

TASK	OBSERVATION/RATING					
Preparation and Planning	4	3	2	1	0	N/A
Information Gathering	4	3	2	1	0	N/A
Communicating Goals	4	3	2	1	0	N/A
Collaboration and Teamwork	4	3	2	1	0	N/A

STANDARD IS 3 FOR EACH APPLICABLE TASK

Rating Scale

The student:

- 4 exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
- 3 meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
- 2 meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.
- 1 meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.
- 0 has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

N/A Not applicable

TASK CHECKLIST

The student:

Preparation and Planning

- demonstrates an awareness of the importance of energy conservation
- sets goals and establishes steps to achieve them
- creates and follows useful timelines
- plans and uses time effectively

Information Gathering: Residential/Commercial Environments

- accesses information relevant to conducting an energy inventory; e.g.:
 - utility costs for 12 consecutive months
 - hours of operation/occupancy
 - size of structure
 - type of construction (e.g., windows, doors)
 - efficiency ratings of existing equipment/appliances
- identifies potential areas for reducing energy use
- assesses the costs/benefits of maintaining current rates of energy use, and of upgrading the existing facilities/equipment to reduce energy use; e.g.:
 - economic
 - social
 - environmental
- establishes a target level of energy efficiency
- _____

Information Gathering: Transportation Sector

- accesses information relevant to conducting an energy inventory; e.g.:
 - people involved in maintenance and use
 - maintenance and operating costs for 12 consecutive months
 - vehicle selection for fuel economy
 - policies/practices to ensure driving conducive to fuel efficiency

Information Gathering: Transportation Sector (continued)

- identifies potential areas for reducing fuel consumption
- assesses the costs/benefits of maintaining current rates of fuel consumption, and of upgrading the existing vehicles to reduce energy use; e.g.:
 - economic
 - social
 - environmental
- establishes a target level of energy efficiency
- _____

Communicating Goals

- presents information to home/school/community in a logical sequence using appropriate format
- clearly states a policy regarding energy use and outlines energy conservation objectives
- outlines a plan of action for achieving energy-use goals
- solicits support of key stakeholder groups in implementing the plan of action
- _____

Collaboration and Teamwork

- shares work and responsibilities among group members
- shares information and ideas through group discussion
- respects the views of others
- negotiates solutions to problems
- demonstrates desire to develop consensus
- _____

INFERENCE

Definition: to derive a conclusion from facts or premises

Synonyms: infer, deduce, deduct, draw, gather, judge

Criteria for Assessing Inferences

Inferences made in advanced level modules should:

- communicate the process used to derive conclusions
- be reliable and valid in light of information gathered.

Inferences must be communicated in a logical sequence with sufficient supporting detail. Both the type and the amount of information used to derive a conclusion are important in determining the reliability/validity of the inference.

Each inference made regarding potential impacts of lifestyle practices on energy resources should provide:

- a clear statement of the factors being investigated
- relevant facts and detail that support more than one point of view; *e.g., cultural, ethical, economic, environmental, health-related, scientific, political*
- a logical sequence of ideas that lead to a conclusion
- evidence that different points of view were considered in deriving the conclusion
- a valid and realistic conclusion that is based on analysis and synthesis of information

Rating Scale

The student:

4	3	2	1	0
exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.	meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.	meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.	meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.	has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

Journal of Lifestyle Practices

The journal will include 10 or more entries that describe lifestyle practices that affect an energy resource. Activities may be seasonal in nature, yet need to be of sufficient duration to permit reflection on their consequences. Each journal entry should describe:

- the nature of the activity
- a rationale for participating in the activity
- inferences regarding both short- and long-term consequences for the resource and the environment.

Journal entries may reference activities that:

- involve direct consumption of energy resources
- influence energy resources in indirect ways.

Suggested Reference: *A Primer on Environmental Citizenship, Environment Canada*

STANDARD: Complete 10 journal entries that address criteria for inferences to a standard of 3 on the rating scale.

