

A Performance Assessment Model

Data Report on the
New York Performance
Standards Consortium



A practitioner-developed &
student-focused performance
assessment system

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www.performanceassessment.org

New York Performance Standards Consortium

The New York Performance Standards Consortium (Consortium) has developed a proven practitioner-developed, student-focused performance assessment system for its 38 member schools in New York City and State. Its validity was confirmed by the NY State Education Department and the NY Board of Regents in 1998 and reaffirmed through variances since then. The main components of the system are:

- ▶ Practitioner-designed and student-focused assessment tasks
- ▶ External evaluators for written and oral student work
- ▶ Moderation studies to establish reliability
- ▶ Extensive professional development
- ▶ Predictive college enrollment of graduates

Additional components include an emphasis on:

- ▶ Inquiry-based teaching and learning
- ▶ Discussion-based classrooms
- ▶ Student choice and voice
- ▶ High expectations for all

Consortium schools have developed a culture focused on deeper learning skills. Freed of the pressures to “teach to the test,” Consortium teachers developed a multi-layered student-focused curriculum in addition to and beyond the assessment tasks. Not only assessment but instruction, too, reflect the value of open-ended questioning; intensive reading, writing, and discussion; student ownership of their work; and assignments extended over longer periods of time than the more conventional standardized approach to assessment and instruction.



Time and Space to Innovate

The Consortium has been able to thrive in New York because the state provided it with time and a “safe space” to innovate, develop, and refine its system. For decades, while we have witnessed the serious shortcomings of large-scale assessment systems imposed on teachers and classrooms “from above,” the Consortium system—teacher-designed and flourishing at the school and local levels—has nurtured a committed cadre of practitioners who believe in the system and have devoted years of work to grow it and refine it.

The Consortium includes a range of schools, from transfer schools (or “second-chance” schools) to schools in the International Network to Title One schools and schools with both the urban poor and the urban middle class. All types of schools and students have benefited, including schools with large populations of students with IEPs, who have successfully earned diplomas.

Multiple Outcomes of NY Performance Standards Consortium

The Consortium approach produces far better outcomes when compared with overall public school data. While standardized assessments limit targeted outcomes to grades on standardized exams, the Consortium broadens the definition of outcomes by looking at:

- ▶ Graduation Rates: NYC and Upstate
- ▶ ELLS and Students with Disabilities
- ▶ Meeting of Academic Targets
- ▶ 18 Month College Enrollment
- ▶ 4 Year College Readiness
- ▶ Quality of School Environment



Graduation Rates and College Readiness

The results for Consortium graduates have been far-reaching and positive. The Consortium graduation rate exceeds that of the overall corresponding public schools (see Charts 2-3). The Consortium has a proven record of producing graduates who go on to successful undergraduate careers. All this was accomplished despite the fact that the Consortium schools' pool of students include more students living at the poverty level, a higher percentage of Hispanic students and English Language Learners, and a higher percentage of students with lower English and math skills than the overall NYC public high school population (see Chart 1).



Chart 1: Demographics of Consortium and NYC Public High Schools

	Consortium	Citywide
% Black	24.5%	26.3%
% Hispanic	51.5%	40.1%
% English Language Learners	18.6%	11.5%
% Students with Disabilities	18.5%	17.0%
% Temporary Housing	13.0%	10.0%
Average Incoming Scores — Math	2.71	2.91
Average Incoming Scores — ELA	2.82	2.98
Economic Need Index	74.0%	71.0%

Source: These results were calculated using publicly available NYC DOE data (Accessed November 2019 and January 2020): 2018-2019 School Quality Guide Citywide Data; High School Citywide Results; Transfer High School Citywide Results; * New York City Graduation Rates Class of 2019 (2015 Cohort)

Note: Consortium graduation data based on 2 or more years of enrollment in a Consortium member school.

The Tasks

Performance-based Assessment Tasks (PBATs): Multiple ways to express learning

All Consortium schools require students to complete academic tasks to demonstrate college and career readiness and to qualify for graduation. Topics emerge from class readings and discussion. In some classes, the tasks are crafted by the teacher and in other instances by the student. Thus, each semester different questions may be developed. All graduation level tasks are evaluated using the Consortium rubrics.

