattern reproduces well • provides strong contrast between adjacent tones and patterns • most important information is darkest. 	
_____	Symbols represent data classifications appropriately:	_____
	<ul style="list-style-type: none"> • pictorial symbols are closely related to the idea represented • symbols are simple and uncluttered • symbols enlarge, reduce, and reproduce clearly. 	
_____	Analysis is based on observations and comparisons.	_____
_____	Analysis clearly identifies problems, if they exist.	_____
_____	Comparison of perceived parking availability with observed parking availability is clear and accurate.	_____

OVERALL EVALUATION _____

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

STUDENT PERFORMANCE TASK 6 Researching a Shopping Location

Standard Code	Level	Topic	Amount of Time
Inquiry 4.1	_____ Developmental MN Standard _____ √	Photo Essay	One week

Specific Statement(s) from the Standard

What students should know:

1. Know primary research techniques:
 - a. surveys
 - b. structured and unstructured interviews
 - c. observations
 - d. questionnaires.
2. Know how to access sources in multiple ways.

What students should do:

4. Gather information through observation, interviews, surveys or experiments.

Product

A photo essay that illustrates building types and signage patterns in the study area

Central Learning

Reflect on various levels of information, identify underlying assumptions, and perceive relationships that make sense out of our world.

Description of Task

Upon completing the land use survey, return to the study area with recording devices. Select representative and unusual examples of building design and signage (sign placement and design) to be recorded.

Create a photo essay that illustrates building types and signage patterns in the study area. Students without cameras should be equipped with one disposal camera with 36 exposures. Alternatively, students may make sketches, videotapes or use the school's zapshot camera.

Images should be categorized, captioned, and sequenced. The captions should include a brief statement about the image and its relationship to the study area.

Task Management Skills

Generates goals and plans for achieving

STUDENT PERFORMANCE TASK 6
Researching a Shopping Location

Special Notes

--

Performance Criteria

CHECKLIST FOR PHOTO ESSAY

E=Excellent
S=Satisfactory
N=Needs Improvement

Student
Evaluation

Teacher
Evaluation

_____	Images are legible.	_____
_____	Captions are complete and connected to the study area: <ul style="list-style-type: none">• identifies the location• explains how it relates to the study area.	_____
_____	A variety of visual perspectives are included.	_____
_____	Categories developed show an understanding of the nature and issues of the study area.	_____

OVERALL EVALUATION _____

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

STUDENT PERFORMANCE TASK 7

Researching a Shopping Location

Standard Code	Level	Topic	Amount of Time						
Inquiry 4.1	<table border="1" style="margin: auto;"> <tr> <td style="text-align: center;">_____</td> <td style="text-align: center;">Developmental</td> </tr> <tr> <td style="text-align: center;">√</td> <td style="text-align: center;">MN Standard</td> </tr> <tr> <td style="text-align: center;">_____</td> <td></td> </tr> </table>	_____	Developmental	√	MN Standard	_____		Surveying Shoppers	Three weeks
_____	Developmental								
√	MN Standard								

Specific Statement(s) from the Standard

What students should know:

1. Know primary research techniques:
 - a. surveys
 - b. structured and unstructured interviews
 - c. observations
 - d. questionnaires.

What students should do:

4. Gather information through observation, interviews, surveys or experiments.

Product

Shopper's Survey

Central Learning

Receive information from a client, employer, or audience, connect the information with a body of knowledge, and respond appropriately.

Description of Task

Part 1 - Create and Administer Survey Questionnaire

1. Brainstorm potential issues confronting shoppers (if possible, involve a business person in these sessions).
2. After issues/topics are determined, specific questions should be developed that relate to those general issues/topics. Questionnaires should take no longer than 5 minutes to administer.
3. Questions should be sequenced in a logical order.
4. Practice administering the questions to your classmates.
5. Test your questionnaire by interviewing a business person or shopper outside the study area to determine if the questions are clear. Revise as necessary.
6. Administer the questionnaire in the study area. Ask your teacher to alert local peace officers and business associations that students are conducting a class project. Obtain permission from the business managers/owners to question shoppers in or near their stores.
7. Inform your teacher of any problems you encounter. Work with your teacher to develop alternative strategies if some managers/owners are unwilling to cooperate.

STUDENT PERFORMANCE TASK 7
Researching a Shopping Location

Description of Task, continued

Part 2 - Tabulate and Analyze Results

1. Tabulate results of the survey.
2. Create a chart of survey results. Categorize responses into patterns that relate to the general issue/topics surveyed.
3. Make tentative generalizations.

Part 3 - Evaluating Survey

1. Evaluate the limitations of the survey:
 - biases
 - omitted questions
 - unavailable/unwilling participants.
2. Discuss additional information discovered unintentionally.
3. Identify interesting questions that proved to be unanswerable at this time. These questions may be great topics for next year's class.

Task Management Skills

Demonstrates respect for others
Seeks help when needed

**STUDENT PERFORMANCE TASK 7
Researching a Shopping Location**

Special Notes

Performance Criteria

CHECKLIST FOR SHOPPER'S SURVEY

E=Excellent
S=Satisfactory
N=Needs Improvement

Student
Evaluation

Teacher
Evaluation

Survey Questions

_____	Questions relate to the topic.	_____
_____	The questionnaire is short .	_____
_____	The wording is concise.	_____
_____	Questions say exactly what you mean.	_____
_____	Questions are logically sequenced.	_____
_____	Questions yield desired information.	_____

Data Analysis

_____	Categories relate to survey issues.	_____
_____	Summary of data is in appropriate chart form.	_____
_____	Analysis of data provides useful information: <ul style="list-style-type: none"> • accurately identifies patterns of responses from survey • supports generalizations with data and logical reasons 	_____

Evaluation of Survey

_____	Biases are identified clearly.	_____
_____	Gaps in information are clearly acknowledged.	_____
_____	Unexpected information is recorded and its relevance is determined.	_____

OVERALL EVALUATION

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

STUDENT PERFORMANCE TASK 8

Researching a Shopping Location

Standard Code	Level	Topic	Amount of Time				
Inquiry 4.1	<table border="1" style="margin: auto;"> <tr> <td style="width: 50px; height: 20px;"></td> <td style="width: 50px; height: 20px;">Developmental</td> </tr> <tr> <td style="text-align: center;">√</td> <td style="text-align: center;">MN Standard</td> </tr> </table>		Developmental	√	MN Standard	Collecting Documents and Artifacts	Throughout the project
	Developmental						
√	MN Standard						

Specific Statement(s) from the Standard

What students should know:

1. Know primary research techniques:
 - a. surveys
 - b. structured and unstructured interviews
 - c. observations
 - d. questionnaires.
2. Know how to access sources in multiple ways.

What students should do:

4. Gather information through observation, interviews, surveys or experiments.
5. Gather background information based on survey of related literature from a variety of sources:
 - a. identify key issues
 - b. identify relevant historical and contextual background (e.g., time period, geographic location).

Product

Collection of documents, artifacts or replicas

Central Learning

1. Use evidence and reasoning to explain and support an idea.
2. Reflect on various levels of information, identify underlying assumptions, and perceive relationships that make sense out of our world.

Description of Task

Find material artifacts or replicas relevant to the history of the shopping location you are studying. Look for historic photographs, maps, and descriptions of the study area. Other artifacts might include inventory lists, sample products, advertisements, decorative materials or furnishings.

Photograph or photocopy artifacts if you are unable to obtain originals.

When you collect an artifact or replica, it is important to describe it, date it, and explain how and when you obtained it.

Historical societies, planning agencies, government administrative offices, local businesses, newspapers or libraries may be good sources of artifacts that you may copy or photograph.

Task Management Skills

Demonstrates respect for others
 Uses resources appropriately
 Seeks help when needed

STUDENT PERFORMANCE TASK 8

Researching a Shopping Location

Special Notes

In this task, photographs, maps, or other historical artifacts may reveal the reasons the site was developed. Teachers should help students see clues to the future development from the past landscape. For example, a 1953 topographic map showed railroad switch yards. Later, the area was developed into a large scale manufacturing site. The use of the 1953 map enabled the teacher and student to explain why a large parcel of land was available for development when all surrounding parcels were built up.

Students may only find one or two relevant artifacts. The issue in this task is not quantity.

Performance Criteria

CHECKLIST FOR DESCRIPTION OF ARTIFACTS

E=Excellent
S=Satisfactory
N=Needs Improvement

Student
Evaluation

Teacher
Evaluation

_____	Descriptions of historical artifacts are detailed and complete, including: <ul style="list-style-type: none"> • appearance • use • location • dates • source (how and when obtained). 	_____
-------	--	-------

_____	Relevance of artifacts to the shopping location is explained.	_____
-------	---	-------

OVERALL EVALUATION	_____
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Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

STUDENT PERFORMANCE TASK 9
Researching a Shopping Location

Standard Code	Level	Topic	Amount of Time						
Inquiry 4.1	<table border="1" style="margin: auto;"> <tr> <td style="text-align: center;">_____</td> <td style="text-align: center;">Developmental</td> </tr> <tr> <td style="text-align: center;">_____</td> <td style="text-align: center;">MN Standard</td> </tr> <tr> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> </tr> </table>	_____	Developmental	_____	MN Standard	_____	_____	Producing the Final Project	Three weeks
_____	Developmental								
_____	MN Standard								
_____	_____								

Specific Statement(s) from the Standard

What students should do:

6. Discuss research findings:
 - a. describe issues
 - b. describe the findings from survey of literature
 - c. present primary data
 - d. identify bias and context of data or findings
 - e. examine how the time period and location of data source affect the data
 - f. examine limitations of the investigation, research process or findings
 - g. formulate possibilities for further research.

Product

A booklet, video, or multimedia presentation that depicts the history and nature of the shopping location as well as issues confronting its development.

Central Learning

1. Represent abstract ideas through a written product, visual model, formula, or other accepted means of communication.
2. Reflect on various levels of information, identify underlying assumptions, and perceive relationships that make sense out of our world.

Description of Task

Produce a booklet, video, or multimedia presentation that depicts the history and nature of the shopping location, as well as analyzing issues that confront its continuing development. Your final product should be high quality, so choose a format that you can do well. You will present your final product to the appropriate members of your community. Include the following:

Part 1 - History of the Location

Describe the history of the location prior to commercial development. Include the events or trends leading to commercial development. Place the history of the location in a larger context, such as developments in the state, nation or world. For example, consider changes in the economy, technological shifts, or migration patterns.