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Information Gathering	4	3	2	1	0	N/A
Evaluating Choices/Making Decisions	4	3	2	1	0	N/A
Collaboration and Teamwork	4	3	2	1	0	N/A

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Preparation and Planning

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Information Gathering

- accesses information relevant to conducting a cost-benefit analysis of an energy-saving technology
- identifies the costs of using the energy-saving technology; e.g.:
 - economic
 - social
 - environmental
- identifies the benefits of using the energy-saving technology; e.g.:
 - economic
 - social
 - environmental
- _____
- _____

Evaluating Choices/Making Decisions

- assesses the costs and benefits of using the energy-saving technology
- establishes a target level of energy efficiency and use
- outlines a plan of action for achieving energy-use goals
- solicits the support of key stakeholder groups in achieving energy-use goals
- states conclusions regarding personal use of the energy-saving technology
- communicates results of the analysis in a logical sequence using appropriate format
- _____
- _____

Collaboration and Teamwork

- shares work and responsibilities among group members
- shares information and ideas through group discussion
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REFLECTIONS/COMMENTS

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Information Gathering and Processing	4	3	2	1	0	N/A
Content	4	3	2	1	0	N/A
Collaboration and Teamwork	4	3	2	1	0	N/A
Information Sharing	4	3	2	1	0	N/A

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Information Gathering and Processing

- accesses a range of relevant information sources and recognizes when additional information is required
- demonstrates resourcefulness in collecting data
- interprets, organizes and combines information in creative and thoughtful ways
- records information accurately with appropriate supporting detail and using correct technical terms
- recognizes underlying bias/assumptions/values in information sources
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Content

- identifies factors that determine the portion of oil in a reservoir that can be produced naturally through primary recovery methods; e.g.:
 - density and viscosity of the oil
 - porosity and permeability of the rock
 - pressure in the reservoir
- explains applications of infill drilling and directional wells to improve oil or gas recovery rates
- explains secondary methods of enhanced oil recovery:
 - water and gas injection
 - pumping technology

Content (continued)

- explains tertiary methods of enhanced oil recovery:
 - miscible flooding
 - steam injection
 - fireflooding
 - horizontal drilling
- identifies factors that influence the life of an oil and/or gas well
- describes techniques used to estimate recoverable oil and gas reserves; e.g.:
 - “proved reserves”
 - “probable reserves”
 - “established reserves”
- makes forecasts regarding the future development of oil and gas reserves; e.g.:
 - improved recovery from existing reservoirs
 - frontier production
 - oil sands

Collaboration and Teamwork

- cooperates with group members
- shares work appropriately among group members
- negotiates solutions to problems
- displays effective communication and leadership skills

Information Sharing

- demonstrates effective use of a variety of communication media:
 - e.g., written, oral, audio-visual*
- communicates thoughts/feelings/ideas clearly to justify or challenge a position
- maintains acceptable grammatical and technical standards
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Content

- identifies factors that affect the recovery potential for heavy oil, oil sands or coal deposits; e.g.:
 - nature and depth of overburden
 - density and viscosity of oil
 - porosity and permeability of rock structures
 - economic viability
- explains technologies used to maximize recovery of nonconventional hydrocarbon resources:
 - horizontal drilling
 - extraction and separation processes

Content (continued)

- explains special drilling techniques, core description and/or geophysical logging used in developing a nonconventional hydrocarbon resource
- identifies public and private agencies currently involved in developing new technology to assist in the recovery of nonconventional hydrocarbon resources; e.g.:
 - Alberta Research Council
 - Alberta Oil Sands Technology and Research Authority
 - Office of Coal Research and Technology
- describes techniques used to estimate Alberta's recoverable heavy oil, bitumen and coal; e.g.:
 - "proved reserves"
 - "probable reserves"
 - "established reserves"
- _____
- _____

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Content

- identifies factors that affect the recovery potential for a mineral deposit; e.g.:
 - depth of overburden
 - size and nature of deposit
 - porosity and permeability of rock structures
 - economic viability
 - environmental impact
- explains technologies used to enhance recovery of economic mineral deposits:
 - drilling and blasting techniques
 - rock bolting and screening machines
 - video technology and remote control
 - innovations in separation technology

Content (continued)