Literature Task

The student will write a well-developed literary analysis, using a text of appropriate complexity and showing connections between the text and other substantial issues, such as a larger issue or theme, another work of literature, the historical or biographical context, a filmed version of the text, or noted works of relevant criticism.

The paper is organized around a compelling argument and thesis, uses relevant evidence and quotations that support the argument, and provides meaningful interpretation of texts. In addition to demonstrating accepted conventions for writing, the paper also has evidence of a student's voice and style.

Each student also presents orally, either defending the paper or by demonstrating ability to adapt skills to a new text, which the student has read independently.

External evaluators assess both written and oral work using the Consortium rubric.

Sample Literature PBATs:

Who is an American? Does the American dream change depending upon the identity of the dreamer?
What qualifies as a triumph or a failure?

Who emerges heroic and who allows the pursuit of the dream to turn him villainous? Use two of the novels we've read this semester to explore these questions.

In his essay, "An Image of Africa: Racism in Conrad's *Heart of Darkness*," Chinua Achebe argues that Conrad is a "bloody racist." Based on the ideas made explicit in his essay and those implicit in Conrad's novel, do you agree or disagree with Achebe's argument? Is the real monster in *Heart of Darkness* Conrad himself? Or did Achebe misconstrue Conrad's intentions, which were to expose the evils of colonialism?

The conflict between moral law and state law in *Antigone* and *A View From the Bridge*

The role of gender in the tragedies of *Othello* and *Antigone*

Math Task

The math PBAT is built around non-routine problem solving at higher levels of mathematics. Students write a narrative about their journey solving a non-routine problem by describing their mathematical thinking.

The student is expected to use sound mathematical procedures accurately when solving problems; justify all mathematical statements efficiently and accurately; and create appropriate models, inherent to the task, that represent the problem accurately and elegantly.

Communication is an important aspect of the mathematical task. Students are expected to use mathematical terminology and notation, communicate clearly the process and solution used, and make predictions. Students will also discuss how mathematical concepts interconnect, build on each other, and apply to real-world situations.

External evaluators assess both written and oral work using the Consortium rubric.

Sample Math PBATs:

Derivation of Summation

Will You Remain Standing?

The Tower of Hanoi

The Game of X Tokens

Sierpinski's Triangle

A Walk to the Door (Zeno's Paradox)

Cube Paths

Social Studies Task

The social studies task requires students to develop a text-based analytical research paper in history or the social sciences. The paper consists of an argument organized around an idea, thesis or question and is supported by accurate and persuasive evidence from both primary and secondary sources. Alternative points of view are presented, explained, and analyzed. In addition to demonstrating accepted conventions of standard English, the paper is also expected to show evidence of a student's voice and writing style.

External evaluators assess both written and oral work using the Consortium rubric.

Sample Social Studies PBATs:

Why did Lincoln support abolition? Did his views change over time, and why?

Looking Abroad—France and the headscarf ban in public schools.

How has France defined national identity in comparison with the U.S.? What conflicts have arisen when different cultures meet? How is multiculturalism defined or restricted? Discuss what can be learned from this case study about our own society.

Why did the United States lose the Vietnam War? Consider the role of the American media, the anti-war movement, and the Pentagon Papers.

The Stimulus Package: Is this the decline of the American Dream? An in-depth investigation of one aspect of the Recovery Act of 2009, including funding sources, allocations, and arguments for and against the legislation.

What are the connections between population trends and immigration laws? Analyzing U.S. Census statistics for race, language, income, education, and other basic demographic indicators, nationally and for NYC.

Science Task

The science task is an extended science experiment, “big data” analysis or engineering design that grows out of research studied in class. In an experimental science project, students contextualize and develop a hypothesis in response to an experimental question, develop the design for carrying out their research, and collect or curate data. Engineering design students identify a problem and prototype and test their solutions. Necessary charts, tables, and graphs are generated to facilitate analysis of the data and interpretation of the results. Students suggest revisions for the experimental plan or design.

External evaluators assess both written and oral work using the Consortium rubric.

Sample Science PBATs:

How do particle size and density influence the erosion of beach sand? What are the alternatives to beach replenishment?

Mitochondrial DNA Project: Student researches origin of modern humans, then analyzes own mitochondrial DNA sequences to determine if the data support the hypothesis.

Green Science Research: Students design and carry out an investigation on a topic relating to environmental health and/or environmental justice, on either a local or more global level.

