						Grade-Leve	Proficiency	Descriptors						
Aspect	Sub-aspect	К	1	2	3	4	5	6	7	8	9	10	11	12
	Understands the real- world problem	Makes a personal connection with one aspect of the problem personal connection: experiences and prior knowledge	Makes personal connections with aspects of the problem personal connection: experiences and prior knowledge	Makes personal connections to explore the problem personal connection: <i>experiences and prior</i> <i>knowledge</i>	Makes personal connections to explore the problem personal connection: experiences and prior knowledge	Makes general connections to understand the problem in context general connection: personal, or to similar problems	Makes general connections to understand the problem in context general connection: personal, or to similar problems	Makes relevant connections to understand a real- world problem real-world problem: contextual, relevant, related to current learning, personally/locally/globally meaningful	Makes relevant connections to understand a real- world problem real-world problem: contextual, relevant, related to current learning, personally/locally/globally meaningful	Makes relevant connections to fully understand the real- world problem in context real-world problem: contextual, relevant, related to current learning, personally/locally/globally meaningful	Makes relevant connections to fully understand the real- world problem in context <i>real-world problem:</i> contextual, relevant, related to current learning, personally/locally/globally meaningful	Makes connections necessary to understand the context and implications of the real-world problem real-world problem contextual, relevant, <i>related to current</i> <i>learning,</i> <i>personally/locally/globally</i> <i>meaningful</i>	Makes connections necessary to investigate and understand new contexts and implications of real- world problems real-world problem: contextual, relevant, related to current learning, personally/locally/globally meaningful	Makes connections necessary to investigate and understand new contexts and implications of real- world problems real-world problem: contextual, relevant, related to current learning, personally/locally/globally meaningful
Interprets	Extracts relevant information	Identifies a significant fact about the problem	Identifies a significant fact and gathers other information from the problem	Identifies and gathers most of the significant information from the presented problem to assist in solving it	Identifies and gathers most of the significant information from the presented problem to assist in solving it	Gathers relevant information from the presented problem to assist in solving it	Gathers relevant information from the presented problem to assist in solving it	Extracts relevant information from the presented problem as needed to solve it	Extracts relevant information from the presented problem as needed to solve it	Extracts relevant information from the presented problem and other resources as needed to solve the problem	Extracts relevant information from the presented problem and other resources as needed to solve the problem	Extracts and organizes relevant information from the presented problem and a variety of other external resources to solve the problem	Extracts and organizes relevant information from the presented problem and a variety of other external resources to solve the problem	Extracts and organizes relevant information from the presented problem and a variety of other external resources to solve the problem
	Identifies parameters and limitations	Understands that problems have parameters parameters : factors and conditions that define the problem	Identifies a clearly defined parameter needed to solve the problem parameters: factors and conditions that define the problem	Identifies some of the clearly defined parameters needed to solve the problem parameters : factors and conditions that define the problem	Identifies most of the clearly defined parameters needed to solve the problem parameters : factors and conditions that define the problem	Identifies all clearly defined parameters needed to solve the problem parameters: factors and conditions that define the problem	Identifies all clearly defined parameters needed to solve the problem parameters: factors and conditions that define the problem	Identifies only relevant explicit parameters needed to solve the problem parameters : factors and conditions that define the problem	Identifies only relevant explicit parameters needed to solve the problem parameters: factors and conditions that define the problem	Identifies relevant explicit parameters and limitations needed to solve the problem parameters: factors and conditions that define the problem limitations: reasonable constraints in a real-world problem or context	Identifies relevant explicit parameters and limitations needed to solve the problem parameters : factors and conditions that define the problem limitations : reasonable constraints in a real-world problem or context	Identifies relevant explicit parameters and infers implicit limitations needed to solve the problem parameters: factors and conditions that define the problem limitations: reasonable constraints in a real-world problem or context	Identifies explicit and implicit parameters and limitations needed to solve the problem parameters : factors and conditions that define the problem limitations : reasonable constraints in a real-world problem or context	Identifies explicit and implicit parameters and limitations needed to solve the problem parameters : factors and conditions that define the problem limitations : reasonable constraints in a real-world problem or context