- identifies methods used for the exploration of “hidden” or “blind” deposits
- identifies public and private agencies currently involved in developing new technology to assist in the recovery of economic mineral deposits; e.g.:
 - Alberta Research Council
 - National Research Council
- describes techniques used to estimate recoverable mineral deposits in Alberta; e.g.:
 - computing techniques
 - assays
 - mathematical modelling
- _____
- _____

Collaboration and Teamwork

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- negotiates solutions to problems
- displays effective communication and leadership skills

Information Sharing

- demonstrates effective use of a variety of communication media:
 - e.g., written, oral, audio-visual*
- communicates thoughts/feelings/ideas clearly to justify or challenge a position
- maintains acceptable grammatical and technical standards
- gives evidence of adequate information gathering by citing seven or more relevant information sources

TASK	OBSERVATION/RATING					
Preparation and Planning	4	3	2	1	0	N/A
Analyzing Perspectives	4	3	2	1	0	N/A
Collaboration and Teamwork	4	3	2	1	0	N/A
Evaluating Choices/Making Decisions	4	3	2	1	0	N/A

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TASK CHECKLIST

The student:

Preparation and Planning

- accurately describes two issues on which people disagree regarding energy supply and demand at local and global levels
- poses thoughtful questions regarding specific causes of disagreement on each of the issues
- accesses a range of relevant information sources regarding each of the issues, and recognizes when additional information is required
- demonstrates resourcefulness in collecting data

Analyzing Perspectives

- clarifies different points of view regarding each of the issues:
e.g., cultural, ethical, economic, environmental, health-related, scientific, political
- states a position on each of the issues and insightful reasons for adopting that position
- states three or more opposing positions on each issue and thoughtful reasons for adopting each position
- analyzes interrelationships among different perspectives/points of view
- recognizes underlying bias/assumptions/values in information and ideas

Collaboration and Teamwork

- shares information and ideas appropriately among group members
- respects and considers the views of others
- negotiates with sensitivity solutions to problems

Evaluating Choices/Making Decisions

- describes in detail important and appropriate alternatives regarding energy supply and demand
- establishes knowledge- and value-based criteria for assessing each alternative:
e.g., social, economic, environmental

- selects appropriate and useful alternatives regarding energy supply/demand by showing differences among choices
- assesses strengths/weaknesses of decisions by considering consequences and implications; e.g.:
 - sustainable development
 - other quality of life factors
- _____
- communicates thoughts/feelings/ideas clearly to justify choices/decisions made
- _____

REFLECTIONS/COMMENTS

TASK	OBSERVATION/RATING					
Preparation and Planning	4	3	2	1	0	N/A
Information Gathering and Processing	4	3	2	1	0	N/A
Content	4	3	2	1	0	N/A
Collaboration and Teamwork	4	3	2	1	0	N/A
Information Sharing	4	3	2	1	0	N/A

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The student:

Preparation and Planning

- sets clear goals and establishes steps to achieve them
- creates and adheres to detailed timelines
- uses personal initiative to formulate questions and find answers
- plans and uses time effectively, prioritizing tasks on a consistent basis

Information Gathering and Processing

- accesses a range of relevant information sources and recognizes when additional information is required
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- interprets, organizes and combines information in creative and thoughtful ways
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Content

- identifies social, economic and environmental concerns regarding conventional energy supply; e.g.:
 - how much?
 - how fast?
- suggests a rationale for sustainable energy development that addresses social, economic and environmental concerns
- considers benefits and obstacles to the use of renewable and nonrenewable technology in sustainable energy development
- makes forecasts regarding future energy supply and demand, and identifies options for ensuring a sustainable energy future; e.g.:
 - using less
 - finding alternative sources

Content (continued)

- cites examples of sustainable energy path development that involve least-cost combinations and efficient use of both renewable and nonrenewable energy sources; e.g.:
 - energy conservation/efficiency and “conservation lifestyles”
 - saving conventional sources for their “ideal” use, and supplementing where possible with renewable technology
- proposes changes to current social values and political structures that will support sustainable energy development; e.g.:
 - consumer preferences/practices
 - legislative policies and guidelines
 - support for research and development of new technology