Engineering Designs in Response to Student-Identified Problems:

- GHB Lip Gloss Detector
- The Detection & Collection of Fishing Nets in Aquatic Ecosystems

Supplementary Tasks

In addition to the four required academic tasks, schools may choose to include supplementary tasks. Below are a few of the tasks that individual schools have chosen to include among their curricular and graduation requirements.

The Arts

Extensive work in one of the arts and public presentation of accomplishments. Includes visual arts, music, playwriting, theater, ceramics, poetry, fiction writing. Visiting artists provide critiques and feedback.

Arts Criticism

Using the resources available in the city, students visit galleries and museums, choose an artist to study in-depth, develop and conduct interviews of those active in the arts, and present to students and others.

Internships

In-depth internship over a significant amount of time at an organization—private or public—or with an individual practitioner in an area of concern and interest to the student. Followed by a presentation to students and others.

World Language

Students learn a language other than English and develop comfort and fluency in the language.

**New York Performance Standards Consortium
Performance Assessment: Literary Analysis**

Student _____

Title /Texts _____

Circle one: **Written** **Oral**Circle one: **Teacher** **External Evaluator**

Evaluator (Print name) _____

Overall Holistic evaluation

Signature _____

Date _____

09/2019

Performance Indicator	Outstanding	Good	Competent	Needs Revision
Organization	- Generates a clear thesis or central idea that makes a compelling point - Uses relevant, convincing evidence and quotations that thoroughly support thesis or central idea - Makes explicit and elegant transitions from one idea to next, developing thesis or central idea effortlessly	- Generates a clear thesis or central idea that make an interesting point - Uses relevant evidence and quotations that support central thesis or central idea - Makes seamless transitions, flows easily from one idea to the next, developing thesis or central idea cohesively	- Has an identifiable thesis or central idea, though may lack focus at times - Uses mostly relevant evidence and quotations to support thesis or central idea - Has mostly coherent organization - Uses transitions but may lack smooth flow from one idea to the next	- Has a central idea, but vague, unfocused, and undeveloped - Unfocused organization - Insufficient, irrelevant, or no evidence used to support a central idea - Few or incorrect use of transitions so ideas do not flow smoothly
Analysis & Interpretation	- Provides deep insight and creates meaningful interpretation of text(s) - Elaborates and extends thesis or central idea and meaning of supporting evidence; answers question, So what? - May consider author's language, craft, and/or choice of genre	- Creates meaningful interpretation of text(s) - Explores thesis or central idea and meaning of supporting evidence; answers question, So what? - May consider author's language, craft, and/or choice of genre	- Provides basic interpretation of text(s) though somewhat limited exploration of meaning - Develops a thesis or central idea and explains choice of evidence and quotations, but has not fully developed their meaning	- Limited or no meaningful interpretation of texts - Uses faulty analysis or merely summarizes - Insufficient or no use of evidence or appropriate quotations
Style and Voice	- Evidence of passion for subject or deep curiosity - Writer willing to take risks - Displays intellectual engagement - Creative, clear, and appropriate use of language and word choice based on the task	- Evidence of a mind at work, grappling with ideas - Clear and appropriate use of language and word choice based on the task	- Responds to the question asked and communicates ideas clearly - Shows some awareness of appropriate language and word choice based on the task	- Responds to question asked but lacks clarity - Shows little or no evidence of formal or appropriate use of language and word choice
Connections (Optional)	Makes innovative and insightful connection between a text and one of the following: Another work of literature <i>or</i> Historical/cultural context <i>or</i> Biographical context <i>or</i> Film version of text <i>or</i> Substantial criticism <i>or</i> Creative element (e.g., writing of poetry based on poet being analyzed)	Makes insightful connection between text and one of the following: Another work of literature <i>or</i> Historical/cultural context <i>or</i> Biographical context <i>or</i> Film version of text <i>or</i> Substantial criticism <i>or</i> Creative element (e.g., writing a poem based on poet being analyzed)	Establishes some connection between text and one of the following: Another work of literature <i>or</i> Historical or cultural context <i>or</i> Biographical context <i>or</i> Film version of text <i>or</i> Substantial criticism <i>or</i> Creative element (e.g., writing a poem based on poet being analyzed)	Connection is attempted, but it is inappropriate or not relevant to thesis or ideas that are the main focus of the paper
Conventions (for writing assignment only)	Mechanical and grammatical errors are rare or non-existent; follows accepted conventions for quotations and citations	Few mechanical or grammatical errors; follows accepted conventions for quotations and citations	Some mechanical or grammatical errors but communication is not impaired; demonstrates knowledge of accepted conventions for quotations	Communication is impaired by errors; little or no use of conventions for quotations and citations
Presentation (for oral component only)	Able to respond to questions and expand on ideas during discussion; communicates ideas clearly in appropriate, sophisticated, and original way to audience; presents complex, accurate, substantive ideas and information clearly	Able to respond to questions and expand somewhat on ideas during discussion; communicates clearly in appropriate and original way to audience; presents accurate, substantive ideas and information clearly	Able to respond accurately to questions though may have difficulty expanding on ideas; communicates clearly in appropriate way to audience; presents information accurately	Does not respond well to questions during discussion; unclear or inappropriate presentation to audience; some information presented may be inaccurate