							Grade-Level	Proficiency [Descriptors		
A	spect	Sub-aspect	к	1	2	3	4	5	6	7	8

	Translates the scenario into a mathematical problem (mathematizes)	Recognizes the mathematical competencies and content needed to solve the problem content: refer to <u>Math</u> <u>curriculum</u>	Recognizes the mathematical competencies and content needed to solve the problem content: refer to <u>Math</u> curriculum	Identifies the mathematical competencies and content needed to solve the problem content: refer to <u>Math</u> <u>curriculum</u>	Identifies the mathematical competencies and content needed to solve the problem content: refer to <u>Math</u> <u>curriculum</u>	Applies the mathematical understanding needed to partially translate a familiar scenario into a mathematical problem mathematical understanding: refer to <u>Math curriculum</u>	Applies the mathematical understanding needed to partially translate a familiar scenario into a mathematical problem mathematical understanding: refer to <u>Math curriculum</u>	Applies the mathematical understanding needed to translate a familiar scenario into a mathematical problem mathematical understanding: refer to Math curriculum familiar: previously seen or modelled	Applies the mathematical understanding needed to translate a familiar scenario into a mathematical problem mathematical problem mathematical understanding: refer to Math curriculum familiar: previously seen or modelled	Applies the mathematical understanding needed to translate an unfamiliar scenario into a mathematical problem mathematical understanding: refer to <u>Math curriculum</u> unfamiliar: previously unseen or unmodelled	Applies the mathematical understanding needed to translate an unfamiliar scenario into a mathematical problem mathematical understanding: refer to <u>Moth curriculum</u> unfamiliar: previously unseen or unmodelled	Applies the mathematical understanding needed to translate an unfamiliar scenario into a mathematical problem mathematical understanding: refer to <u>Moth curriculum</u> unfamiliar: previously unseen or unmodelled	Applies the mathematical understanding needed to translate a complex, unfamiliar scenario into a mathematical problem mathematical understanding: refer to <u>Moth curriculum</u> unfamiliar: previously unseen or unmodelled	Applies the mathematical understanding needed to translate a complex, unfamiliar scenario into a mathematical problem mathematical understanding: refer to <u>Math curriculum</u> unfamiliar: previously unseen or unmodelled
Applies	Represents the mathematical problem (visualizes)	Represents the mathematical problem, using concrete materials and/or pictures	Represents the mathematical problem, using concrete materials and diagrams	Represents the mathematical problem, using concrete materials and diagrams	Represents the mathematical problem, using concrete materials, diagrams, and/or some familiar equations familiar : previously seen or modelled	Represents the mathematical problem, using concrete materials, diagrams, and/or some familiar equations familiar : previously seen or modelled	Represents the mathematical problem, using concrete materials, diagrams, and/or equations	Accurately represents the mathematical problem, using a variety of models models: e.g., concrete materials, diagrams, equations	Accurately represents the mathematical problem, using a variety of models models: e.g., concrete materials, diagrams, equations	Clearly represents the mathematical problem by choosing an appropriate model(s) clearly : immediately demonstrating understanding appropriate : refer to <u>Math curriculum</u> models : e.g., concrete materials, diagrams, equations	Clearly represents the mathematical problem by choosing an appropriate model(s) clearly: immediately demonstrating understanding appropriate: refer to <u>Moth curriculum</u> models: e.g., concrete materials, diagrams, equations	Clearly and accurately represents the problem by strategically choosing an effective model(s) clearly : immediately demonstrating understanding effective : fits the student's understanding and ability models : e.g., concrete materials, diagrams, equations	Clearly and accurately represents the problem in context by strategically choosing an effective model(s) clearly: immediately demonstrating understanding in context: the representation is appropriate to the problem or scenario effective: fits the student's understanding and ability models: e.g., concrete materials, diagrams, equations	Clearly and accurately represents the problem in context by strategically choosing an effective model(s) clearly: immediately demonstrating understanding in context: the representation is appropriate to the problem or scenario effective: fits the student's understanding and ability models: e.g., concrete materials, diagrams, equations