Part 2 - Present Land Use

Describe the physical appearance and location of the shopping area in sufficient detail for a reader/audience unfamiliar with the area. Include:

1. The nature of the businesses conducted in the location:
 - why the businesses are there
 - whom they serve
 - plans for the future.
2. Attitudes of shoppers using the location:
 - why they shop there
 - what they like
 - what they dislike
 - what they think the future of the area should be.

STUDENT PERFORMANCE TASK 9 Researching a Shopping Location

Description of Task, continued

3. Trends in the commercial community:
 - major problems
 - likely future.
4. Architectural style and signage
5. Any significant or unusual variations in the business or shopping community; for example, a large number of coffee shops
6. How the location affects the success of the commercial ventures in the study area; for example, how accessibility for pedestrians and vehicles affects the businesses in the shopping location.

Part 3 - Future Land Use

Your analysis of future land use should convincingly describe:

- the issues confronting the businesses in the shopping location
- findings from primary and secondary research
- possibilities for future land use
 - reasons
 - pros
 - cons
 - alternatives
- biases in the data and research
- other limitations of the research
- possibilities for future study.

Task Management Skills

Keeps trying
Accepts suggestions and criticism

Special Notes

You can find a variety of products (multimedia, booklet, or video).

STUDENT PERFORMANCE TASK 9 Researching a Shopping Location

Performance Criteria

CHECKLIST FOR BOOKLET, VIDEO, OR MULTIMEDIA PRESENTATION

E=Excellent
S=Satisfactory
N=Needs Improvement

Student
Evaluation

Teacher
Evaluation

Past Land Use

_____ Description of land use prior to commercial development is sufficiently detailed for a reader/audience unfamiliar with the location and its history. _____

_____ Description of past land use places the location in a geographic and historical context. _____

Present Land Use

_____ The description of the present land use is sufficiently detailed for a reader/audience unfamiliar with the area, including:

- the physical appearance and location of the shopping area
- the nature of the business conducted in the location
 - why the businesses are there
 - whom they serve
 - any significant or unusual variations in the shopping community.

_____ Analysis of the relationship between location and commercial success is supported by evidence from the research. _____

Future Land Use

_____ Possibilities for future land use are supported by the research, including:

- attitudes of shoppers using the location
- documented trends in the commercial community.

_____ Areas for future research are identified. _____

Quality of Product

_____ Text (or sound) and visual images are integrated to create a coherent message. _____

_____ The product applies the appropriate principles of media aesthetics. _____

_____ The product uses text and images effectively:

- to convey information
- to present a convincing message.

_____ The product meets the needs of the target audience. _____

OVERALL EVALUATION _____

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

MINNESOTA DEPARTMENT OF CHILDREN, FAMILIES AND LEARNING
Performance Package
Minnesota Profile of Learning
Content Standard Inquiry G8.1

Student _____ Developmental Level _____ MN Standard Level

Course Science Title of Package/Activity Bartholomew's Question

Summary Statement of Content Standard

Gather information to answer scientific or social-science questions.

Description of Student Performances	Performance Record	Achievement Grades/Ratings
Designs, conducts and reports on an experiment using standard scientific methods and procedures.	Final evaluation:	

Circle Final Achievement Grade/Rating: 4 3 2 1

Task Management Skills	Performance Record	TMS Grades/Ratings
Strives for accuracy Keeps trying Generates goals and plans for achieving Follows safety rules		

Key: 4 = Exceeds expectations, approximately "A" work
 3 = Meets expectations, approximately "B" work
 2 = Work has deficiencies or process lacks independence
 1 = Unacceptable or incomplete

Circle Final Task Management Skills Grade/Rating: 4 3 2 1

STUDENT PERFORMANCE TASK 1
Bartholomew's Question

Standard Code	Level	Topic	Amount of Time
Inquiry G8.1	<input checked="" type="checkbox"/> Developmental <input type="checkbox"/> MN Standard	Experimental Inquiry	2-3 classroom periods

Specific Statement(s) from the Standard

What students should do:

1. Gather information from direct observations:
 - a. frame a question
 - b. collect and record data
 - c. display data in appropriate format (e.g., graphs, tables, charts, diagrams)
 - d. look for patterns in observable data
 - e. relate findings to new situations or large group findings
 - f. answer question or present position using data
 - g. identify areas for further investigation.

Product

Laboratory notebook

Central Learning

Use evidence and reasoning to explain and support an idea.

Description of Task

1. In your laboratory notebook write down what you know about solids and liquids and then make a list of properties of each. If you are working with a group, discuss these and reach an agreement on a list that reflects your best thinking.
2. Your task is to determine if a substance is a solid or a liquid, a new kind of solid or liquid, or both. Your instructor will show you the materials available and point out their location. If you think of experiments but need additional equipment, ask your instructor for help. You are to follow all standard laboratory safety procedures.

Each time you investigate the substance, make three entries in your notebook: 1) Question (the current question that you are investigating); 2) Method (what is done to answer the question, including laboratory safety considerations, and materials used); and 3) Result (what was observed, measured). Continue this sequence of Question-Method-Result (QMR), making sure to keep complete records each time until you have completed your investigation into this substance.

At the end of your investigation write a conclusion.

3. The substance to be investigated consists of a white solid and water. Mix 2-3 teaspoons of this white solid with water. Stir, as water is added with a medicine dropper. This mixture should flow when the container is tipped on its side.

Task Management Skills

Strives for accuracy
 Keeps trying
 Generates goals and plans for achieving
 Follows safety rules

STUDENT PERFORMANCE TASK 1 Bartholomew's Question

Special Notes

Materials: Equipment requirements will vary depending on your situation, what you want to emphasize in the work, and how creative an investigation that students make. What follows is a general list of materials. You may add to or modify them.

Starch suspension*, stirring rods, medicine droppers, scissors, variety of beakers or other containers, safety goggles, heat; tongs, waxed paper or plastic lids, liquids (vegetable oils, vinegar, food coloring, etc.), solids (salt, baking soda, flour, etc.), ice cubes, teaspoons, magnifiers, metric rulers.

*(2-3 spoonfuls of corn starch to which water is carefully added with a medicine dropper while stirring OR 70 g soluble starch (corn starch) in about 60 mL water OR 1 box corn starch in about 1 cup of water. Regardless of the method used, the mixture should flow when the container is tipped on its side. This mixture is often colored with food coloring. It is recommended that you don't do that.)

Questions: Students may have some, especially at the outset. Provide encouragement for students self-discovery. Answer questions by returning students to the research question, what they know about science, and the laboratory work (watch for safe laboratory practices). You may need to help students find strategies to make best use of both the materials at hand and their team members.

Groups: Many times scientists cooperate with each other in their work. Modern science often involves a considerable team work. Students can work together to solve this puzzle. The puzzle students are given is "simple" but surprisingly rich in opportunities for investigation, individual/group creativity, and thinking about concepts. Chemists define substances on the basis of an accumulation of observable properties and this is the students' task in this assessment. Groups of 2-3 are recommended. However, each student should complete his or her own notebook.

Time: This investigation should take 2-3 periods. If it is extended, the time taken from other classroom work should be minimal and used for observations. If you have students who want to pursue a more ambitious research agenda perhaps this can be done before or after school. Certainly you want to encourage students to do further research.

References:

GEMS Lawrence Hall of Science - University of California-Berkeley, *Oobleck: What Do Scientists Do?* (1986)

O. Phanstiel, "An Invitation to Experiment with an Experiment," *J. Chemical Education*, (1985), 62:522-524. (Mr. Phanstiel, a high school teacher in Florida, devised the Question-Method-Results investigation system).

Dr. Seuss, *Bartholomew and the Oobleck*, (New York: Random House, 1949).

J. Walker, "The Amateur Scientist: Serious Fun with Polyox, Silly Putty, Slime and Other Non-Newtonian Fluids," *Scientific American*, (November, 1978), 186-196.

**STUDENT PERFORMANCE TASK 1
Bartholomew's Question**

Performance Criteria

CHECKLIST FOR TASK 1

E=Excellent
S=Satisfactory
N=Needs Improvement

Student
Evaluation

Teacher
Evaluation

Experiments

_____ Questions that are testable are generated from the list of properties. _____

_____ The experimental procedure(s) can be replicated. _____

Observations

_____ Observations are qualitatively accurate. _____

_____ Observations are quantitatively accurate. _____

_____ Observations use appropriate laboratory tools. _____

Materials and Laboratory Safety

_____ A complete list of materials used is provided. _____

_____ Laboratory safety procedures are recorded and fully observed. _____

Data

_____ Data are accurately recorded. _____

_____ Any measurements are recorded within the limits of the equipment used. _____

_____ Repeated measurements are taken. _____

Variables

_____ An appropriate independent (input or manipulated) variable is identified. _____

_____ An appropriate dependent (output or responding) variable is identified. _____

_____ The independent variable is controlled. _____

Conclusion

_____ Scientific concepts are used accurately. _____

_____ Potential sources of error and suggestions for reducing them are included. _____

_____ The data table is complete and accurate. _____

_____ The conclusion is supported by the evidence collected. _____

_____ The analysis makes use of all the data collected. _____

_____ The question which can be used to focus a future investigation is thoughtful and related to the current work. _____

OVERALL EVALUATION _____

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

Special thanks to Brian Harris and Cheryl Utecht from Dover-Eyota (615 South Avenue, Eyota, MN 55934) for their initial contribution.

MINNESOTA DEPARTMENT OF CHILDREN, FAMILIES AND LEARNING
Performance Package
Minnesota Profile of Learning
Content Standard Inquiry G8.1

Student _____ Developmental Level _____ MN Standard Level

Course Science Title of Package/Activity Bartholomew's Question

Summary Statement of Content Standard

Gather information to answer scientific or social-science questions.

Description of Student Performances	Performance Record	Achievement Grades/Ratings
Designs, conducts and reports on an experiment using standard scientific methods and procedures.	Final evaluation:	

Circle Final Achievement Grade/Rating: 4 3 2 1

Task Management Skills	Performance Record	TMS Grades/Ratings
Strives for accuracy Keeps trying Generates goals and plans for achieving Follows safety rules		

Key: 4 = Exceeds expectations, approximately "A" work
 3 = Meets expectations, approximately "B" work
 2 = Work has deficiencies or process lacks independence
 1 = Unacceptable or incomplete

Circle Final Task Management Skills Grade/Rating: 4 3 2 1

STUDENT PERFORMANCE TASK 1
Bartholomew's Question

Standard Code	Level	Topic	Amount of Time
Inquiry G8.1	<input checked="" type="checkbox"/> Developmental <input type="checkbox"/> MN Standard	Experimental Inquiry	2-3 classroom periods

Specific Statement(s) from the Standard

What students should do:

1. Gather information from direct observations:
 - a. frame a question
 - b. collect and record data
 - c. display data in appropriate format (e.g., graphs, tables, charts, diagrams)
 - d. look for patterns in observable data
 - e. relate findings to new situations or large group findings
 - f. answer question or present position using data
 - g. identify areas for further investigation.

