

# PERFORMANCE DESCRIPTORS FOR MASTERY

## 12TH GRADE ENGLISH LANGUAGE ARTS

### Reading:

Performance Descriptors
Mastery
<p>Twelfth grade students at mastery level in reading:</p> <p>determine where and why the text leaves matters uncertain, evaluate two or more themes and how they interact and build on one another and provide a complex analysis of the impact of the author's choices regarding how to develop and relate elements of a story or drama; analyze a complex set of ideas or sequence of events explaining how specific individuals, ideas or events interact and develop; critically analyze literary and informational texts;</p> <p>analyze and evaluate the effectiveness of how and why an author uses structure and meaning to clarify, convince, engage and contribute to the aesthetic impact and determine point of view or purpose in which rhetoric is effective, distinguishing what is said from what is meant and analyzing and evaluating the contribution of style and content;</p> <p>analyze and critically evaluate reasoning and how multiple interpretations of themes or topics in different media or formats interpret the source text as well as integrate, evaluate and synthesize multiple sources of information to address a question or solve a problem considering themes, purposes and rhetorical features;</p> <p>read and comprehend literary and informational texts in the grades 11-CCR complexity band independently and proficiently.</p>



### Writing:

Performance Descriptors
Mastery
<p>Twelfth grade students at mastery level in writing:</p> <p>compose arguments and informative/explanatory texts using rhetorical devices, varied syntax and relevant evidence to thoroughly develop and establish the significance of logically sequenced knowledgeable claims, counterclaims, reasons and evidence while anticipating the audience's values and possible biases; write narratives that convey the significance of the problem, situation or observation building toward a particular tone and outcome using well-structured sequences to establish point of view and capture action;</p> <p>use technology to develop and strengthen writing in response to ongoing feedback, including new arguments or information while recognizing the benefit of the sustained writing process;</p> <p>assess and evaluate the strengths and limitations of each source in terms of task, purpose and audience avoiding plagiarism and overreliance on any one source and following a standard format for citation in sustained research projects that include the premises, purposes and arguments in works of public advocacy;</p> <p>write over extended time frames for research-based projects and shorter time frames for specific tasks, purposes and audiences.</p>

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### Speaking and Listening:

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Mastery
<p>Twelfth grade students at mastery level in speaking and listening:</p> <p>set clear goals, deadlines and individual roles to promote civil, democratic discussions that probe reasoning, evidence and divergent and creative perspectives, synthesize comments, claims and evidence, resolve contradictions when possible, determine and conduct additional research to make informed decisions and solve problems; and assess the stance, premises and links among ideas, word choice, points of emphasis and tone;</p> <p>convey a clear and distinct perspective and address alternative or opposing perspectives for a range of formal and informal tasks; and use digital media to enhance and add interest.</p>

### Language:

Performance Descriptors
Mastery
<p>Twelfth grade students at mastery level in language:</p> <p>use hyphenation conventions, understand that usage can change over time and resolve issues of complex or contested usage by consulting a variety of references;</p> <p>vary syntax for effect, consult references and apply an understanding of syntax to the study of complex texts when reading or listening;</p> <p>clarify a word's usage and interpret figures of speech such as hyperbole and paradox in context and analyze their roles in the text independently and proficiently.</p>

## 12TH GRADE MATHEMATICS

### Building Relationships Among Complex Numbers, Vectors, and Matrices:

Performance Descriptors
Mastery
<p>Math IV students at the mastery level in mathematics:</p> <p>make sense of all four binary operations of complex numbers in either form;</p> <p>determine appropriate forms and manipulate with accuracy and precision;</p> <p>represent abstract situations involving vectors symbolically;</p> <p>make sense of a geometric representation of vector operations;</p> <p>interpret transformations in the plane in terms of multiplication by <math>2 \times 2</math> matrices; recognize the role of the determinant in finding area;</p> <p>create a coherent representation of any system of linear equations as a matrix.</p>

### Analysis and Synthesis of Functions:

Performance Descriptors
Mastery
<p>Math IV students at the mastery level in mathematics:</p> <p>utilize informal limits to analyze vertical asymptotes;</p> <p>make sense of composition relationships in problem situations;</p> <p>restrict the domain of a function to create an invertible function and make sense of the inverse relationship between exponential and logarithmic functions.</p>

### Text-dependent Questions:

- Can only be answered with evidence from the text.
- Can be literal (checking for understanding) but must also involve analysis, synthesis, evaluation.
- Focus on word, sentence, and paragraph, as well as larger ideas, themes, or events.
- Focus on difficult portions of text in order to enhance reading proficiency.
- Can also include prompts for writing and discussion questions.

### Mathematical Practices:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

### Derivations in Analytic Geometry:

Performance Descriptors
Mastery
<p>Math IV students at the mastery level in mathematics:</p> <p>make sense of the derivations of the equations of an ellipse and a hyperbola;</p> <p>understand the meaning of Cavalieri's principle, including non-congruent cross sections.</p>



### Trigonometric and Inverse Trigonometric Functions of Real Numbers:

Performance Descriptors
Mastery
<p>Math IV students at the mastery level in mathematics:</p> <p>make sense of the symmetry, periodicity, and special values of trigonometric functions using the unit circle;</p> <p>solve trigonometric equations in modeling contexts;</p> <p>prove trigonometric identities and apply them problem solving situations;</p> <p>calculate phase shift of a trigonometric function with accuracy and precision.</p>

### Modeling with Probability:

Performance Descriptors
Mastery
<p>Math IV students at the mastery level in mathematics:</p> <p>understand probability distributions and expected value as a mean;</p> <p>create a decision-making strategy based upon expected values.</p>

### Series and Informal Limits:

Performance Descriptors
Mastery
<p>Math IV students at the mastery level in mathematics:</p> <p>apply mathematical induction to prove summation formulas;</p> <p>understand that an infinite sum of positive numbers can converge.</p>

### Literacy Shifts in All Content Areas:

1. Regular practice with complex text and its academic language.
2. Reading, writing and speaking grounded in evidence from text, both literary and informational.
3. Building knowledge through content-rich nonfiction.