Click [here](#) to read background information on recent changes to the Literature Rubric.

New York Performance Standards Consortium
Performance Assessment: Mathematics

Student _____

Project Title (e.g. Mathematical Modeling, The Can Project): _____

Project Topic (e.g. Linear programming, Volume-surface area optimization): _____

Circle One: Written Oral

Circle One: Teacher External Evaluator

Evaluator (Print name) _____

Overall Holistic Evaluation _____ **Signature** _____ **Date** _____

09/2016

Performance Indicators	Outstanding	Good	Competent	Needs Revision
Problem Solving	Selects appropriate and efficient strategies to solve non-routine problems. Provides in-depth analysis of strategies Executes conceptually sound mathematical procedures accurately.	Selects appropriate and efficient strategies to solve non-routine problems. Provides some analysis of strategies Executes conceptually sound mathematical procedures with minor computational errors.	Selects appropriate, but inefficient, strategies to solve non-routine problems, and executes conceptually sound mathematical procedures with minor computational errors. or Selects appropriate and efficient strategies to solve non-routine problems but executes mathematical procedures with minor conceptual and computational errors.	Selects an inappropriate strategy or Makes major conceptual errors or procedural errors.
Reasoning & Proof	Makes valid conceptual/theoretical argument(s) and mathematically justifies it logically and thoroughly.	Makes valid conceptual/theoretical argument(s) and mathematically justifies it logically.	Makes argument(s) and justifies most mathematical statements accurately.	Makes arguments but does not justify mathematical statements accurately.
Communication	Always uses mathematical language and notations accurately. Always clearly explains mathematical thinking in an organized and detailed way.	Mostly uses mathematical language and notations accurately. Mostly clearly explains mathematical thinking in an organized and detailed way.	Sometimes uses mathematical language and notations accurately. Sometimes clearly explains mathematical thinking in an organized and detailed way.	Limited use of mathematical language and notation in an accurate manner. Rarely clearly explains mathematical thinking in an organized and detailed way.
Connections	Demonstrates an in-depth understanding of the relationships between mathematical concepts, procedures, and/or strategies.	Demonstrates an understanding of the relationships between mathematical concepts, procedures, and/or strategies.	Demonstrates a limited understanding of the relationships between mathematical concepts, procedures, and/or strategies.	Does not demonstrate understanding of the relationships between mathematical concepts, procedures, and/or strategies.
Representation	Creates an accurate and sophisticated mathematical representation(s), inherent to the task, to solve problems or portray solutions.	Creates an accurate mathematical representation(s), inherent to the task, to solve problems or portray solutions.	Creates an accurate mathematical representation(s), inherent to the task, to solve problems or portray solutions, but may be imprecise or contain minor errors.	Does not create an accurate mathematical representation, inherent to the task, to solve problems or portray solutions.