Product

Laboratory notebook

Central Learning

Use evidence and reasoning to explain and support an idea.

Description of Task

1. In your laboratory notebook write down what you know about solids and liquids and then make a list of properties of each. If you are working with a group, discuss these and reach an agreement on a list that reflects your best thinking.
2. Your task is to determine if a substance is a solid or a liquid, a new kind of solid or liquid, or both. Your instructor will show you the materials available and point out their location. If you think of experiments but need additional equipment, ask your instructor for help. You are to follow all standard laboratory safety procedures.

Each time you investigate the substance, make three entries in your notebook: 1) Question (the current question that you are investigating); 2) Method (what is done to answer the question, including laboratory safety considerations, and materials used); and 3) Result (what was observed, measured). Continue this sequence of Question-Method-Result (QMR), making sure to keep complete records each time until you have completed your investigation into this substance.

At the end of your investigation write a conclusion.

3. The substance to be investigated consists of a white solid and water. Mix 2-3 teaspoons of this white solid with water. Stir, as water is added with a medicine dropper. This mixture should flow when the container is tipped on its side.

Task Management Skills

Strives for accuracy
 Keeps trying
 Generates goals and plans for achieving
 Follows safety rules

STUDENT PERFORMANCE TASK 1 Bartholomew's Question

Special Notes

Materials: Equipment requirements will vary depending on your situation, what you want to emphasize in the work, and how creative an investigation that students make. What follows is a general list of materials. You may add to or modify them.

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*(2-3 spoonfuls of corn starch to which water is carefully added with a medicine dropper while stirring OR 70 g soluble starch (corn starch) in about 60 mL water OR 1 box corn starch in about 1 cup of water. Regardless of the method used, the mixture should flow when the container is tipped on its side. This mixture is often colored with food coloring. It is recommended that you don't do that.)

Questions: Students may have some, especially at the outset. Provide encouragement for students self-discovery. Answer questions by returning students to the research question, what they know about science, and the laboratory work (watch for safe laboratory practices). You may need to help students find strategies to make best use of both the materials at hand and their team members.

Groups: Many times scientists cooperate with each other in their work. Modern science often involves a considerable team work. Students can work together to solve this puzzle. The puzzle students are given is "simple" but surprisingly rich in opportunities for investigation, individual/group creativity, and thinking about concepts. Chemists define substances on the basis of an accumulation of observable properties and this is the students' task in this assessment. Groups of 2-3 are recommended. However, each student should complete his or her own notebook.

Time: This investigation should take 2-3 periods. If it is extended, the time taken from other classroom work should be minimal and used for observations. If you have students who want to pursue a more ambitious research agenda perhaps this can be done before or after school. Certainly you want to encourage students to do further research.

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J. Walker, "The Amateur Scientist: Serious Fun with Polyox, Silly Putty, Slime and Other Non-Newtonian Fluids," *Scientific American*, (November, 1978), 186-196.

STUDENT PERFORMANCE TASK 1
Bartholomew's Question

Performance Criteria

CHECKLIST FOR TASK 1

E=Excellent
S=Satisfactory
N=Needs Improvement

Student Evaluation

Teacher Evaluation

Experiments

_____ Questions that are testable are generated from the list of properties. _____

_____ The experimental procedure(s) can be replicated. _____

Observations

_____ Observations are qualitatively accurate. _____

_____ Observations are quantitatively accurate. _____

_____ Observations use appropriate laboratory tools. _____

Materials and Laboratory Safety

_____ A complete list of materials used is provided. _____

_____ Laboratory safety procedures are recorded and fully observed. _____

Data

_____ Data are accurately recorded. _____

_____ Any measurements are recorded within the limits of the equipment used. _____

_____ Repeated measurements are taken. _____

Variables

_____ An appropriate independent (input or manipulated) variable is identified. _____

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_____ The independent variable is controlled. _____

Conclusion

_____ Scientific concepts are used accurately. _____

_____ Potential sources of error and suggestions for reducing them are included. _____

_____ The data table is complete and accurate. _____

_____ The conclusion is supported by the evidence collected. _____

_____ The analysis makes use of all the data collected. _____

_____ The question which can be used to focus a future investigation is thoughtful and related to the current work. _____

OVERALL EVALUATION _____

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

Special thanks to Brian Harris and Cheryl Utecht from Dover-Eyota (615 South Avenue, Eyota, MN 55934) for their initial contribution.

MINNESOTA DEPARTMENT OF CHILDREN, FAMILIES AND LEARNING
Performance Package
Minnesota Profile of Learning
Content Standard 5.G8.1

Student _____

_____ Developmental Level <u>√</u> MN Standard Level
--

Course _____

Title of Package/Activity Migration

Summary Statement of Content Standard

Gather information to answer scientific or social-science questions.

Description of Student Performances	Performance Record	Achievement Grades/Ratings
Creates a Question Outline.	Date: Date:	
Presentation of information based on interview data.	Date: Date: Date:	

Circle Final Achievement Grade/Rating:	4 3 2 1
--	---------------

Task Management Skills	Performance Record	TMS Grades/Ratings
Effective group work Respects others Uses time well		

Key: 4 = Exceeds expectations, approximately "A" work
 3 = Meets expectations, approximately "B" work
 2 = Work has deficiencies or process lacks independence
 1 = Unacceptable or incomplete

Circle Final Task Management Skills Grade/Rating:	4 3 2 1
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STUDENT PERFORMANCE TASK 1

Migration

Standard Code	Level	Topic	Amount of Time
5.G8.1	<div style="border: 1px solid black; padding: 2px; display: inline-block;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="text-align: center;">√</div> <div style="border-bottom: 1px solid black; width: 100%;"></div> </div>	Developmental MN Standard	

Specific Statement(s) from the Standard

What should students do:

2. Gather information through direct observation, interviews and surveys:
 - a. frame a question.

Product

Question Outline

Central Learning

Identify and clarify the component parts of a complex task or idea.

Description of Task

In this project you will work in a group to conduct research about a significant question relating to international immigration, or migration from one community to another within a country. The group's first task is to generate good questions for research. After that the group members must work together to collect, analyze and interpret data to answer the questions.

Your teacher will provide a Question Outline Sheet to help you generate your research questions.

Question Outline

1. Your small group will pose one broad "why?" question related to immigration. Think about your study of the topic, and refer to the materials you have read and discussed in class to help you come up with your question. Write your question in the space provided on the Question Outline Sheet.

Example: Why do some people leave their homes and come to new communities to live?

2. This step has two parts:

- a. You must come up with general categories of reasons why people relocate their homes. (A general category has more specific ideas that fit within it.) Write a title for the general category on the Question Outline Sheet in the section labeled "Reasons that have to do with:"

Example: Reasons that have to do with the need to feel safe and secure

- b. Then, formulate a question from that statement and write it in the same section beneath the category title. This is a research question related to the general category you have just identified.

Example: Do people move because they don't feel safe and secure in their homes?

The need to feel safe and secure is only one general category of reasons that explain why people move to live in new places. Your group should name two or three other general categories, and write the related research questions for them before you work on the sub-questions for any category.

Examples of other general categories of reasons to explain why people leave and move to new places:

- economic situation (money, jobs)
- family changes (loss, separation, life cycle changes).

STUDENT PERFORMANCE TASK 1

Migration

Description of Task, continued

3. Once you have decided on the categories and written the related research questions, have a brainstorming session to generate the more specific sub-questions for each category.

For example: for the question "Do people move because they don't feel safe and secure in their homes?" some possible sub-questions would be:

- Do people leave their homeland because of war?
- Do people leave their communities because of burglaries, vandalism and other such crime?
- Do people move to escape violence in their neighborhood?

Write sub-questions in the space on the Question Outline for sub-questions beneath each general category question.

The purpose of the questions is to help you focus your search for information about a complex topic.

When your outline is complete you will know exactly what you're looking for when you do your research.

After you complete the Question Outline answer the following questions regarding preliminary considerations. These are things you must determine before you begin gathering your data. Use the back of your Question Outline sheet.

- a. Considering the questions you have asked, describe potential interview subjects who will best provide the kind of data you need. What kinds of experiences will they have had?
- b. Once you have the data, what purpose can it serve? How could someone use the information in a positive way?

