Ohio Achievement Tests
Grades 3 – 8
Performance Level Descriptors

Center for
Curriculum and Assessment

Offices of Curriculum, Instruction and Assessment

Contents

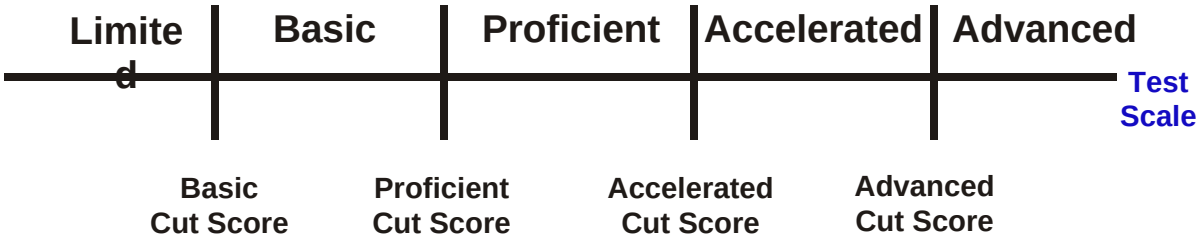
Purpose of Performance Level Descriptors for Ohio's Achievement Tests

Performance Level Descriptors represent explicit statements about Ohio's achievement tests. Performance Levels are regions on a test score scale that represent what students would need to know and be able to do relative to the Academic Content Standards at predetermined, levels of achievement (such as Below Basic, Basic, Proficient, Accelerated, and Advanced). The Performance Levels are described and defined by the *Performance Level Descriptors (PLDs)*. A PLD, then, describes what students would need to know and be able to do within each Performance Level.

Each achievement test is based upon Ohio Academic Content Standards for that grade and subject, and the PLD for each test:

- summarize what a student would need to know and be able to do within each performance level. (limited, basic, proficient, accelerated, or advanced)
- describe a range of content-based behaviors expected of students within each performance level.
- are the link between the Ohio Academic Content Standards and reporting test performance of the achievement of those standards
- are the ultimate content-referenced criteria to which student performance is compared for setting cut-scores for these tests (see graphic below)

Ohio Performance Levels



PLDs are the basis for test score reporting and interpretation of student scores on Ohio Achievement Tests. PLDs may also be used as an important reference between Ohio's achievement tests and classroom based instructional and assessment strategies for supporting achievement of Ohio's Academic Content Standards.

Performance Level Descriptors
Grade 3 Reading Achievement Test
(Adopted by State Board of Education, 2003)

Limited	Students performing at the limited level do not yet have the skills identified at the basic level.
Basic	Students performing at the Basic Level make limited use of reading comprehension strategies, such as inferencing, predicting, comparing and contrasting and summarizing, to build meaning from text. They can usually respond accurately to literal questions but inconsistently answer inferential and evaluative questions. They are able to decode words and can define some unfamiliar words by using context clues in grade-appropriate reading material. A student at the basic level needs teacher support and prompting to comprehend grade-level texts.
Proficient	Students performing at the Proficient Level usually apply reading comprehension strategies to construct meaning. They use their understanding of the elements of literature (e.g., characters, setting and plot) and the author's use of language to develop an accurate understanding of the text. They use text features, such as titles, subtitles and visual aids, to support their comprehension. They often use organizational text features such as chronology, cause and effect and problem/solution to help them organize and recall information. Typically, these students are able to determine the meanings of unfamiliar at- or above-grade level words by using context clues and structural analysis. These students can read and comprehend grade-level texts with little or no teacher support.
Accelerated	Students performing at the Accelerated Level consistently apply comprehension strategies to develop a thorough understanding of what they read. These students demonstrate an ability to use text structures to comprehend and recall what they have read. They can identify and describe various literary elements including plot, theme, character and setting. They respond accurately to inferential and evaluative questions. They consistently determine meanings of unfamiliar at- and above-grade level words by using word structure analysis and context clues. These students can read and comprehend grade-level texts independently and relate what they have read to what they have read and to their own experiences.
Advanced	Students performing at the Advanced Level apply comprehension strategies to develop a thorough and cohesive understanding of what they read. These students demonstrate an ability to use text structures to interpret, evaluate and extend what they read. They consistently respond accurately to questions about what they have read. They can infer and evaluate the ways that authors affect texts. They use their knowledge of word structure and context clues to extend their vocabulary. These students can use critical reasoning to evaluate texts and are able to relate their understanding of textual information to other texts or situations.