**New York Performance Standards Consortium
Social Studies Analytic Research Paper**
Student _____

Circle one: Written Oral
Title /Topic _____

Circle one: Teacher External Evaluator
Evaluator (Print name) _____

Overall Holistic Evaluation _____ **Signature** _____ **Date** _____

06/2023

Performance Indicator	Outstanding	Good	Competent	Needs Revision
Viewpoint: Thesis/Claim	Thesis is a clear and complex response to an authentically debatable question or issue.	Thesis is a clear response to an authentically debatable question or issue.	Thesis or response to an authentically debatable question or issue is identifiable, but not especially clear.	Thesis or response to authentically debatable question or issue is not evident or comprehensible.
Analysis and Persuasion	- Arguments support thesis with depth and sophisticated analysis, building throughout. - Concepts and connections between evidence, arguments and thesis are thoroughly explored. - Alternative point(s) of view is (are) thoroughly explored and evaluated. - Strengths and weaknesses of evidence are discussed where appropriate.	- Arguments support thesis with depth and analysis. - Concepts and connections between evidence, arguments and thesis are explained. - Alternative point(s) of view is (are) explained and evaluated.	- Arguments generally support thesis. - Concepts and connections between evidence, arguments and thesis are comprehensible but not especially clear. - Alternative point(s) of view is (are) presented, but not well-explained.	- Arguments generally do not support thesis. - Concepts and connections between evidence, arguments and thesis are unclear. - No alternative point of view is presented.
Evidence and Sources	- Evidence skillfully sustains and develops arguments. - Evidence selected demonstrates deep comprehension of relevant and reliable sources, including primary and secondary sources. - Evidence for alternative point(s) of view skillfully sustains and develops argument(s). - Sources are cited consistently and appropriately.	- Evidence sustains and develops arguments. - Evidence selected demonstrates comprehension of relevant and reliable sources, including primary and secondary sources. - Evidence for alternative point(s) of view sustains and develops argument(s). - Sources are cited consistently and appropriately.	- Evidence mostly sustains arguments. - Evidence selected is mostly relevant, drawn from primary and/or secondary sources. - Evidence for alternative point(s) of view mostly sustains argument(s). - Sources are cited, mostly appropriately.	- Evidence is insufficient to sustain arguments. - Evidence selected is inaccurate, unreliable or irrelevant. - Evidence for alternative point(s) of view is insufficient to sustain arguments. - Sources are cited inaccurately or not at all.
Context and Implications	- Historical and/or cultural context informs and deepens the analysis. - Broader implications of the central arguments are thoroughly explained.	- Historical and/or cultural context informs the analysis. - Some broader implications of the central argument are explained.	- Arguments and ideas reflect a general awareness of historical and/or cultural context, but may not inform the analysis. - The broader implications of the central argument are alluded to but not necessarily explained.	- Arguments and ideas reflect no awareness of the larger historical and/or cultural context. - The broader implications of the central argument are not considered.
Organization	- Arguments are organized so all parts fluidly support the whole. - Introduction draws the reader in and sets up the topic or thesis in a compelling manner. - Conclusion pulls together the arguments and shows why the topic is important.	- Arguments are organized so all parts support the whole. - Introduction draws the reader in and clearly sets up the topic or thesis. - Conclusion mostly pulls together the arguments and tries to show why the topic is important.	- Arguments are organized so most parts support the whole. - Introduction may not be entirely clear, but presents the topic or thesis. - Conclusion restates the arguments.	- Arguments are not organized. - Introduction is missing or does not adequately present the topic or thesis. - Conclusion is missing or unclear.
Expression and Voice	- Individual voice demonstrates a strong sense of ownership and awareness of the audience. - Grammar and punctuation are nearly perfect. <i>(This component is only for written expression - the paper and/or text-based materials used during the Oral Defense, NOT the spoken part.)</i>	- Individual voice demonstrates ownership and awareness of the audience. - Grammatical and punctuation errors do not distract from or interfere with the reader's understanding. <i>(This component is only for written expression—the paper and/or text-based materials used during the Oral Defense, NOT the spoken part.)</i>	- Individual voice is present, but inconsistent. - Grammatical and punctuation errors distract from, but do not interfere with, the reader's understanding. <i>(This component is only for written expression—the paper and/or text-based materials used during the Oral Defense, NOT the spoken part.)</i>	Grammatical and punctuation errors significantly confuse the reader. <i>(This component is only for written expression—the paper and/or text-based materials used during the Oral Defense, NOT the spoken part.)</i>
Oral Defense	Presenter thoughtfully and accurately answers questions related to arguments, evidence and historical context, and may go beyond the scope of the paper.	Presenter thoughtfully and accurately answers questions related to arguments, evidence and/or historical context.	Response to questions may not fully reflect the coherence and depth of the paper, but the presenter is able to answer questions central to the paper's scope.	Presenter is unable to answer questions central to the scope of the paper.