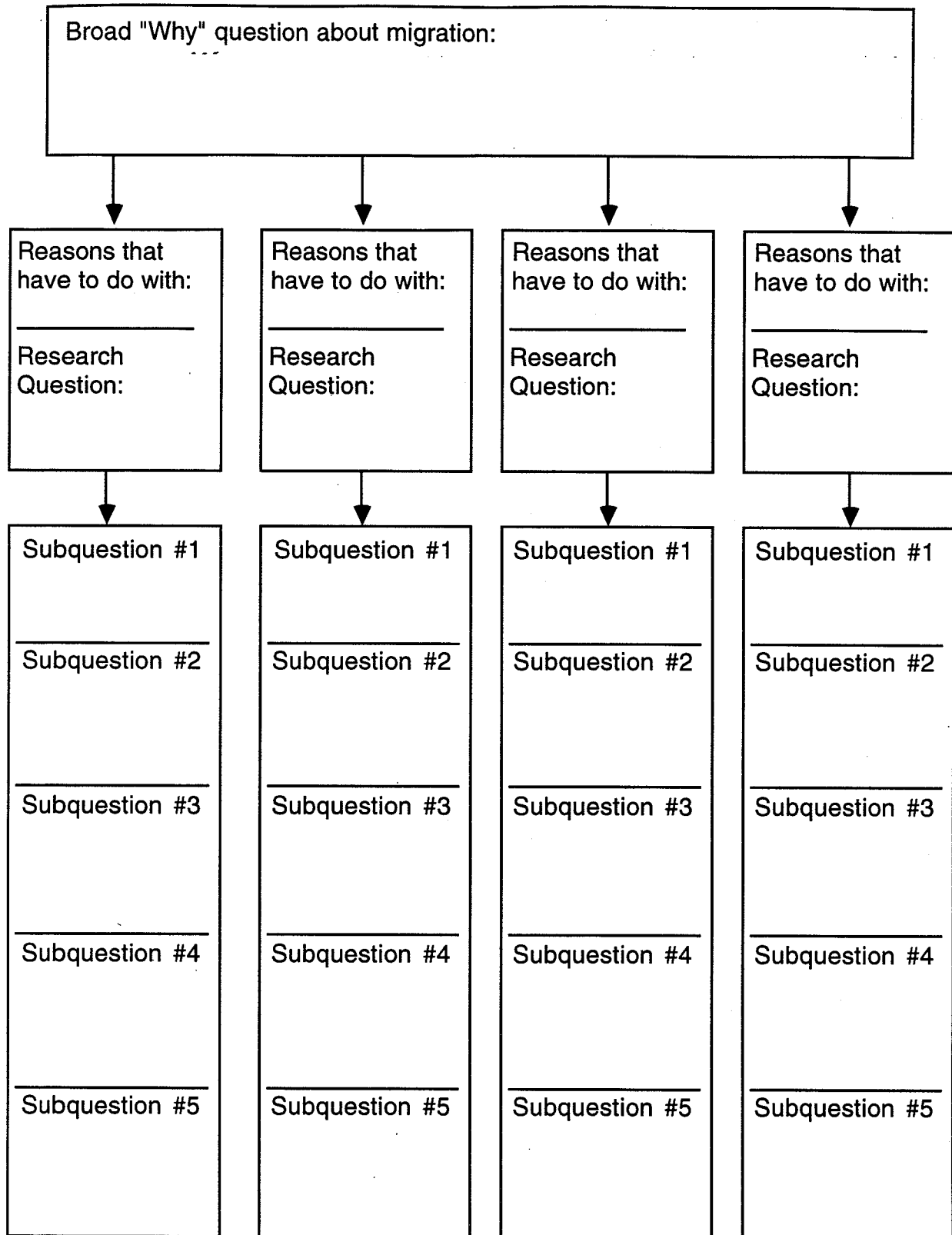
Your teacher will provide information and guidance in making arrangements for the interviews.

Task Management Skills

Effective group work

STUDENT PERFORMANCE TASK 1
Migration

Question Outline



STUDENT PERFORMANCE TASK 1

Migration

Appendix - Teacher Notes

This outline, or some modified version could be used in a whole class lesson to prepare students to do their own question outline. Give each student a copy of the blank question outline form, and lead the class through the process of generating questions. Encourage brainstorming to complete the sample outline. Be sure that students understand that this is only a sample and that they will generate their own questions in their small groups. This activity will give them a chance to practice the process.

Sample Question Outline

Broad "Why" question: *Why do people leave their homes and move to new communities?*

General Categories of Reasons

Category #1 - Reasons that have to do with: *the need to feel safe and secure.*

Research Question: *Do people move because they don't feel safe in their homes?*

Subquestion #1: *Do people leave because of crimes like burglary and vandalism?*

Subquestion #2: *Do people move because of violence in their neighborhood?*

Subquestion #3: *Do people leave their homeland because of war?*

Category #2 - Reasons that have to do with: *an economic situation.*

Research Question: *Do people move for economic reasons?*

Subquestion #1: *Do people move seeking better jobs?*

Subquestion #2: *Do people move when their financial situation changes for better or worse?*

Subquestion #3: *Do people move to find more affordable housing?*

STUDENT PERFORMANCE TASK 1

Migration

Special Notes

1. Students need to have studied topics related to human migration before working on this topic.
2. Guide the class through the process of creating a question outline prior to giving this assignment. A sample outline is provided in this package.
3. Tell the students that they will be collecting their information by interviewing. Make sure that they understand that the questions in this task are not necessarily good interview questions. They will likely be leading, too specific, and inappropriately phrased for use in an interview. Students will create more open-ended questions for the interviews in the next task.

Performance Criteria

CHECKLIST FOR THE QUESTION OUTLINE

E=Excellent
S=Satisfactory
N=Needs Improvement

Student
Evaluation

Teacher
Evaluation

- | | | |
|--|---|--|
| | The broad question represents a significant issue related to migration. | |
| | The question outline effectively narrows the broad topic question. | |
| | The question outline identifies a sufficient variety of researchable questions. | |
| | All of the questions clearly relate to the broad question. | |

Preliminary Considerations

- | | | |
|--|---|--|
| | The answers to the questions: <ul style="list-style-type: none"> • show a relationship between the experiences of people to interview and the type of information needed • mention reasonable ways that the information from the study could be used. | |
|--|---|--|

OVERALL EVALUATION

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

STUDENT PERFORMANCE TASK 2 Migration

Standard Code	Level	Topic	Amount of Time
5.G8.1	<hr/> Developmental MN Standard <hr/> √	Preparing and Conducting Interviews	

Specific Statement(s) from the Standard

What should students do:

2. Gather information through direct observation, interviews and surveys:
 - f. record and organize information.

Product

Data tracking sheets and display of conclusions drawn from interview data.

Central Learning

Gather information by framing initial questions, listening to responses, and immediately developing further questions to probe for relevant information.

Description of Task

This part of the project involves conducting a series of six interviews to collect information related to the research questions that you have framed about people migrating to new places to live. Your group will also organize the information and explain what it means.

Begin by having each group member select a general category from the question outline. You must assume the main responsibility for collecting and organizing the data in your category as the work proceeds.

1. Collecting the Data

Plan to have your entire group present at each of the six interviews to ask questions, listen to and record responses.

The purpose for conducting the interview is to hear the complex story of this person's life in terms of their migration. Your questions must at once allow the story to unfold in a natural way but also ensure that the data you get is relevant and useful for your study.

Therefore a combination of two types of questions would be appropriate:

- broad, open-ended questions which allow the natural unfolding
- more specific, focused questions which will be necessary in probing for missing information.

Use the 5 W's--Who, What, Where, When, Why--to formulate questions about the person's life before, during and after their migration. For example: Where did you live and what was it like to live there? What is your new home like? Who lived with you? Who were the people in your community? Describe what your new community is like.

Depending on the response you could follow up with probing questions to get more information. Read the guidelines for interviews that your teacher will provide.

Using the two types of questions explained above, work as a group to write a list of questions that you would like to use in your interviews. You need to write 10-15 questions although you may actually use fewer or more in the interview depending on how your interviewee responds. Ask your teacher for feedback on your questions before the first interview.

STUDENT PERFORMANCE TASK 2

Migration

Description of Task, continued

2. Recording the Data

Use a sheet divided into two sections for your notes:

- a. One section is for the careful, objective recording of responses. Write down as much of the person's conversation as you can using the key words and phrases as well as direct quotes.
- b. The other section is for your comments, reactions and questions about what the person says.

3. Organizing the Data: The Data Tracking Sheets

Each group member must prepare a data tracking sheet prior to the first interview. Use the Question Outline to prepare the sheet. Write your general category with its related research question as the title. Then list the sub-questions that you identified. Leave space beneath each question in which you will write the particular data from your interview that relates to that question. Also leave space to add new sub-questions that might arise.

Each group member should select a different colored pen to label his or her tracking sheet.

At the end of each interview session hold a group meeting to accomplish the following:

- a. Read through your notes to see what data you have. Then find all the data that relate to your general category. It will probably be scattered throughout the record. Use the colored pen you used on your tracking sheet to highlight the data in your notes.
- b. Transfer the highlighted data to the appropriate places on your tracking sheet.
- c. Lay the tracking sheets out so that all group members can see how the data appears in each category and how it is related to particular questions. On the basis of this information, the group may wish to adjust the interview in some ways that will allow you to collect better data, or more data for particular questions.

For example you might discover that the interviewee didn't say enough, and that you need to rephrase the question or add prompts such as, "Please say more about that". Or you might change the order of the questions. Make time adjustments if you think the session was too long, or too brief.

4. Explaining What the Data Mean

Once the interviews are all completed and all the data has been entered onto the tracking sheets, you will be ready to discuss the meaning of the data.

Each group member must individually:

- Read your tracking sheet carefully to determine how well the data answers the question and sub-questions on your sheet.
- Answer these questions about what you have found: What do the data tell you? What data are missing from your category? What new questions emerged as you amassed data? Now that you've got this data, what does it mean and how can it be used?
- Write your answers on a sheet for discussion with your group.

STUDENT PERFORMANCE TASK 2
Migration

Description of Task, continued

Meet with your group to accomplish the following:

- a. Compare your answers to the questions about the findings in each general category. Discuss those same questions in regard to the study as a whole.
- b. Prepare a statement of conclusions. Lay out the data tracking sheets a final time. At the top of a large sheet of paper write the broad question that you used to begin your Question Outline. Under it write the heading: "Based on data collected from six interviews, we conclude the following:" Under this heading:
 - list conclusions that are relevant and supported by the data.
 - propose ways that this information could be used, perhaps to help people and communities. Be specific.
 - display brief biographical information about each of your sources (the people you interviewed).
- c. Present the sheet of conclusions and all of the data tracking sheets to the teacher. Each member of the group should be prepared to answer questions regarding the work.

Task Management Skills

Effective group work
Respects others
Manages time well

STUDENT PERFORMANCE TASK 2 Migration

About the Interviews: Guidelines and Suggestions

Who you interview depends upon what you want to know. Look at your Question Outline to determine who best can supply the kind of data you need. Your questions will help you make decisions about age, gender and background of the people you choose to interview. Generally, some people who are knowledgeable about the topic are:

- people who have relocated internationally, or across boundaries within a country, state, or to a different part of a city, town or other type of community.
- people who help the newly arrived to adjust
 - social service workers
 - clergy and other workers in churches, synagogues, or temples
 - school teachers and administrators
- chamber of commerce staff people
- people who set and enforce relocation policy
 - insurance agents
 - government officials
 - legislators
- people who collect information about immigrants and immigration
 - health department
 - businesses
 - historical society
 - census workers
- community residents who have new neighbors from other places

What

Have it clearly in your own mind what it is you want to know.

Be sure that your questions are based squarely on what you want to know. Your interview should link your interviewee and your research question/sub-questions. Make the questions short and clearly worded.

Who

Be sure you're asking your questions of the right people. The person must be able to talk about their own experience when they give the answer. For example, the right person to ask about how it feels to have left your homeland is someone who has actually done that.

The goal of your questioning is to provide you with a picture of something you cannot see, and give you new insight from a knowledgeable person.