	Develops a plan of approach	Experiments with problem solving using prior knowledge	Develops a straightforward plan of approach, using prior knowledge and mathematical tools and strategies	Develops a basic plan of approach, using familiar mathematical tools and/or strategies basic: could be one step familiar: previously seen or modelled	Develops a basic plan of approach, using familiar mathematical tools and/or strategies basic: could be one step familiar: previously seen or modelled	Develops a sequence of steps that applies familiar mathematical tools and/or strategies familiar : previously seen or modelled	Develops a logical sequence of steps that applies familiar mathematical tools and/or strategies familiar: previously seen or modelled	Develops an organized and intentional sequence of steps that applies appropriate mathematical tools and/or strategies appropriate: refer to <u>Math curriculum</u>	Develops a logical and organized plan that applies appropriate mathematical tools and/or strategies plan: an intentional sequence of steps with an end goal appropriate: refer to <u>Math curriculum</u> strategies: e.g., using a tool (calculator), picture, graph, equation	Uses mathematical reasoning to develop a logical and organized plan that applies appropriate mathematical tools and/or strategies plan : an intentional sequence of steps with an end goal appropriate : refer to <u>Math curriculum</u> strategies : e.g., using a tool (calculator), picture, graph, equation	Uses mathematical reasoning to develop a logical and organized plan that applies appropriate mathematical tools and/or strategies plan: an intentional sequence of steps with an end goal appropriate: refer to <u>Moth curriculum</u> strategies: e.g., using a tool (calculator), picture, graph, equation	Uses mathematical reasoning to develop a logical, organized, and effective plan that applies appropriate mathematical tools and/or strategies plan: an intentional sequence of steps with an end goal appropriate: refer to <u>Math curriculum</u> strategies: e.g., using a tool (calculator), algorithm, picture, graph; Social Studies/Science: evidence from text	Uses mathematical reasoning to develop a logical, organized, and effective multi-step plan that applies appropriate mathematical tools and/or strategies plan: an intentional sequence of steps with an end goal appropriate: refer to <u>Math curriculum</u> strategies: e.g., using a tool (calculator), algorithm, picture, graph; Social Studies/Science: evidence from text	Uses mathematical reasoning to develop a logical, organized, and effective multi-step plan that applies appropriate mathematical tools and/or strategies plan: an intentional sequence of steps with an end goal appropriate: refer to <u>Math curriculum</u> strategies: e.g., using a tool (calculator), algorithm, picture, graph; Social Studies/Science: evidence from text

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						Grade-Level	Proficiency [Descriptors		
Aspec	Sub-aspect	к	1	2	3	4	5	6	7	8

Aspect	Sub-aspect	к	1	2	3	4	5	6	7	8	9	10	11	12
	Estimates reasonably in context	Estimates the scope of the answer scope: e.g., range, size, shape, time	Estimates the scope of the answer scope: e.g., range, size, shape, time	Estimates reasonably within known parameters, using benchmarks benchmarks : e.g., 25, 50, 100, distance, colour, rhythm, pattern	Estimates reasonably within identified parameters, using benchmarks and information from the scenario benchmarks : e.g., up to 1000, distance, colour, rhythm, pattern	Estimates reasonably within identified parameters, using benchmarks and relevant information from the scenario benchmarks: e.g., up to 10 000, fractions, decimals, distance, colour, rhythm, pattern	Estimates reasonably within identified parameters, using benchmarks and relevant information from the scenario benchmarks : e.g., up to 1 000 000, fractions, decimals, distance, colour, rhythm, pattern	Estimates reasonably within the context and parameters of the scenario, using benchmarks benchmarks : e.g., thousandths to billions, fractions, decimals, area, rhythm, pattern	Estimates reasonably within the context and parameters of the scenario, using benchmarks benchmarks : <i>e.g.</i> , thousandths to billions, length, area; Arts: rhythm, pattern; Science: trend, frequency; Language Arts: pattern; ADST: area, materials needed	Estimates reasonably within the context and parameters of the scenario, using appropriate benchmarks benchmarks: e.g., perfect squares, volume; Arts: rhythm, pattern; Science: trend, frequency; Language Arts: pattern; ADST: area, volume, materials needed	Estimates reasonably within the context and parameters of the scenario, using appropriate benchmarks benchmarks : e.g., perfect squares, volume; Arts: rhythm, pattern; Science: trend, frequency; Language Arts: pattern; ADST: area, volume, materials needed	Estimates reasonably in context, within parameters, and considering limitations	Estimates reasonably in context, within parameters, and considering limitations; explains reasoning for estimate	Estimates reasonably in context, within parameters, and considering limitations; explains reasoning for estimate