Collaboration and Teamwork

- cooperates with group members
- shares work appropriately among group members
- negotiates solutions to problems
- displays effective communication and leadership skills

Information Sharing

- demonstrates effective use of a variety of communication media:
 - e.g., written, oral, audio-visual*
- communicates thoughts/feelings/ideas clearly to justify or challenge a position
- maintains acceptable grammatical and technical standards
- gives evidence of adequate information gathering by citing seven or more relevant information sources

RATING	ASSESSMENT CRITERIA
<p>4 3 2 1 0</p> <p>4 3 2 1 0</p> <p>4 3 2 1 0</p> <p>4 3 2 1 0</p>	<p><i>The student:</i></p> <p>Planning the Campaign</p> <ul style="list-style-type: none"> <input type="checkbox"/> defines the task <input type="checkbox"/> outlines conservation and efficiency measures that can be implemented <input type="checkbox"/> sets goals and establishes steps to achieve them <input type="checkbox"/> creates and adheres to useful timelines <input type="checkbox"/> clearly states a plan of action <input type="checkbox"/> plans and uses time effectively <input type="checkbox"/> _____ <input type="checkbox"/> _____ <p>Implementing the Campaign</p> <ul style="list-style-type: none"> <input type="checkbox"/> develops promotional materials; e.g.: <ul style="list-style-type: none"> - posters and handbills - videotaped commercials - information programs <input type="checkbox"/> acquires necessary permission to promote and display campaign materials <input type="checkbox"/> assumes and/or delegates responsibilities <input type="checkbox"/> presents and promotes the campaign to members of the school and community <input type="checkbox"/> demonstrates personal initiative in implementing the plan of action <input type="checkbox"/> _____ <input type="checkbox"/> _____ <p>Assessing the Campaign</p> <ul style="list-style-type: none"> <input type="checkbox"/> monitors and assesses the campaign <input type="checkbox"/> modifies responsibilities/actions as required to achieve goals <input type="checkbox"/> makes summative statements regarding strengths/weaknesses and general feasibility of the plan for demand-side energy management <input type="checkbox"/> _____ <input type="checkbox"/> _____ <p>Collaboration and Teamwork</p> <ul style="list-style-type: none"> <input type="checkbox"/> works with a range of peer members <input type="checkbox"/> shares work and responsibilities among group members <input type="checkbox"/> shares information and ideas through group discussions <input type="checkbox"/> negotiates solutions to problems <input type="checkbox"/> _____ <input type="checkbox"/> _____

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Content

- identifies and describes important petroleum feedstocks used in the petrochemical industry
- describes techniques used to sort, break apart, reassemble and/or blend petroleum molecules; e.g.:
 - fractionating
 - cracking
 - polymerization
 - isomerization

Content (continued)

- explains the role of temperature, pressure and catalysts in sorting and rearranging petroleum molecules
- explains applications of electronic equipment and computer technology in monitoring and controlling petrochemical processing
- identifies and describes intermediate and finished products that are derived from petrochemicals through processes of cracking, polymerization and isomerization

Collaboration and Teamwork

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Information Sharing

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Content

- identifies and compares primary and secondary manufacturing processes
- describes major categories of raw materials used in primary manufacturing; e.g.:
 - petroleum
 - natural gas
 - metallic ores
 - nonmetallic ores

Content (continued)

- identifies and describes major types of industrial (stock) materials produced through primary manufacturing processes; e.g.:
 - metallic
 - structural
 - polymeric
 - ceramic
 - composite
- describes standard forms for each type of industrial (stock) material; e.g.:
 - plate, bar and rod
 - sheet, roll and film
 - pellet and powder