Issues

Guard against bias or prejudice in your questioning. For example, the question, "Why do new arrivals seem to have such a hard time getting along in a new place?" could be perceived as a loaded question suggesting a prejudice held by the interviewer. A more open question would be, "What difficulties might new arrivals face when they come to this city?" or "How did you get along in your early days in your new home, any special challenges or adjustments?"

State your questions about particular issues in a neutral way. Suppose you asked someone to talk about why they moved away from a big city, and in their response they don't mention crime. If you are especially interested in whether fear of crime was a factor, ask a probing question like, "Crime is a big topic of discussion of cities. Did worries about crime enter into your decision to move?" That is preferable to, "Did you move because you were afraid of all the crime that happens in that city?"

The following strategies can help you detect unfairness in the interview questions:

- getting feedback from more than one person (teacher, classmates, potential interviewees, and others) about your questions
- imagine how you would feel if someone asked you that same question about a group that you belong to, for example if someone said, "Why do (your grade) graders have such a hard time getting along?"

Be sure to tell the people you interview about the purpose of the interview and how the information will be used.

STUDENT PERFORMANCE TASK 2 Migration

Special Notes

1. A sheet of suggestions for conducting the interview is included, but students will benefit from instruction and practice in creating questions and conducting an interview. Role-playing the interview situation in class may be a helpful strategy.
2. When the group presents their study, ask each individual student at least one question related to the content of the tracking sheet they prepared, and at least one question regarding the study as a whole. The purpose of the question is to allow individual students to demonstrate understanding of their research process and of the meaning of the information they collected.
3. Additional suggestion for presentation of findings - Create a wall display to share your findings and conclusions. Display must include:
 - your research question
 - a biographical sketch of each interviewee
 - conclusions and insights supported by quotes from the interview
 - new questions that would be interesting for research.

Performance Criteria

CHECKLIST FOR TASK 2

E=Excellent
S=Satisfactory
N=Needs Improvement

Student
Evaluation

Teacher
Evaluation

Collecting the Data

The interview questions are designed to get the needed information:

- clearly related to the research questions
- interviewee to give responses that are complete and detailed
- encourage relevant responses.

Recording the Data

The notes contain a sufficient amount of data from the interviews.

Organizing the Data

The tracking sheets clearly display the data in each category.

The tracking sheets effectively guide the data collection process.

Explaining the Data

Conclusions address the research question.

Compelling evidence supports all conclusions.

OVERALL EVALUATION

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT



MINNESOTA DEPARTMENT OF CHILDREN, FAMILIES AND LEARNING
Performance Package
Minnesota Profile of Learning
Content Standard Inquiry G5.1

Student _____

<input checked="" type="checkbox"/> Developmental Level <input type="checkbox"/> MN Standard Level
--

Course Any Content Area

Title of Package/Activity Hexagonal Writing

Summary Statement of Content Standard

Answer questions using information gathered through direct observations, experiments and other sources.

Description of Student Performances	Performance Record	Achievement Grades/Ratings
Writes to present information using six types of thinking skills.		

Circle Final Achievement Grade/Rating:	4 3 2 1
--	---------

Task Management Skills	Performance Record	TMS Grades/Ratings
Uses resources appropriately		

Key: 4 = Exceeds expectations, approximately "A" work
 3 = Meets expectations, approximately "B" work
 2 = Work has deficiencies or process lacks independence
 1 = Unacceptable or incomplete

Circle Final Task Management Skills Grade/Rating:	4 3 2 1
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STUDENT PERFORMANCE TASK 1 Hexagonal Writing

Standard Code	Level	Topic	Amount of Time
Inquiry G5.1	√ Developmental MN Standard	Reporting Findings	8 days

Specific Statement(s) from the Standard

What students should do:

2. Gather information from media sources:
 - d. reporting findings in written, oral or visual presentation.

Product

Written presentation

Central Learning

Make numerous decisions about details that combine to create a representation of an idea.

Description of Task

This assessment task is designed to be used after they have gathered information from media sources on a topic (see special notes). At this point in the process, they should have selected a topic, framed their questions, accessed sources of information, and recorded and organized information. When they are ready to summarize and present their information in written form, they should:

1. Review their informational notes and data charts on their topic.
2. Prepare to present their information. They will be applying six different types of thinking skills to a topic: describing the topic, comparing the topic, associating the topic, analyzing the topic, applying the topic, and making judgments about the topic. The following guide will help them:

Thinking Skills	If you are writing about a topic in Literature (Fiction)	If you are writing about a topic in Another Content Area (Non-Fiction)
Describing or overview	Summarize the Material Provide an Overview	Define the Concept or Topic Identify Purpose and Functions
Comparing	Identify Similarities to Other Works Identify Differences with Other Works	Identify Similar Concepts or Topics Identify Different Concepts or Topics
Associating or connecting	Make Connections to Your Own Life Experiences	Make Connections to Your Own Background in the Topic Area
Analyzing	Probe Into a Section of the Material Demonstrate Use of a Literary Element	Probe Into a Part or Function Demonstrate Use of a Principle
Applying	Identify a Theme or Big Idea Identify Areas for Further Investigation	Examine Solutions and Alternatives Identify Areas for Further Investigation
Making Judgments or Conclusions	Make and Support an Evaluation Argue and Defend a Position	Draw and Support Conclusions Take a Stand and Defend It

STUDENT PERFORMANCE TASK 1

Hexagonal Writing

Description of Task, continued

For example, in a literature unit on Native American Culture, they may have examined a variety of legends (see special notes). They will present what they have learned about different thinking skills. Their first step will be to give a **description**. Did they read individual legends from the Cherokee, Cheyenne, Makah, Algonquian, and Navajo traditions (Native American Legends Series, written and adapted by Terri Cohlene, Mahwah, NJ: Watermill Press, 1990)? Did they read an anthology of Native American stories, such as Keepers of Life by Michael J. Caduto and Joseph Bruchac (Golden, CO: Fulcrum, 1994)? Have they read stories about Ojibway and Lakota traditions? Next, they will make **comparisons**. Have they read folk tales and legends from other cultural traditions? In what ways were the Native American stories similar or different? For the third thinking skill, they'll want to make **connections** to their own experiences and their own cultural background. Are stories an important part of family life? Are stories used to teach children in the family about the world? To **analyze** the work, they might pick one of the stories they've read and describe what it demonstrated about that tribal culture. Or, they might give examples of how nature was represented in all of the stories they read. For **application**, they might think about the big ideas that are important in these stories. Is "respect for nature" an idea that appeared over and over again? Was "cooperation" important in all of the stories they read? In **making judgments** about the material, they may decide that they agree with the idea of respecting nature. After they state their opinion, they will explain the reasons they feel that way.

In a social studies unit on weather, they might begin by **describing** the area they focused on--tornadoes, for example--and the questions they investigated during their study. For **comparison**, they might describe how a funnel cloud differs from other fair weather or storm clouds. For **association**, they could describe any experiences they've had with tornadoes or how much they knew about them prior to their investigation. For **analysis**, they might describe the atmospheric conditions that often result in the creation of a funnel cloud or the relationship between tornadoes and air pressure. For **application**, they might examine current developments in storm tracking technology as a way of providing early warning of tornado activity. To **conclude**, they might give several reasons why it would be important to support further research in this area.

3. Working on each thinking skill separately, they will write a draft applying each type. As they write, they will refer to the information they've obtained earlier in the inquiry.
4. When they have working drafts for all six types of thinking skills, go over them with the students. Help them identify areas that need more information or support.
5. Following all steps of the writing process, students will produce final drafts for each type of thinking skill. They will label each paper with a header: Describing, Comparing, Associating, Analyzing, Applying, and Making Judgments.
6. They may present their information as a hexagon by placing their papers in a hexagonal format. They will staple or tape the top edge of each set of papers along one side of a hexagon. Continue until a paper for each thinking skill is attached to each side. Papers can overlap in the center.
7. When they are satisfied with their presentation, they are to submit their work for review.

Task Management Skills

Uses resources appropriately

STUDENT PERFORMANCE TASK 1 Hexagonal Writing

Special Notes

The materials and topics used in this task can be adapted based upon the curriculum used by individual school districts.

Based upon Bloom's Taxonomy, the hexagonal writing (or cubing) heuristic is described in *Writing* by Gregory and Elizabeth Cowan (New York: John Wiley, 1980). Because it can be used for expository writing or literary response, the strategy is a useful way for students to report findings in a range of inquiry areas. For ideas on how to use this strategy with intermediate grade students, see the following resources:

Carroll, J.A. and Wilson, E.E. *Acts of Teaching: How to Teach Writing*. Englewood, CO: Teacher Ideas Press, 1993.

Tompkins, G.E. *Teaching Writing: Balancing Process and Product*. New York: Merrill, 1993.

This assessment task would be most effective if it reflected specific questions related to the unit of study in which students are engaged. The guide (see Step #2) can easily be modified to include specific questions that relate to the topic under investigation. Two examples are provided in the task description; other examples can be found in the resources listed in this section.

Hexagonal writing or cubing can be used at various stages of the research process. This process can be used as a way of framing questions about a topic prior to conducting an inquiry. It can be used as a framework for recording and organizing information. It can also be used as a prewriting activity. When used this way, students would synthesize these six thinking skills into a final piece of writing. To do so, they will make decisions about sequencing the thinking skills, transitioning between each thinking skill, and eliminating thinking skills that do not contribute to the effectiveness of the overall piece. Further work on this piece of writing would also enable students to demonstrate skills required in other standard areas (i.e., Writing and Speaking).

The task in this package will also allow students to demonstrate competencies in any content area. However, the performance criteria listed here reflect the requirements for meeting the inquiry standard at the developmental level. Additional criteria should be generated if the task in this package is used to assess other standard areas.

This assessment task is based upon material that may appear in the following publication: Monson, M.P. and Monson, R.J. (in press). *Integrated learning assessment: Building stronger bridges between learning, curriculum and assessment*. Tucson, AZ: Zephyr Press. Task designer Michele Pahl Monson can be reached through e-mail at 0197supt@informns.k12.mn.us.

STUDENT PERFORMANCE TASK 1
Hexagonal Writing

Performance Criteria

CHECKLIST FOR TASK 1 (For teacher information)

E=Excellent
S=Satisfactory
N=Needs Improvement

Teacher
Evaluation

Presents findings of inquiry by writing from each type of thinking skill.

Integrates information into written presentation.

Demonstrates understanding of information obtained through inquiry.