Solves	Solves the mathematical problem	Finds a solution, using play, concrete materials, or models	Finds a solution, using play, concrete materials, or models	Finds a solution, using mathematical tools and/or strategies strategies: e.g., play, concrete materials, models	Finds a solution by applying familiar mathematical tools and/or strategies strategies: e.g., play, concrete materials, models	Finds a solution by applying familiar mathematical tools and/or strategies strategies: e.g., equations, play, concrete materials, models	Finds a solution by applying familiar mathematical tools and/or strategies strategies: e.g., equations, play, concrete materials, models	Finds a solution, using appropriate strategies strategies: e.g., using a tool (calculator), picture, graph, equations, concrete materials, and/or models	Finds a solution, using appropriate strategies strategies: e.g., using a tool (calculator), picture, graph, equations, concrete materials, and/or models	Solves the mathematical problem, using effective strategies as needed effective: the end goal can be met strategies: e.g., using a tool (calculator), picture, graph, equations, concrete materials, and/or models	Solves the mathematical problem, using effective strategies as needed effective: the end goal can be met strategies: e.g., using a tool (calculator), picture, graph, equations, concrete materials, and/or models	Solves the mathematical problem by following a logical plan and using efficient strategies as needed plan: an intentional sequence of steps with an end goal efficient: well-organized and competent strategies: e.g., using a tool (calculator), algorithm, picture, graph; Social Studies/Science: evidence from text	Solves the mathematical problem by following a logical, multi-step plan and using efficient strategies as needed plan: an intentional sequence of steps with an end goal efficient: well-organized and competent strategies: e.g., using a tool (calculator), algorithm, picture, graph; Social Studies/Science: evidence from text	Solves the mathematical problem by following a logical, multi-step plan and using efficient strategies as needed plan: an intentional sequence of steps with an end goal efficient: well-organized and competent strategies: e.g., using a tool (calculator), algorithm, picture, graph; Social Studies/Science: evidence from text
	Verifies accuracy of the mathematical solution	Compares their solution with those of their teacher and/or peers	Compares their solution with those of their teacher and/or peers	Verifies the accuracy of their solution by comparing it with a variety of proofs/checks, including estimation	Verifies the accuracy of their solution, using familiar mathematical strategies and/or by comparing with their estimate familiar: previously seen or modelled	Verifies the accuracy of their solution, using reasonable estimates and other familiar mathematical strategies familiar : previously seen or modelled	Verifies the accuracy of their solution, using reasonable estimates and other familiar mathematical strategies familiar : previously seen or modelled	Verifies the accuracy of their results and/or solution, using reasonable estimates and other familiar strategies familiar : previously seen or modelled	Verifies the accuracy of their results and/or solution, using reasonable estimates and other familiar strategies familiar : previously seen or modelled (e.g., using a tool [calculator], alternate algorithm, picture, graph)	Verifies the accuracy of their results and/or solution, using reasonable estimates and other familiar strategies; identifies factors that could affect accuracy of results familiar : previously seen or modelled (e.g., using a tool [calculator], alternate algorithm, picture, graph)	Verifies the accuracy of their results and/or solution, using reasonable estimates and other familiar strategies; identifies factors that could affect accuracy of results familiar : previously seen or modelled (e.g., using a tool (calculator), alternate algorithm, picture, graph)	Verifies the accuracy of their results and/or solution, using reasonable estimates and other familiar strategies; describes how factors affect accuracy of results familiar : previously seen or modelled (e.g., using a tool [calculator], alternate algorithm, picture, graph)	Verifies the accuracy of their results and/or solution, using reasonable estimates and other familiar strategies; compares and evaluates how factors affect accuracy of results familiar : previously seen or modelled (e.g., using a tool [calculator], alternate algorithm, picture, graph)	Verifies the accuracy of their results and/or solution, using reasonable estimates and other familiar strategies; compares and evaluates how factors affect accuracy of results familiar : previously seen or modelled (e.g., using a tool [calculator], alternate algorithm, picture, graph)

						Grade-Leve	l Proficiency	Descriptors						
Aspec	t Sub-aspect	к	1	2	3	4	5	6	7	8	9	10	11	12