Performance Level Descriptors
Grade 4 Reading Achievement Test
(Adopted by State Board of Education, 2005)

Limited	Fourth grade students performing at the Limited level struggle with, or are unable to perform, simple reading tasks, and do not yet have the skills identified at the Basic level.
Basic	Fourth grade students performing at the Basic level can sometimes define unknown words through contextual clues and use resources. They can usually demonstrate some understanding of grade-appropriate literary and informational materials.
Proficient	Fourth grade students performing at the Proficient level use their fundamental understanding of word structure, context clues and text structures to determine the meaning of unknown words or phrases. They typically use reading strategies (e.g., prediction, compare and contrast, drawing conclusions, etc.) to show an overall understanding of informational and literary text material.
Accelerated	Fourth grade students performing at the Accelerated level use their understanding of word structure, context clues and text structures to determine the meaning of unknown words or phrases. They use reading strategies (e.g., prediction, compare and contrast, drawing conclusions, etc.) to show a complete understanding of informational and literary text material.
Advanced	Fourth grade students performing at the Advanced level apply their understanding of word structure, context clues and text structures to determine the meaning of unknown words or phrases. They effectively use reading strategies (e.g., prediction, compare and contrast, drawing conclusions, etc.) to show understand of informational and literary text material.

Performance Level Descriptors
Grade 5 Reading Achievement Test
(Adopted by State Board of Education, 2005)

Limited	Fifth grade students performing at the Limited level struggle or are unable to perform simple reading tasks. These students do not yet have the skills identified at the Basic level.
Basic	Fifth grade students performing at the Basic level can generally define unknown words or phrases through contextual clues and the use of resources. They can demonstrate some understanding of literary and informational text information.
Proficient	Fifth grade students performing at the Proficient level use their fundamental understanding of word structure, context clues and text structures to determine the meaning of unknown words or phrases. They can typically use reading strategies (e.g., prediction, compare and contrast, summarize etc.) to show an overall understanding of informational and literary text material.
Accelerated	Fifth grade students performing at the Accelerated level use their understanding of word structure, context clues and text structures to determine the meaning of unknown or words phrases. They use reading strategies (e.g. prediction, compare and contrast, drawing conclusions, etc...) to show a complete understanding of informational and literary text material.
Advanced	Fifth grade students performing at the Advanced level apply their understanding of word structure, context clues and text structures to determine the meaning of unknown words or phrases. They effectively use reading strategies (e.g. prediction, compare and contrast, summarize, etc...) to communicate meaning and make sound judgments about grade appropriate literary and informational text.

Performance Level Descriptors
Grade 6 Reading Achievement Test
(Adopted by State Board of Education, 2006)

Limited	Sixth grade students performing at the Limited level struggle or are unable to perform simple reading tasks. These students do not yet have the skills identified at the Basic level.
Basic	Sixth grade students performing at the Basic level can generally define unknown words through context clues and the use of available resources. They can demonstrate some understanding of textual information in literary and informational material.
Proficient	Sixth grade students performing at the Proficient level use their fundamental understanding of word structure, context clues and text structure to determine the meaning of unknown and/or phrases. They typically use reading strategies (e.g., prediction, comparisons, summarizing, etc.) to show an overall understanding of literary elements and informational features and structures.
Accelerated	Sixth grade students performing at the Accelerated level apply their understanding of word structure, context clues, text structures to determine the meaning of unknown words and/or phrases. They use reading strategies (e.g., prediction, comparisons, summarizing, etc.) to show a complete understanding of textual information, literary elements and informational features and structures.
Advanced	Sixth grade students performing at the Advanced level apply their understanding of word structure, context clues, text to determine the meaning of unknown words and/or phrases. They use reading strategies (e.g., prediction, comparisons, summarizing, etc.) effectively to communicate meaning and make sound judgments about grade appropriate literary and informational text.