OVERALL EVALUATION

STUDENT PERFORMANCE TASK 1
Hexagonal Writing

CHECKLIST FOR TASK 1 (To use with students)

E=Excellent
S=Satisfactory
N=Needs Improvement

Student
Evaluation

Teacher
Evaluation

_____ The six ways of looking at facts are clearly
marked on the hexagon.

_____ Each thinking skill is clearly shown.

_____ The facts support the type of thinking skill.

OVERALL EVALUATION

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

MINNESOTA DEPARTMENT OF CHILDREN, FAMILIES AND LEARNING
Performance Package
Minnesota Profile of Learning
Content Standard Inquiry G3.1

Student _____ _____ Developmental Level MN Standard Level

Course _____ Title of Package/Activity Westward Expansion
 (How did men and women participate?) _____

Summary Statement of Content Standard

Gather information to ask questions.

Description of Student Performances	Performance Record	Achievement Grades/Ratings
Researches westward expansion: Gathers and records information on male and female characters from a variety of sources.	Date: Date: Date:	
Writes and publishes an article based on an interview.	Date: Date: Date:	
Contributes a simulated "first-hand" account (sketchbook, letter, or monologue) and an informational display (timeline, chart, or graphic) to class museum display on westward expansion.	Date: Date:	
Circle Final Achievement Grade/Rating:		4 3 2 1

Task Management Skills	Performance Record	TMS Grades/Ratings
Accepts suggestions/criticism Uses resources appropriately Participates in class activities		
Circle Final Task Management Skills Grade/Rating:		4 3 2 1

Key: 4 = Exceeds expectations, approximately "A" work
 3 = Meets expectations, approximately "B" work
 2 = Work has deficiencies or process lacks independence
 1 = Unacceptable or incomplete

STUDENT PERFORMANCE TASK 1
Westward Expansion (How did men and women participate?)

Standard Code	Level	Topic	Amount of Time						
Inquiry G3.1	<table border="0"> <tr> <td style="border: none;">_____</td> <td style="border: none;">Developmental</td> </tr> <tr> <td style="border: none;">_____</td> <td style="border: none;">MN Standard</td> </tr> <tr> <td style="border: none; text-align: center;">√</td> <td style="border: none;"></td> </tr> </table>	_____	Developmental	_____	MN Standard	√		Westward Expansion	
_____	Developmental								
_____	MN Standard								
√									

Specific Statement(s) from the Standard

What students should do:

1. Gather information to answer questions through the following methods:
 - a. media sources.
2. Record information (e.g., graphs, diagrams, maps).

Product

Double entry journal

Central Learning

Use evidence and reasoning to explain and support an idea.

Description of Task

1. With your students, read several selections from the literature on Westward Expansion and display photographs and drawings from this time period. Include selections and photographs that relate to the role of women and men during this period (see suggested selections in teacher notes). Together, the class will be examining two broad questions:
 - What was life like for males and females during westward expansion?
 - What conclusions can we draw about gender roles during this period of time?

As they listen to the readings and examine the photographs and drawings, they will need to make a list of specific questions about the people in these roles.
2. They will then share their questions with a partner and identify categories of information that they both think are important to explore. In a large group, develop a class list of the best questions and categories (see Chart 1).
3. Next, they will select a female and a male character from the literature on Westward Expansion (see bibliography in teacher notes); they need to read at least two selections and choose one character from each book. As they read this material, they are to keep a double entry journal (see Charts 2 and 3) for each character based upon the categories of information generated by the class. This task will entail recording events and observations that illustrate what life was like for the characters; in addition the students will draw conclusions about the roles of men and women during this period of time.
4. While reading the material, they will participate in several literature circles to share their double entry journals with their classmates (see suggestions for structuring literature circle discussions in teacher notes). This will be their opportunity to get feedback from their classmates on the effectiveness of their journal entries. After each literature circle, help them set one goal for improving the accuracy of their record keeping in the journal (see suggested goals in teacher notes).
5. To supplement the information they are obtaining through the literature, they should begin to collect information from other sources (non-fiction, video, computer software). They need to read, view, or interact with at least one of these alternative sources (see biography in teacher notes). At the end of the double entry journal, they need to summarize any new information they gain from these sources (see Chart 4).

Task Management Skills

Accepts suggestions/criticism
 Uses resources appropriately
 Participates in class activities

STUDENT PERFORMANCE TASK 1
Westward Expansion (How did men and women participate?)

CHART 1 - SAMPLE CATEGORIES AND EXAMPLE QUESTIONS

The teacher should help students frame questions and should facilitate the placing of questions into categories; these examples are included for illustrative purpose only.

Questions about Westward Expansion

Personal Qualities

Examples:

What made a person decide to travel west?
Did people move west because they weren't successful in the east?
Did any women come west on their own?

Physical Characteristics

Examples:

How did the early pioneers keep clean?
Did you have to be strong to drive a wagon?
Did the pioneers ever die due to illness?

Emotions

Examples:

How did it feel to gaze upon the Great Plains for the first time?
Did pioneers ever panic?

Jobs, Tasks and Chores

Examples:

Who did the cooking? What did they cook?
Did the pioneers hunt for food?

Entertainment

Examples:

Did they play any games?
Did they have any spare time?
Were they able to take their toys with them?

Family Life

Examples:

What would a family take with them on their journey west?
Who made the decision to move the family west?
Were any babies born during the journey west?

STUDENT PERFORMANCE TASK 1
Westward Expansion (How did men and women participate?)

CHART 2 - DOUBLE ENTRY JOURNAL
Male Character

Information I'm gathering about the character (including page numbers) . . .	My conclusions about the role of men and boys . . .
Personal Qualities	
Physical Characteristics	
Emotions	
Jobs, Tasks & Chores	
Entertainment	
Family Life	
Challenges, Hardships & Dangers	

STUDENT PERFORMANCE TASK 1
Westward Expansion (How did men and women participate?)

CHART 3 - DOUBLE ENTRY JOURNAL
Female Character

Information I'm gathering about the character (Including page numbers) . . .	My conclusions about the role of women and girls . . .
Personal Qualities	
Physical Characteristics	
Emotions	
Jobs, Tasks & Chores	
Entertainment	
Family Life	
Challenges, Hardships & Dangers	

STUDENT PERFORMANCE TASK 1
Westward Expansion (How did men and women participate?)

CHART 4 - DOUBLE ENTRY JOURNAL
Alternative Sources of Information

Source 1: _____

Source 2: _____

New information from source one . . .	New information from source two . . .
Personal Qualities	Personal Qualities
Physical Characteristics	Physical Characteristics
Emotions	Emotions
Jobs, Tasks & Chores	Jobs, Tasks & Chores
Entertainment	Entertainment
Family Life	Family Life
Challenges, Hardships & Dangers	Challenges, Hardships & Dangers

STUDENT PERFORMANCE TASK 1
Westward Expansion (How did men and women participate?)

Special Notes

The materials and topics used in this package can be adapted based upon the curriculum used by individual school districts.

The assessment package should be presented as part of a unit on westward expansion that focuses on gender roles or in a unit that looks at how gender roles have changed through different periods in history. An important variation of this package would be to bring in male and female Native American perspectives.

Teacher Resources for Photographs and Drawings

Freedman, R. *Children of the Wild West*. New York: Clarion, 1983.
The National Geographic Society. *Trails West*. Washington, DC: National Geographic Society, 1979.
TimeLife Books. *Pioneers*. New York: TimeLife Books, 1974.

Sources for the Reading Aloud (Step 1 - Task #1)

Butruille, S. *Women's Voices From the Oregon Trail: The Times That Tried Women's Souls and a Guide to Women's History Along the Oregon Trail*. Boise, ID: Tamarack, 1994.
Conrad, P. *Prairie Visions: The Life and Times of Solomon Butcher*. New York: Harper Collins, 1991.
Schlussei, L. *Women's Diaries of the Westward Journey*. New York: Schocken, 1992.
Shellenberger, R. *Wagons West: Trail Tales*. Heritage West, 1991.
Tunis, E. *Frontier Living*. Cleveland, OH: World Publishing Company, 1961.
Walker, B. *The Little House Cookbook*. New York: Harper and Row, 1979.
Wilder, L. and Lane, R. *A Little House Sampler*. New York: Harper and Row, 1988.

Student Reading (Step 3 - Task #1)

These books are representative of multiple reading levels. In this listing, there are books with strong male characters, strong female characters, and books in which both gender roles are well represented.

Blumberg, R. *The Incredible Journey of Lewis and Clark*. New York: Lothrop, 1987
Conrad, P. *Prairie Visions: The Life and Times of Solomon Butcher*. New York: Harper Collins, 1991.
Harvey, B. *Cassie's Journey: Going West in the 1860s*. New York: Holiday, 1988.
Harvey, B. *My Prairie Year: Based on the Diary Elenore Plaisted*. New York: Holiday, 1986.
Knight, A. *The Way West: Journal of a Pioneer Woman*. New York: Simon and Schuster, 1993.
Lawler, L. *Addie's Long Summer*. Morton Grove, IL: Albert Whitman and Company, 1992.
MacLachlan, P. *Sara, Plain and Tall*. New York: Harper, 1985.
McClung, R. *Hugh Glass, Mountain Man*. New York: Morrow, 1990.
Russell, M. *Along the Santa Fe Trail: Marion Russell's Own Story*. Morton Grove, IL: Albert Whitman and Company, 1993.
Sanders, S. *Aurora Means Dawn*. New York: Bradbury, 1989.
Straight, T. *The Price of Free Land*. New York: Lippencott, 1979.
Turner, A. *Grasshopper Summer*. New York: MacMillan, 1989.
Turner, A. *Dakota Dugout*. New York: MacMillan, 1985.
Waddell, M. *Going West*. New York: Harper Collins, 1983.
Wilder, L. *Little House on the Prairie*. New York: Harper and Row, 1935.
VanLeeuwen, J. *Going West*. New York: Dial, 1992.

STUDENT PERFORMANCE TASK 1
Westward Expansion (How did men and women participate?)

Special Notes, continued

Some Suggestions for Structuring Literature Circles (Step 4 - Task #1)

Source:

Hill, B., Johnson, N. and Schlick-Noe, K. *Literature Circles and Response*. Norwood, MA: Kristopher-Gordon Publishers, 1995.