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REFLECTIONS/COMMENTS

RATING	ASSESSMENT CRITERIA
<p>4 3 2 1 0</p>	<p><i>The student:</i></p> <p>Scheduling Tasks</p> <ul style="list-style-type: none"> <input type="checkbox"/> defines the task <input type="checkbox"/> identifies task components and organizes them into a logical sequence <input type="checkbox"/> uses time effectively <input type="checkbox"/> _____ <p>Identifying Marketing Components</p> <ul style="list-style-type: none"> <input type="checkbox"/> accesses basic in-school/community information sources regarding the product/service and potential customers/markets <input type="checkbox"/> describes the product/service, customer and target market <input type="checkbox"/> assesses commodity supply and/or suitability of product/service suppliers <input type="checkbox"/> identifies existing sources of competition within the marketplace <input type="checkbox"/> describes marketing alternatives for the product/service; e.g.: <ul style="list-style-type: none"> - nonregulated (open) - regulated (closed) <input type="checkbox"/> explains how products are moved to market, including the function of intermediate stops <input type="checkbox"/> describes the pricing strategy based on market analysis, supply/demand and cost factors <input type="checkbox"/> describes the advertising and promotion strategy <input type="checkbox"/> identifies intended marketing outcomes and/or product/service sales <input type="checkbox"/> summarizes opportunities and challenges relevant to the marketing plan <input type="checkbox"/> _____ <p>Assessing and Communicating the Marketing Strategy</p> <ul style="list-style-type: none"> <input type="checkbox"/> presents the marketing strategy in a logical sequence using one or more communication media <input type="checkbox"/> uses correct grammar and technical terms <input type="checkbox"/> assesses the current and potential achievement of marketing goals <input type="checkbox"/> make summative statements regarding strengths/weaknesses and general success of the marketing plan <input type="checkbox"/> _____

STANDARD IS 3 IN EACH APPLICABLE TASK

Rating Scale

- 4 exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
- 3 meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
- 2 meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.
- 1 meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.
- 0 has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

N/A Not Applicable

REFLECTIONS/COMMENTS

RATING	ASSESSMENT CRITERIA
<p>4 3 2 1 0</p> <p>4 3 2 1 0</p> <p>4 3 2 1 0</p> <p>4 3 2 1 0</p>	<p><i>The student:</i></p> <p>Scheduling Tasks</p> <ul style="list-style-type: none"> <input type="checkbox"/> defines the task <input type="checkbox"/> sets goals and establishes steps to achieve them <input type="checkbox"/> plans and uses time effectively <input type="checkbox"/> _____ <p>Gathering Relevant Information</p> <ul style="list-style-type: none"> <input type="checkbox"/> poses important questions regarding a new (or altered) policy, product and/or service <input type="checkbox"/> accesses a range of relevant in-school/community resources <input type="checkbox"/> determines accuracy/currency/reliability of information sources <input type="checkbox"/> _____ <p>Developing the Plan</p> <ul style="list-style-type: none"> <input type="checkbox"/> identifies potential market opportunities arising from: <ul style="list-style-type: none"> – product diversification/specialization – international trade <input type="checkbox"/> conducts a survey of consumer preferences and market opportunities <input type="checkbox"/> assesses relevant social, economic and environmental factors that may affect marketing plans <input type="checkbox"/> defines the policy, product and/or service and target market(s) <input type="checkbox"/> establishes viable strategies for developing the policy, product and/or service <input type="checkbox"/> identifies trade structures, policies and/or other agreements that will be required to support the marketing plan <input type="checkbox"/> summarizes opportunities and challenges relevant to the policy, product and/or markets <input type="checkbox"/> _____ <p>Presenting and Assessing the Plan</p> <ul style="list-style-type: none"> <input type="checkbox"/> presents the plan in a logical sequence using two or more communication media: <ul style="list-style-type: none"> – market conditions that led to product development – steps involved in policy/product development – recommended marketing alternatives and promotional strategies <input type="checkbox"/> uses correct grammatical convention and technical terms <input type="checkbox"/> makes summative statements regarding strengths/weaknesses and general feasibility of the plan for policy, product and/or market development <input type="checkbox"/> _____

STANDARD IS 3 IN EACH APPLICABLE TASK

Rating Scale

The student:

- 4 exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
- 3 meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
- 2 meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.
- 1 meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.
- 0 has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

N/A Not Applicable

REFLECTIONS/COMMENTS

TASK	OBSERVATION/RATING					
Preparation and Planning	4	3	2	1	0	N/A
Information Gathering	4	3	2	1	0	N/A
Communicating Goals	4	3	2	1	0	N/A
Collaboration and Teamwork	4	3	2	1	0	N/A