Performance Level Descriptors
Grade 7 Reading Achievement Test
(Adopted by State Board of Education, 2006)

Limited	Seventh grade students performing at the Limited level struggle or are unable to perform simple reading tasks and they do not yet have the skills identified at the Basic level.
Basic	Seventh grade students performing at the Basic level can generally define unknown words or phrases through contextual clues and the use of available resources. They can demonstrate some understanding of textual information.
Proficient	Seventh grade students performing at the Proficient level use their fundamental understanding of word structure, context clues and text structures to determine the meaning of unknown words and/or phrases. They typically show an overall understanding of literary elements and informational features and structures.
Accelerated	Seventh grade students performing at the Accelerated level use their understanding of word structure, context clues, text structures and author's style to determine the meaning of unknown words and/or phrases. They can analyze literary elements and informational features and structures to show a complete understanding of a variety of text.
Advanced	Seventh grade students performing at the Advanced level apply their understanding of word structure, context clues, and text structures to determine the meaning of unknown words and/or phrases. They have a concrete understanding of the methods used by the authors to communicate meaning and can make sound judgments about literary and informational text.

Performance Level Descriptors
Grade 8 Reading Achievement Test
(Adopted by State Board of Education, 2005)

Limited	Eighth grade students performing at the Limited level struggle with, or are unable to perform, simple reading tasks and do not yet have the skills identified at the Basic level.
Basic	Eighth grade students performing at the Basic level can generally define unknown or compound words through contextual clues and can identify resources to define more complex words. They demonstrate some understanding of textual information.
Proficient	Eighth grade students performing at the Proficient level use their fundamental understanding of word structure, context clues and text structures to determine the meaning of complex words. They typically show an overall understanding of literary elements and informational features and structures.
Accelerated	Eight grade students performing at the Accelerated level use their understanding of word structure, context clues, text structure and author's style to show a complete understanding of a variety of texts. They show a complete understanding of literary elements and informational features and structures.
Advanced	Eighth grade students performing at the Advanced level have a thorough understanding of word structure, context clues, text structure and author's style to show a complete understanding of a variety of texts. They have a firm grasp of the literary and informational techniques used by authors to communicate meaning and can make sound judgments on the appropriateness of text.

Performance Level Descriptors –
Grade 4 Writing Achievement Test
(Adopted by State Board of Education, 2005)

Limited	Fourth grade students performing at the Limited level possess limited knowledge of the writing process, applications, and conventions. Their writing does not demonstrate the skills identified at the Basic level.
Basic	Fourth grade students performing at the Basic level possess some knowledge of the writing process, applications, and conventions. Although their writing attempts to address the modes, they may struggle with issues of audience and purpose and may minimally stay on task. There is evidence of conventions although errors frequently interfere with meaning. They may use some steps of the writing process to improve the quality of the text.
Proficient	Fourth grade students at the Proficient level possess a solid knowledge of writing process, applications and conventions. They can address the mode of writing and the audience and purpose, and support meaning through the use of writing conventions. Although there may be occasional errors in the student's writing, they do not interfere with meaning. They use the writing process to make appropriate refinements to text.
Accelerated	Fourth grade students at the accelerated level possess exceptional knowledge of writing process, applications, and conventions. They efficiently address the mode of writing, audience and purpose and effectively support meaning with appropriate discourse features and writing conventions. The use the writing process to improve the quality of the text.
Advanced	Fourth grade students at the Advanced level possess a sophisticated understanding of writing process, applications, and conventions. They thoroughly address the mode of writing, audience and purpose and effectively use discourse features and writing conventions to support meaning. They use the writing process effectively to make subtle refinements that improve quality of the text.

Performance Level Descriptors –
Grade 7 Writing Achievement Test
(Adopted by State Board of Education, 2006)

Limited	Seventh grade students at the Limited level produce writing that interferes with or impedes readers' understanding. Their writing does not demonstrate the skills identified at the Basic level.
Basic	Seventh grade students at the Basic level produce writing that shows an inconsistent awareness of purpose and audience. Their writing does not present the reader with a generally unified and coherent sequence and structure of ideas. Students use sentence variety, make word choices inconsistently and struggle to understand grammar, punctuation, capitalization and spelling conventions.
Proficient	Seventh grade students at the Proficient level effectively address the audience and purpose. The writing presents the reader with a generally unified and coherent sequence and structure of ideas. The students demonstrate adequate skills at revising and editing writing. The students use sentence variety, make word choices and display an understanding of grammar, capitalization, punctuation and spelling.
Accelerated	Seventh grade students at the Accelerated level effectively address the audience and purpose. The writing presents the reader with a well developed and coherent sequence of ideas. The students organize writing effectively and consistently, use sentence variety, make appropriate word choices and show an understanding of writing conventions.
Advanced	Seventh grade students at the Advanced level directly address and clearly adapt to audience and purpose. The writing engages the reader with a well developed and coherent sequence of ideas. The student's organization, sentence variety, word choices and use of conventions are exceptional.