	Reflects on the reasonableness of the solution in context	Identifies a reasonable solution in relation to the original problem/scenario	Identifies a reasonable solution in relation to the original problem/scenario	Reflects on the reasonableness of a solution in relation to the original problem/scenario	Reflects on the reasonableness of a solution in relation to the original problem/scenario	Reflects on the reasonableness of their solution in relation to the original problem/scenario	Reflects on the reasonableness of their solution in relation to the original problem/scenario	Reflects on the reasonableness of their solution within the context of the problem reasonableness: rationality, practicality context of the problem: e.g., Social Studies/Science: evidence from text; Arts: soliciting feedback	Reflects on the reasonableness of their solution within the context of the problem reasonableness: rationality, practicality context of the problem: e.g., Social Studies/Science: evidence from text; Arts: soliciting feedback	Reflects on the validity of their solution within the context of the problem validity: accuracy in context context of the problem: e.g., Social Studies/Science: evidence from text; Arts: soliciting feedback	Reflects on the validity of their solution within the context of the problem validity: accuracy in context context of the problem: e.g., Social Studies/Science: evidence from text; Arts: soliciting feedback	Reflects on the validity of their solution, identifying contextual factors that may affect their answer validity: accuracy in context solution: e.g., lab results, map, product, model contextual factors: e.g., Social Studies/Science: evidence from text; Arts: soliciting feedback	Reflects on the validity and reliability of their processes and solutions and describes how contextual factors may affect their answer validity: accuracy in context reliability: reproducibility of results contextual factors: e.g., Social Studies/Science: evidence from text; Arts: soliciting feedback	Reflects on the validity and reliability of their processes and solutions and describes how contextual factors may affect their answer validity: accuracy in context reliability: reproducibility of results contextual factors: e.g., Social Studies/Science: evidence from text; Arts: soliciting feedback
Analyzes	Evaluates alternative approaches	Identifies an alternative approach approach : own approach, peer- or teacher-driven approach	Identifies an alternative approach approach : own approach, peer- or teacher-driven approach	Explores an alternative approach approach : own approach, peer- or teacher-driven approach	Explores alternative approaches approach : own approach, peer- or teacher-driven approach	Compares and contrasts alternative approaches approachs : own approach, peer- or teacher-driven approach	Compares and contrasts alternative approaches: own approach, peer- or teacher-driven approach	Describes the benefits and limitations of alternative approaches approaches : own approach, peer- or teacher-driven approach	Describes the benefits and limitations of alternative approaches approaches: own approach, peer- or teacher-driven approach	Evaluates the benefits and limitations of alternative approaches approaches : own approach, peer- or teacher-driven approach	Evaluates the benefits and limitations of alternative approaches approaches : own approach, peer- or teacher-driven approach, comparison with research- based approaches	Evaluates the efficiency and effectiveness of alternative approaches approaches: own approach, peer- or teacher-driven approach, comparison with research- based approaches	Evaluates the efficiency and effectiveness of alternative approaches and possible improvements approaches: own approach, peer- or teacher-driven approach, comparison with research- based approaches	Evaluates the efficiency and effectiveness of alternative approaches and possible improvements approach , peer- or teacher-driven approach, comparison with research- based approaches
	Revises approach as needed	Experiments with a recommended alternative approach to solve the problem	Experiments with a recommended alternative approach to solve the problem	Selects an alternative approach to solve the problem	Selects an alternative approach to solve the problem	Identifies and experiments with an alternative approach to solve the problem	Identifies and experiments with an alternative approach to solve the problem	Refines approach, using the benefits and limitations of alternative approaches to solving the problem refines : improves through small changes	Refines approach, using the benefits and limitations of alternative approaches to solving the problem refines: improves through small changes	Revises approach, using the benefits and limitations of alternative approaches to solving the problem revises: reflects and adjusts	Revises approach based on their evaluation of alternative approaches to solving the problem revises: reflects and adjusts	Revises approach, using the benefits and limitations of alternative approaches to compare alternative solution(s) to the problem revises : reflects and adjusts	Redesigns approach to improve efficiency of process or accuracy of solution to the problem redesigns: iteratively reflects and adjusts	Redesigns approach to improve efficiency of process or accuracy of solution to the problem redesigns: iteratively reflects and adjusts

						Grade-Leve	Proficiency	Descriptors						
Aspect	Sub-aspect	К	1	2	3	4	5	6	7	8	9	10	11	12