STANDARD IS 3 FOR EACH APPLICABLE TASK

Rating Scale

The student:

- 4 exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
- 3 meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
- 2 meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.
- 1 meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.
- 0 has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

N/A Not applicable

TASK CHECKLIST

The student:

Preparation and Planning

- demonstrates an awareness of the importance of energy conservation
- sets goals and establishes steps to achieve them
- creates and follows useful timelines
- plans and uses time effectively

Information Gathering: Residential/Commercial Environments

- accesses information relevant to conducting an energy inventory; e.g.:
 - utility costs for 12 consecutive months
 - hours of operation/occupancy
 - size of structure
 - type of construction (e.g., windows, doors)
 - efficiency ratings of existing equipment/appliances
- identifies potential areas for reducing energy use
- assesses the economic, social and environmental costs/benefits of:
 - maintaining current rates of energy use
 - upgrading existing facilities/equipment to reduce energy use
- establishes a target level of energy efficiency
- _____

Information Gathering: Transportation Sector

- accesses information relevant to conducting an energy inventory; e.g.:
 - people involved in maintenance and use
 - maintenance and operating costs for 12 consecutive months
 - vehicle selection for fuel economy
 - policies/practices to ensure driving conducive to fuel efficiency

Information Gathering: Transportation Sector (continued)

- identifies potential areas for reducing fuel consumption
- assesses the economic, social and environmental costs/benefits of:
 - maintaining current rates of fuel consumption
 - upgrading the existing systems to reduce energy use
- establishes a target level of energy efficiency
- _____

Communicating Goals

- presents information to home/school/community in a logical sequence using appropriate format
- clearly states a policy regarding energy use and energy conservation objectives
- outlines a plan of action for achieving energy-use goals
- solicits support of key stakeholder groups in implementing the plan of action
- _____

Collaboration and Teamwork

- shares work and responsibilities among group members
- shares information and ideas through group discussion
- respects the views of others
- negotiates solutions to problems
- works toward developing consensus
- _____

MANAGEMENT OUTCOMES

The student:

- identifies short- and long-term management goals for the use of an energy or mineral resource based on one type of need (e.g., residential)
- justifies management goals as the preferred alternative for resource use
- proposes a management plan for the resource consistent with management goals that includes:
 - a statement of government policies and guidelines
 - a schedule of management activities
 - a process for public involvement
 - a strategy for monitoring use and resolving potential conflicts
- presents the management plan to class/peers in a logical sequence, supporting points with sound evidence
- identifies significant features of management plans presented by class/peers for the same resource based on other needs (e.g., commercial, industrial, transportation)
- negotiates with class/peers a set of compromised management goals and strategies that support integrated resource use based on social, economic and environmental factors
- presents an integrated management plan for the resource consistent with compromised management goals and strategies which attempts to address:
 - the views of relevant stakeholder groups
 - short- and long-term goals and objectives
 - proposed management standards and guidelines
 - a process for public involvement
 - a strategy for monitoring use and resolving potential conflicts

PLANNING PROCESSES

Planning and Preparation

- sets goals and establishes steps to achieve them
- creates and adheres to useful timelines
- uses personal initiative to formulate questions and find answers
- plans and uses time effectively

Information Gathering and Processing

- accesses a variety of relevant information sources
- interprets, organizes and combines information in effective ways
- uses appropriate methods to calculate data and obtain accurate results

Collaboration and Teamwork

- cooperates with and shares work appropriately among team members
- shares information/opinions/suggestions, maintaining a balance between speaking and listening
- considers the ideas and suggestions of others, and when appropriate integrates new ideas into personal frame of reference

Negotiating and Debating

- explains positions adopted by presenting examples of possible consequences and implications
- presents a realistic plan in logical sequence supporting positions adopted
- provides a relevant and convincing rebuttal to opposing views
- negotiates solutions to problems and shared agreements by resolving divergent points of view

RATING SCALE

The student:

4	3	2	1	0
exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.	meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.	meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.	meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.	has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

STANDARD IS 2 IN MANAGEMENT OUTCOMES AND 3 IN PLANNING PROCESSES