Literature circle discussions should be held periodically throughout the reading of the books. During literature circles, students should meet in small groups to share their journal entries. Students take turns reading a sample of their journal entries out loud to each other and give each other feedback on how to make those journal entries more effective. Students are best able to give each other feedback when there are some identified goals and some criteria for what constitutes an effective journal entry. Suggested goals include:

- providing detailed examples from the reading
- giving page numbers
- using specific dates
- using vocabulary that is relevant to the time period
- including historical events that are relevant to the time period
- inferring a character's motive, feelings, or traits through their actions
- drawing conclusions and supporting those conclusions with details from the text
- trying to find information to address all of the categories that are generated by the class.

Alternative Sources of Information (Step 5 - Task #1)

Non-Fiction Selections

- Alter, J. *Growing Up in the Old West*. New York: Franklin Watts, 1989.
Alter, J. *Women of the Old West*. New York: Watts, 1989.
Bloch, L. *Overland to California in 1859: A Guide for Wagon Train Travelers*. Cleveland, OH: Bloch and Company, 1990.
Collins, J. *Exploring the American West*. New York: Franklin Watts, 1990.
Collins, J. *Lawmen of the Old West*. New York: Franklin Watts, 1990.
Erickson, P. *Daily Life in a Covered Wagon*. Washington, DC: Preservation Press, 1994.
Fox, M. *The Story of Women Who Shaped the West*. Chicago, IL: Children's Press, 1991.
Freedman, R. *Children of the Wild West*. New York: Clarion, 1983.
Freedman, R. *Cowboys of the Wild West*. New York: Clarion, 1985.
Katz, W. *Black People Who Made the Old West*. New York: Ethrac Publications, 1977.
Laycock, G. and Laycock, E. *How the Settlers Lived*. New York: David McKay Company, 1980.
Levine, E. *If You Traveled West in a Covered Wagon*. New York: Scholastic, 1992.
Pelz, R. *Black Heroes of the Wild West*. Seattle, WA: Open Hand Publishing, 1990.
Place, M. *Westward on the Oregon Trail*. New York: American Heritage Publishing Company, 1962.
Steber, R. *Women of the West*. Prineville, OR: Bonanza Publishing, 1988.
Source Books of the American West. Brookfield, CT: Millbrook Press, 1992.
"On the Oregon Trail," *Cobblestone: History Magazine for Young People*, XXII (December, 1981, Vol. 2).
"On the Gold Rush to California," *Cobblestone: History Magazine for Young People*, IV (May, 1982, Vol. 3).
"Laura Ingalls Wilder," *Cobblestone: History Magazine for Young People*, II (February, 1986, Vol. 7).

Videos

- American Traditions: The Oregon Trail*, 1994, available from Select Video Publishing in Inglewood, CO.
Beyond Edie's Date: Legacy of the Oregon Trail, 1993, available from Oregon Historical Society and Oregon Trail Coordinating Council in Portland, OR.
Oregon Trail, 1992, available from Films for the Humanities and Sciences in Princeton, NJ.
The Trail to Oregon, 1992, available through Vistas Unlimited.
West to Oregon Along the Oregon Trail, 1992, available through EMA Video Productions.

Computer Software

- American Journey: Westward Expansion*, 1994, available from Primary Source Media.
The Oregon Trail II, 1995, available from MECC in Minneapolis, MN.
Wagons West, 1991, available from Focus Media, Inc.

STUDENT PERFORMANCE TASK 1
Westward Expansion (How did men and women participate?)

The charts are included for illustrative purposes; actual double entry journals may include several pages for each category.

Performance Criteria

CHECKLIST FOR TASK 1 (For teacher information)

E=Excellent
S=Satisfactory
N=Needs Improvement

Teacher
Evaluation

Double Entry Journal

Complete entries are included for both male and female characters. _____

Entries discuss categories generated by the class. _____

Entries are recorded at different points in the reading of each book. _____

Entries include detailed examples (with page numbers) from the reading. _____

Entries include ideas about gender roles that are supported by recorded information. _____

Complete entries are included for alternative sources of information. _____

Entries demonstrate understanding of gender roles during this time period. _____

OVERALL EVALUATION _____

STUDENT PERFORMANCE TASK 1
Westward Expansion (How did men and women participate?)

CHECKLIST FOR TASK 1 (To use with students)

E=Excellent
S=Satisfactory
N=Needs Improvement

<u>Student Evaluation</u>	<u>Double Entry Journal</u>	<u>Teacher Evaluation</u>
_____	Explains the categories.	_____
_____	Has notes from several reading times.	_____
_____	Gives page numbers for notes.	_____
_____	Uses other sources: <ul style="list-style-type: none">• video,• software, or• non-fiction.	_____
_____	Uses facts to explain men's roles.	_____
_____	Uses facts to explain women's roles.	_____
	OVERALL EVALUATION	_____

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

STUDENT PERFORMANCE TASK 2
Westward Expansion (How did men and women participate?)

Standard Code	Level	Topic	Amount of Time				
Inquiry G3.1	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-bottom: 1px solid black;">_____</td> <td style="width: 50%;">Developmental</td> </tr> <tr> <td style="border-bottom: 1px solid black; text-align: center;">√</td> <td>MN Standard</td> </tr> </table>	_____	Developmental	√	MN Standard	Westward Expansion	
_____	Developmental						
√	MN Standard						

Specific Statement(s) from the Standard

What students should do:

1. Gather information to answer questions through the following methods:
 - c. interviews.
3. Display information using the appropriate format (e.g., graphs, diagrams, maps).
4. Explain the answer(s) to the question.

Product

Interview guide; newspaper article

Central Learning

1. Use evidence and reasoning to explain and support an idea.
2. Gather information by framing initial questions, listening to responses, and immediately developing further questions to probe for relevant information.

Description of Task

1. For this task, the students will assume the role of a newspaper reporter in 1862. They will be interviewing one of the women or men who have journeyed westward and settled in the new territories. From this interview, they will write a "human interest" article. The purpose of the article is to describe what life was like for the people and to draw conclusions about gender roles during westward expansion.

Drawing upon the information they've recorded in their journals, have them write at least five questions and develop an interview guide. Based upon the categories generated in class, the questions should address specific information about the roles of men and women during this period of time.

Students will interview one of their classmates. Each student will assume the role of one of their characters and answer the questions from that perspective. After the interview, they will revise their interview guide to reflect additional questions they asked during the actual interview. Each student will not only conduct an interview, but will be expected to assume a specific role and become the source for another student's interview.

2. After the interview has been conducted, the students will write the article to submit to the newspaper. The article should describe what life was like from the perspective of the character they interviewed and should also include conclusions about gender roles in westward expansion. In developing their article, they should use information from the interview and information that they've recorded in their journal. Remind them to keep their audience in mind and follow all steps of the writing process, in order to publish a final draft. They will then submit their interview guide and newspaper article for review.
3. In a large group discussion, the class will summarize what they've learned about gender roles and westward expansion. After their double entry journal, interview guide, and newspaper article have been checked and returned, they will prepare two short personal responses to the questions listed in Task #1, Step #1 of this assessment package. They will then share their information in a carousel discussion.

Task Management Skills

Accepts suggestions/criticism
 Uses resources appropriately
 Participates in class activities

STUDENT PERFORMANCE TASK 2
Westward Expansion (How did men and women participate?)

Special Notes

Performance Criteria

CHECKLIST FOR TASK 2 (For teacher information)

E=Excellent
 S=Satisfactory
 N=Needs Improvement

Teacher
 Evaluation

Interview Guide

- Interview questions are designed to encourage extended responses. _____
- Interview questions address categories generated by the class. _____
- Interview guide has undergone revision after the interview and prior to submission. _____

Newspaper Article*

- Details are used to illustrate what life has been like for the male or female character interviewed. _____
- Conclusions are drawn about gender roles in westward expansion. _____
- Article makes connections between the character's life and gender roles. _____
- Focus on genre and point of view are maintained throughout. _____
- Article includes dates, vocabulary, and events relevant to the time period. _____
- Article has undergone revision prior to submission. _____

OVERALL EVALUATION _____

*Note: Performance criteria relate to inquiry standard and to the students' ability to gather information to answer a question. If combined with standard in Element 2, additional criteria could be developed to address the students' ability to communicate findings. These criteria would focus more on the effectiveness of the written or graphic presentation.

STUDENT PERFORMANCE TASK 2
Westward Expansion (How did men and women participate?)

CHECKLIST FOR TASK 2 (To use with students)

E=Excellent
S=Satisfactory
N=Needs Improvement

<u>Student Evaluation</u>	<u>Interview Guide</u>	<u>Teacher Evaluation</u>
_____	Questions draw out good answers: <ul style="list-style-type: none"> • enough details • interesting facts. 	_____
_____	Questions fit the categories.	_____
_____	Changes were made, if needed.	_____
<u>Newspaper Article</u>		
_____	Details show what life was like for the person you interviewed: <ul style="list-style-type: none"> • dates • vocabulary of the time period • events from daily life. 	_____
_____	The roles of men and women during the move West are explained.	_____
_____	The story tells if the person fits the roles of men and women during this time.	_____
_____	All parts of the story tell about men's or women's roles.	_____
_____	Changes in the new story were made, as needed.	_____
OVERALL EVALUATION		_____

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

STUDENT PERFORMANCE TASK 3
Westward Expansion (How did men and women participate?)

Standard Code	Level	Topic	Amount of Time				
Inquiry G3.1	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-bottom: 1px solid black;">_____</td> <td style="width: 50%;">Developmental</td> </tr> <tr> <td style="border-bottom: 1px solid black; text-align: center;">√</td> <td>MN Standard</td> </tr> </table>	_____	Developmental	√	MN Standard	Westward Expansion	
_____	Developmental						
√	MN Standard						

Specific Statement(s) from the Standard

What students should do:

3. Display information using the appropriate format (e.g., graphs, diagrams, maps).
4. Explain the answer(s) to the question.

Product

Simulated "first-hand" account; informational display

Central Learning

Represent abstract ideas through a written product, visual model, formula, or other accepted means of communication.

Description of Task

After the discussion, the students will make two contributions to a class museum display on westward expansion.

1. The first contribution should be created from the "first-hand" perspective of a character who has experienced the journey westward. Choices for representing this experience include creating a sketchbook of the journey, writing several letters back home to relatives, or taping a monologue in which experiences are described.
2. The second contribution should demonstrate what the student has concluded about the roles of women and men during this time period. Choices for representing conclusions include making a "Parallel Timeline" to compare a typical "day in the life of a woman and a man," a "T-chart" comparing the roles based upon the categories generated in class, or a graphic presentation of conclusions (such as a "Venn Diagram," "Socio-Gram," or "Character Web").
3. When first drafts of both projects are completed, your students will need to conference with you.
4. Final drafts should be revised and edited after the conference and prior to submitting the contributions to the museum.