Performance Level Descriptors –
Grade 3 Mathematics Achievement Test
(Adopted by State Board of Education, 2005)

Limited	Students performing at the Limited level demonstrate skill and understanding of mathematics below the performance required to reach the Basic level.
Basic	Students performing at the Basic level show progress by using some grade 3 concepts and skills to solve simple problems. They recall and recognize mathematical concepts, terms and properties. Students typically carry out routine procedures, such as reading graphs, adding and subtracting whole numbers, and using measurement tools. Students solve problems for which the method or solution is easily recognized and straightforward.
Proficient	Students performing at the Proficient level show adequate progress by using grade 3 concepts and skills to solve familiar problems. They apply mathematical concepts, terms and properties to problem situations. Most of the time, students can use place value concepts, apply basic measurement and geometry concepts to describe attributes of shapes or objects, and interpret graphs. They usually can use informal reasoning and make appropriate decisions about what procedure to use to solve routine problems. Students typically can interpret or provide a visual or symbolic representation to match a problem situation and purpose. Students communicate mathematical thinking and solutions using a combination of informal and mathematical language.
Accelerated	Students performing at the Accelerated level show good progress by using grade 3 concepts and skills to solve a variety of problems. They recognize similarities and differences between various mathematical concepts, properties and procedures. Students solve problems involving common fractions and decimals, explain and solve simple equations and inequalities, compare geometric figures, and draw conclusions about data. They consistently bring together skills and knowledge from various concepts and domains in mathematics to solve problems involving multiple steps and decision points. Students use informal and some formal reasoning to evaluate and justify the reasonableness of a solution. They communicate mathematical thinking and solutions in a clear and concise manner.
Advanced	Students performing at the Advanced level show excellent progress by using grade 3 concepts and skills to solve complex problems. They routinely identify and connect fundamental mathematical concepts, procedures and properties, such as those related to place value, computation and attributes of geometric figures, to more complex and novel problem situations. Students typically demonstrate more abstract and sophisticated thinking in their analysis of, approach to and solutions for problems. They demonstrate flexibility in representing mathematical relationships by using visual models, expressions, equations and inequalities. Students provide formal mathematical justifications using precise mathematical language and notations for solutions and conclusions or predictions based on graphs. They consistently demonstrate deep knowledge and skills across the standards.

Performance Level Descriptors –
Grade 4 Mathematics Achievement Test
(Adopted by State Board of Education, 2006)

Limited	Students performing at the Limited level demonstrate skill and understanding of mathematics below the performance required to reach the Basic level.
Basic	Students performing at the Basic level show progress by using some grade 4 concepts and skills to solve simple problems. They recall and recognize mathematical concepts, terms and properties. Students typically carry out routine procedures, such as rounding numbers, computing with whole numbers, identifying examples of different classes of lines and triangles, extending patterns, and finding mode and median of a set of data. Students solve problems for which the method or solution is easily recognized and straightforward.
Proficient	Students performing at the Proficient level show adequate progress by using grade 4 concepts and skills to solve familiar problems. They apply mathematical concepts, terms and properties to problem situations. Most of the time, students can solve routine problems involving whole numbers, decimals and simple fractions; describe perimeter and area; compare geometric figures; write an equation to describe a situation; and describe data. They usually can use informal reasoning and make appropriate decisions about what procedure to use to solve routine problems. Students typically can interpret or provide a visual or symbolic representation to match a problem situation and purpose. Students communicate mathematical thinking and solutions using a combination of informal and mathematical language.
Accelerated	Students performing at the Accelerated level show good progress by using grade 4 concepts and skills to solve a variety of problems. They recognize similarities and differences between various mathematical concepts, properties and procedures. Students solve multi-step problems involving more than one operation, multiple sets of data, properties of geometric figures, and patterns or relationships. They consistently bring together skills and knowledge from various concepts and domains in mathematics to solve problems involving multiple steps and decision points. Students use informal and some formal reasoning to evaluate and justify the reasonableness of a solution. They communicate mathematical thinking and solutions in a clear and concise manner.
Advanced	Students performing at the Advanced level show excellent progress by using grade 4 concepts and skills to solve complex problems. They routinely identify and connect fundamental mathematical concepts, properties and procedures, such as those related to fractions and properties of operations, to more complex and novel problem situations. Students typically demonstrate more abstract and sophisticated thinking in their analysis of, approach to and solutions for problems. They demonstrate flexibility when representing mathematical relationships, such as using tables and symbolic notation. Students provide formal mathematical justification using precise mathematical language and notations, such as relate the number of units to size of unit when making measurement conversions, explain how a change in one variable affects the value of a related variable, and describe the characteristics of a set of data. They consistently demonstrate deep knowledge and skills across the standards.