	Represents processes and solution	Represents the problem-solving process, using numbers, pictures, and/or manipulatives	Represents the problem-solving process, using words, numbers, pictures, symbols, and/or manipulatives	Represents the problem-solving process, using familiar tools familiar tools : e.g., manipulatives, symbols, graphic organizers, charts	Represents processes and solution by selecting and using reasonable tools reasonable tools : e.g., table, manipulative, graphic organizer, array, model	Represents processes and solution by selecting and using reasonable tools reasonable tools : e.g., model, chart, map, table, graph, chart, array	Represents processes and solution by selecting and using reasonable tools reasonable tools: e.g., model, chart, map, table, graph, chart, array	Represents the complete process and solution by selecting and using appropriate tools appropriate tools : e.g., model, chart, map, table, graph, chart, array	Represents the complete process and solution by selecting and using appropriate tools appropriate tools: e.g., model, chart, map, table, graph, chart, array, equation	Effectively represents the complete process and solution, using appropriate presentations effectively: student selects an appropriate number of steps appropriate presentations: e.g., bulleted explanation, equation, graph, model, map, table, array	Effectively represents the complete process and solution, using appropriate presentations effectively: student selects an appropriate number of steps appropriate presentations: e.g., buileted explanation, equation, graph, model, map, table, diagram	Represents complex processes and solutions, using a variety of presentations in a manner that is suitable to the context presentations: e.g., bulleted explanation, equation, graph, model, map, table, diagram	Represents complex processes and solutions; chooses a presentation that suits the purpose, context, and audience presentation : e.g., proof, model, equation, graph, model, map, table, diagram	Represents complex processes and solutions; chooses a presentation that suits the purpose, context, and audience presentation : e.g., proof, model, equation, graph, model, map, table, diagram
Communicates	Explains the approach taken	Identifies one step of their problem-solving approach	Outlines their problem-solving approach	Outlines their problem-solving approach, using familiar mathematical language familiar: previously seen or modelled mathematical language: refer to Math curriculum	Describes their problem-solving approach, using familiar mathematical language familiar : previously seen or modelled mathematical language : refer to <u>Math curriculum</u>	Describes their problem-solving approach, using familiar mathematical language familiar : previously seen or modelled mathematical language : refer to <u>Math curriculum</u>	Describes their problem-solving approach, using familiar mathematical language familiar : previously seen or modelled mathematical language : refer to <u>Math curriculum</u>	Accurately explains their problem-solving approach approach : e.g., process: making a model; tool: manipulatives; strategy: using an equation	Accurately explains their problem-solving approach approach : e.g., process: making a model; tool: calculator; strategy: using an equation	Accurately explains their problem-solving approach, identifying its limitations and assumptions approach : e.g., process: making a diagram; tool: calculator; strategy: using an equation	Accurately explains their problem-solving approach, identifying its limitations and assumptions approach : e.g., process: making a diagram; tool: calculator; strategy: using an equation	Explains their problem-solving approach, describing any limitations and assumptions approach : e.g., process: making a flowchart; tool: calculator; strategy: using a familiar algorithm or evidence from text	Explains their problem-solving approach accurately and in detail, evaluating the effect of any assumptions or limitations approach: e.g., process: making a flowchart; tool: calculator; strategy: using an algorithm or evidence from text evaluating: assessing the implications	Explains their problem-solving approach accurately and in detail, evaluating the effect of any assumptions or limitations approach: e.g., process: making a flowchart; tool: calculator; strategy: using an algorithm or evidence from text evaluating: assessing the implications
	Defends decisions and assumptions	Identifies one problem-solving decision	Outlines one problem- solving decision	Describes one problem-solving decision and a supporting reason	Describes their problem-solving decisions and supporting reasons	Explains their problem-solving decisions and supporting reasons	Explains their problem-solving decisions and supporting reasons	Presents a rationale for their problem- solving decisions and assumptions	Presents a rationale for their problem- solving decisions and assumptions	Presents a logical argument and justifies their decisions and assumptions	Presents a logical argument and justifies their decisions and assumptions	Presents a valid, logical argument to justify their decisions about the selected approach and assumptions, and describes the effects of these choices	Presents a valid, logical argument to justify their decisions about the selected approach, evaluating assumptions and the effects of their choices evaluating : assessing the implications	Presents a valid, logical argument to justify their decisions about the selected approach, evaluating assumptions and the effects of their choices evaluating : assessing the implications