New York Performance Standards Consortium
Experimental Science

Student _____

Circle one: Teacher External Evaluator

Title of Experiment _____

Circle one: Written Oral Defense

Evaluator (Print name) _____

Overall Holistic evaluation

Signature _____ Date _____

03/2017

Performance Indicator	Outstanding	Good	Competent	Needs Revision
Contextualize	- Background research has been thoroughly conducted using at least two original sources. - Sources are all appropriately cited. - The significance of the problem is clearly stated. - The hypotheses/theses are grounded in the background research.	- Background research has been thoroughly conducted. - Sources are appropriately cited. - The significance of the problem is stated. - The hypotheses/theses are relevant to the background research.	- Background research is included in the introduction. - Sources are cited. - The significance of the problem is stated. - The hypotheses/theses are clearly stated.	- Background research is not included in the introduction. - Sources are not cited. - The significance of the problem is not stated. - The hypotheses/theses are not stated.
Critique Experimental Design	- Identifies, describes and controls relevant variables.. - Thoughtfully evaluates the procedure, data sampling method*, and/or set up - Clearly describes bias in the design	- Identifies, describes and controls most relevant variables. - Evaluates the procedure, data, sampling method*, and/or set up. - Clearly describes bias in the design.	- Identifies, describes and controls some relevant variable. - Evaluates the procedure, data sampling method*, and/or set up. - Attempts to describe bias in the design	- Does not identify, describe or control any variables. - Does not evaluate the procedure or sampling method and/or set up. - Does not attempt to describe bias in the design.
Collect, Curate*, Organize, and Present Data	- Collects or curates* data in a reliable and valid manner. - Presents relevant data that is consistent with the problem. - Generates appropriate tables, charts and graphs with data and makes appropriate calculations. - Conducts thorough mathematical analysis of the data.	- Collects or curates* data in a reliable and valid manner. - Presents relevant data that is consistent with the problem. - Generates appropriate tables, charts and graphs with data and/or makes appropriate calculations. - Conducts mathematical analysis of the data.	- Collects or curates* data in a reliable and valid manner. - Presents data that is consistent with the problem. - Generates tables, charts and graphs with data. - Conducts analysis of the data.	- Collects or curates* data in a non-reliable and/or invalid manner. - Does not present data or presents data that is not relevant to the problem. - Does not generate tables, charts and graphs. - Does not analyze the data.
Analyze and Interpret Results	- Draws thoughtful conclusions that are supported by the data. - Relates conclusions to original question. - Thoroughly describes sources of error and their effects on the data or identifies limitations of data & conclusion*.	- Draws conclusions that are supported by the data. - Relates conclusions to original question. - Describes several sources of error and their effects on the data or the limitations of data & conclusion*.	- Draws conclusions that are partially supported by the data. - Attempts to relate conclusions to original question. - Describes sources of error and attempts to describe their effects on the data or the limitations of the data & conclusion*	- Draws no conclusions or draws conclusions that are not supported by the data. - Does not attempt to relate conclusions to original question. - Does not describe sources of error or does not attempt to describe their effects on the data or limitations of data*.
Revise Original Design	- Proposes effective and relevant are revisions for the experimental plan (and investigative plan*) to lessen the effects of bias and sources of error. - Poses thoughtful and relevant questions for future research.	- Proposes relevant revisions for the experimental plan (and investigative plan*) to lessen the effects of bias and sources of error. - Poses relevant questions for future research.	- Proposes revisions for the experimental plan (and investigative plan*) to lessen the effects of bias and sources of error. - Poses questions for future research.	- Does not propose revisions for the experimental plan (and investigative plan*). - Does not pose questions for future research.
Defense (for oral component only)	Thoroughly answers questions relevant to the experiment and related topics.	Adequately answers questions relevant to the experiment and related topics.	Adequately answers questions relevant to the experiment.	Does not adequately answer questions relevant to the experiment.

* When working with "big data."