Task Management Skills

Accepts suggestions/criticism
 Uses resources appropriately
 Participates in class activities

STUDENT PERFORMANCE TASK 3
Westward Expansion (How did men and women participate?)

Special Notes

The tasks in this package will also allow students to demonstrate competencies in Standards for Read, View, Listen; Writing and Speaking; and People and Cultures. However, the performance criteria listed here reflect the requirements for meeting the inquiry standard. Additional criteria would need to be generated if tasks in this package are used to assess other standard areas.

This assessment package is based upon material that may appear in the following publication: Monson, M.P. and Monson, R.J. (in press). *Integrated Learning Assessment: Building Stronger Bridges Between Learning, Curriculum and Assessment*. Tucson, AZ: Zephyr Press. Task designer Michele Pahl Monson can be reached through e-mail at 0197supt@informns.k12.mn.us.

Performance Criteria

CHECKLIST FOR TASK 3 (For teacher information)

E=Excellent
 S=Satisfactory
 N=Needs Improvement

Teacher
 Evaluation

"First-Hand" Account*

- The account (sketchbook, letters, or monologue) is supported by information. _____
- The account answers questions about the life of the character. _____
- The account addresses the categories generated by the class. _____
- The account includes dates, vocabulary, and events relevant to the time period. _____
- The account has undergone revision prior to submission. _____

Informational Display*

- Timeline, chart, or graphic provides evidence of a reasoned conclusion. _____
- The conclusion is drawn logically from the information. _____
- The conclusion is supported by the information. _____
- Choice of timeline, chart or graphic is appropriate given conclusion. _____
- Timeline, chart, or graphic has undergone revision prior to submission. _____

OVERALL EVALUATION _____

*Note: Performance criteria relate to inquiry standard and to the students' ability to gather information to answer a question. If combined with standard in Element 2, additional criteria could be developed to address the students' ability to communicate findings. These criteria would focus more on the effectiveness of the written or graphic presentation.

STUDENT PERFORMANCE TASK 3
Westward Expansion (How did men and women participate?)

CHECKLIST FOR TASK 3 (To use with students)

E=Excellent
S=Satisfactory
N=Needs Improvement

Student
Evaluation

Teacher
Evaluation

"First-Hand" Accounts

_____	Uses details that seem real: <ul style="list-style-type: none"> • dates • vocabulary of the time • events of daily life. 	_____
_____	Answers questions about the character's life.	_____
_____	Tells about the categories the class made.	_____
_____	Has been improved.	_____

Timeline, Chart, or Graphic

_____	Makes sense.	_____
_____	Uses details that make the ideas clear.	_____
_____	Uses the best chart for the facts.	_____
_____	Has been improved.	_____

OVERALL EVALUATION

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

MINNESOTA DEPARTMENT OF CHILDREN, FAMILIES AND LEARNING
Performance Package
Minnesota Profile of Learning
Content Standard Inquiry G3.1

Student _____

<input checked="" type="checkbox"/> Developmental Level <input type="checkbox"/> MN Standard Level
--

Course Any Content Area

Title of Package/Activity Informational Text Structure

Summary Statement of Content Standard

Gather information to answer questions.

Description of Student Performances	Performance Record	Achievement Grades/Ratings
1. Categorizes and lists informational sources according to the way the information is organized. 2. Designs a form for gathering information from each kind of source. 3. Records information using the form and makes modifications.		

Circle Final Achievement Grade/Rating: 4 3 2 1

Task Management Skills	Performance Record	TMS Grades/Ratings
Uses resources appropriately Keeps trying		
Key: 4 = Exceeds expectations, approximately "A" work 3 = Meets expectations, approximately "B" work 2 = Work has deficiencies or process lacks independence 1 = Unacceptable or incomplete		Circle Final Task Management Skills Grade/Rating: 4 3 2 1

STUDENT PERFORMANCE TASK 1

Informational Text Structure

Standard Code	Level	Topic	Amount of Time
Inquiry G3.1	<u> √ </u> Developmental MN Standard	Researching Strategies used by Authors for Organizing Information	1 week

Specific Statement(s) from the Standard

What students should do:

1. Gather information to answer questions through the following methods:
 - a. media sources.
2. Record information (e.g., graphs, diagrams, maps).
3. Display information using the appropriate format (e.g., graphs, diagrams, maps).

Product

1. Research notes (including bibliographic citations)
2. Chart with categorized lists of informational sources
3. Modifications to the form

Central Learning

Apply criteria to make judgments about a product, situation, or idea.

Description of Task

When your students gather information from media sources, they will need to understand the structure of the material they are working with. There are several strategies authors use to organize the information they are trying to present to the reader. Before the students do research, you will need to identify and define these organizational strategies for them: description, sequence, comparison/contrast, problem/solution, and cause/effect (see chart). As they do research, they will use the definitions as a guide for recording and displaying the information they gather. They will use two media sources on a topic they are currently investigating in class:

1. Define each of these organizational strategies for these students. Present definitions and examples for each of the strategies.
2. Research notes: The students will find two separate sources that use each one of these strategies. They will have ten examples--two for description, two for sequence, two for comparison/contrast, two for problem/solution, and two for cause/effect.
3. Choose a bibliographic citation format for your students to record each source.
4. Help the students design a chart or diagram for recording and displaying information in these organizational strategies. The students will need one form for each of their two sources.
5. For each strategy students will identify a question the author is trying to answer.
6. Have the students categorize their information and questions according to the organizational strategy used by the author. Which ones are description, sequence, comparison/contrast, problem/solution and cause/effect?
7. The students will use one copy of each form to record specific information from one of their identified informational sources. You may need to help them make modifications to the form to make it compatible with their research. If modifications are made, make two copies of the new form.
8. The students will submit a finished chart, research notes (including bibliographic citations), and any modifications to the chart.

Task Management Skills

Uses resources appropriately
Keeps trying

STUDENT PERFORMANCE TASK 1
Informational Text Structure

WHAT IS A DOLPHIN?
(This chart displays steps 4-6)

<p>Description (sentences that help you form a picture in your mind)</p>	<p>Dolphins are mammals. They are warm-blooded and maintain a regular body temperature. Dolphins spend most of their time underwater.</p>
<p>Sequence (information given in a particular order)</p> <p><u>key words:</u> before when then first next after</p>	<p>The mother dolphin carries it's baby eleven to twelve months <u>before</u> a single calf is born. <u>After</u> birth, the calf follows it's mother closely. It is capable of swimming within the first few minutes. <u>Then</u> it will follow it's mother closely and <u>next</u> it will nurse.</p>
<p>Comparison/ Contrast</p> <p><u>Comparison key words:</u> both all, similar, like</p> <p><u>Contrast key words:</u> but different, however, than, unlike</p>	<p>Are dolphins and porpoises the same thing?</p> <p>A dolphin is a mammal and has lungs, <u>but</u> a porpoise is a fish and breathes through gills. <u>Like</u> the porpoise, the dolphins live all over the world.</p>
<p>Problem/Solution</p>	<p><u>Problem:</u> Dolphins are being caught and killed in tuna nets.</p> <p>What can I do to help the dolphins?</p> <p><u>Solution:</u> Eating dolphin safe tuna helps dolphins because the nets used to capture those tuna will not catch dolphins.</p>
<p>Cause/Effect</p> <p>(<u>cause</u>- the reason something happens, <u>effect</u>- what actually happens)</p> <p><u>key words:</u> because so therefore</p>	<p>Dolphins are fast <u>because</u> they are narrow at the front and back, <u>so</u> water flows easily over their bodies.</p>

STUDENT PERFORMANCE TASK 1

Informational Text Structure

Special Notes

The materials and topics used in this task can be adapted based upon the curriculum used by individual school districts.

There are many good resources on expository text structure. Instructional support in this area is an important developmental prerequisite for more independent inquiry and research. Explicit knowledge of the ways in which authors organize informational material will provide a foundation that third graders can use in demonstrating their ability to gather, record, and display information from media sources. A concise explanation of each of the text structures required by this task, specific examples of each structure in non-fiction selections appropriate for third graders, additional references and instructional strategies for use prior to the assessment are provided in: *Teaching Writing: Balancing Process and Product* by G.E. Tompkins (New York: Merrill, 1994).

The task in this package will also allow students to demonstrate competencies in any content area. However, the performance criteria listed here reflect the requirements for meeting the inquiry standard at the developmental level. Additional criteria would need to be generated if the task in this package is used to assess other standard areas.

This assessment package is based upon material that may appear in the following publication: Monson, M.P. and Monson, R.J. (in press). *Integrated Learning Assessment: Building Stronger Bridges Between Learning, Curriculum and Assessment*. Tucson, AZ: Zephyr Press. Task designer Michele Pahl Monson can be reached through e-mail at 0197supt@informns.k12.mn.us.

Performance Criteria

CHECKLIST FOR TASK 1 (For teacher information)

E=Excellent
S=Satisfactory
N=Needs Improvement

	<u>Teacher Evaluation</u>
Correctly defines organizational strategies in terms that are understandable.	_____
Makes a valid effort to find two examples of each organizational strategy by reading a wide range of available resources.	_____
Correctly categorizes informational sources for each organizational strategy.	_____
Informational sources are listed using an approved format for bibliographic citations.	_____
Designs a useful form for recording and displaying information for each organizational strategy.	_____
Records and displays information using one example for each organizational strategy.	_____
When appropriate, makes modifications to the form.	_____
OVERALL EVALUATION	_____

STUDENT PERFORMANCE TASK 1
Informational Text Structure

CHECKLIST FOR TASK 1 (To use with students)

E=Excellent
S=Satisfactory
N=Needs Improvement

Student Evaluation

Research Notes

Teacher Evaluation

_____ Shows the different ways authors organize their writing.

_____ Puts two examples in each group:
• description
• sequence
• comparison/contrast
• problem/solution
• cause/effect.

_____ Gives these details:
• name of book
• author
• city of publication
• publisher
• year of publication.

Chart

_____ Uses clear labels for all parts of the chart.

_____ Shows two examples for each group:
• description
• sequence
• comparison/contrast
• problem/solution
• cause/effect.

_____ Made changes to the chart, if needed.

OVERALL EVALUATION

Notes following Performance

ATTACH ALL DOCUMENTS THAT ARE APPROPRIATE TO THIS ASSESSMENT