**New York Performance Standards Consortium
Engineering/Design Science**

Student _____

Title of Design _____

Evaluator (Print name) _____

Circle one: Teacher External Evaluator
Circle one: Written Oral Defense
Holistic evaluation (circle one): Outstanding
Good Competent Needs Revision

Signature _____

Date _____

06/2014

Performance Indicator	Outstanding	Good	Competent	Needs Revision
Contextualize the Design Problem	- Engineering/design problem is clearly defined and explained in terms of the human needs that are to be solved or fulfilled. - Specific design constraints are clearly explained. - Specific criteria for success are clearly explained. - Background research on the project's content and context has been thoroughly conducted using relevant and credible resources.	- Engineering/design problem is defined and explained in terms of the human needs that are to be solved or fulfilled. - Specific design constraints are explained. - Specific criteria for success are explained. - Background research on the project's content and/or context has been conducted using relevant and credible resources.	- Engineering/design problem is defined but only partially explained in terms of the human needs that are to be solved or fulfilled. - Specific design constraints are mentioned but not fully explained. - Some criteria for success are explained but may not be specific. - Background research on the project's content and/or context has been conducted but uses few relevant and credible resources.	- Engineering/design problem is defined but not explained in terms of the human needs that are to be solved or fulfilled. - No or few specific design constraints are mentioned or explained. - Few criteria for success are explained. - Little or no background research on the project's content and/or context has been conducted.
Critique the Design Process	- Thoroughly describes the design phase including thoughtful evaluation of models (e. g., diagrams, replicas, analogies, computer simulations, mathematical formulas) and design priorities. - Thoroughly justifies how the selected prototype will best satisfy all criteria for success. - Thoroughly justifies why all alternative prototypes were rejected. - Thoroughly identifies and describes all relevant variables including any appropriate controls.	- Describes the design phase including evaluation of models (e.g. diagrams, replicas, analogies, computer simulations, mathematical formulas) and design priorities. - Justifies how the selected prototype will best satisfy some of the criteria for success. - Justifies why some of the alternative prototypes were rejected. - Identifies and describes most relevant variables including any appropriate controls.	- Describes but does not sufficiently evaluate the design phase including models (e. g., diagrams, replicas, analogies, computer simulations, mathematical formulas) and design priorities. - Only partially justifies how the selected prototype best satisfies some of the criteria for success. - Only partially justifies why some of the alternative prototypes were rejected. - Identifies and describes some relevant variables including any appropriate controls.	- Describes but does not evaluate the design phase including models (e. g., diagrams, replicas, analogies, computer simulations, mathematical formulas) or design priorities. - Does not justify how the selected prototype best satisfies some of the criteria for success. - Does not justify why some of the alternative prototypes were rejected. - Identifies but does not describe relevant variables including any appropriate controls.
Test the Design Prototype: Collect, Organize & Present Data	- Collects extensive relevant data in a reliable manner for the purpose of optimizing the design. - Thoroughly represents data appropriately in multiple ways (e.g., tables, charts, graphs). - Conducts thorough mathematical analysis of the data.	- Collects relevant data in a reliable manner for the purpose of optimizing the design. - Represents data appropriately in multiple ways (e. g., tables, charts, graphs). - Conducts mathematical analysis of the data.	- Collects sufficient and relevant data for the purpose of optimizing the design. - Represents data in multiple ways (e. g., tables, charts, graphs). - Conducts analysis of the data.	- Collects insufficient and/or irrelevant data. - Does not represent data appropriately. - Does not analyze the data.
Evaluate the Design (Prototype)	- Thoughtfully analyzes the extent to which prototype satisfies all criteria for success. - Thoughtfully explains how data were used in optimizing the design through multiple iterations. - Thoughtfully proposes effective - and relevant revisions to the design.	- Analyzes the extent to which prototype satisfies some of the criteria for success. - Explains how some of the data were used in optimizing the design through multiple iterations. - Proposes some relevant revisions to the design.	- Describes but does not analyze the extent to which prototype satisfies some of the criteria for success. - Only partially explains how some of the data were used in optimizing the design through multiple iterations. - Proposes few relevant revisions to the design.	- Does not describe or analyze the extent to which prototype satisfies all criteria for success. - Does not explain how the data were used in optimizing the design through multiple iterations. - Does not propose any relevant revisions to the design.
Defense (for oral component only)	Thoroughly answers questions relevant to the design and related topics.	Adequately answers questions relevant to the design and related topics.	Adequately answers questions relevant to the design.	Does not adequately answers questions relevant to the design.