Performance Level Descriptors –
Grade 5 Mathematics Achievement Test
(Adopted by State Board of Education, 2006)

Limited	Students performing at the Limited level demonstrate skill and understanding of mathematics below the performance required to reach the Basic level.
Basic	Students performing at the Basic level show progress by using some grade 5 concepts and skills to solve simple problems. They recall and recognize mathematical concepts, terms and properties. Students typically carry out routine procedures, such as adding and subtracting decimals, identifying parts of a circle, locating points on a coordinate grid, and reading graphs. Students solve problems for which the method or solution is easily recognized and straightforward.
Proficient	Students performing at the Proficient level show adequate progress by using grade 5 concepts and skills to solve familiar problems. They apply mathematical concepts, terms and properties to problem situations. Most of the time, students can solve routine problems involving sums and differences of fractions or decimals, measuring angles, describing the probability of events, and converting units in the same measurement system. They typically can interpret or provide a visual or symbolic representation to match a problem situation and purpose. Students use informal and some formal reasoning to evaluate and justify the reasonableness of a solution. They communicate mathematical thinking and solutions using a combination of informal and mathematical language.
Accelerated	Students performing at the Accelerated level show good progress by using grade 5 concepts and skills to solve a variety of problems. They recognize similarities and differences between various mathematical concepts, properties and procedures. Students solve multi-step problems involving fractions or decimals, finding area and volume, generalizing patterns, and using appropriate graphs and statistical measures to describe data. They consistently bring together skills and knowledge from various concepts and domains in mathematics to solve problems involving multiple steps and decision points. Students use informal and some formal reasoning to evaluate and justify the reasonableness of a solution. They communicate mathematical thinking and solutions in a clear and concise manner.
Advanced	Students performing at the Advanced level show excellent progress by using grade 5 concepts and skills to solve complex problems. They routinely identify and connect fundamental mathematical concepts, properties and procedures, such as those related to ratio, equivalence and relationships among operations involving whole numbers, fractions and decimals, to more complex and novel problem situations. Students typically demonstrate more abstract and sophisticated thinking in their analysis of, approach to and solutions for problems. They demonstrate flexibility in representing mathematical relationships by using tables, graphs and symbolic notation. Students provide a formal mathematical justification using precise mathematical language and notations, such as connect concepts of area and volume to formulas, match graphs to the type of data to be displayed, and relate concepts of ratio and probability. They consistently demonstrate deep knowledge and skills across the standards.

Performance Level Descriptors –
Grade 6 Mathematics Achievement Test
(Adopted by State Board of Education, 2006)

Limited	Students performing at the Limited level demonstrate skill and understanding of mathematics below the performance required to reach the Basic level.
Basic	Students performing at the Basic level show progress by using some grade 6 concepts and skills to solve simple problems. They recall and recognize mathematical concepts, terms and properties. Students typically carry out routine procedures, such as computing with whole numbers and decimals, using standard geometric terms to describe figures, evaluating simple expressions or formulas, and reading line graphs. Students solve problems for which the method or solution is easily recognized and straightforward.
Proficient	Students performing at the Proficient level show adequate progress by using grade 6 concepts and skills to solve familiar problems. They apply mathematical concepts, terms and properties to problem situations. Most of the time, students can solve routine problems involving ratios or simple percents; finding perimeter, area and volume; describing geometric figures by using their properties; solving simple linear equations and inequalities; and interpreting graphs. They typically can interpret or provide a visual or symbolic representation to match a problem situation and purpose. Students use informal and some formal reasoning to evaluate and justify the reasonableness of a solution. They communicate mathematical thinking and solutions using a combination of informal and mathematical language.
Accelerated	Students performing at the Accelerated level show good progress by using grade 6 concepts and skills to solve a variety of problems. They recognize similarities and differences between various mathematical concepts, properties and procedures. Students solve multi-step problems involving fractions, concepts related to perimeter and area, creating and interpreting graphs of equations and inequalities, and multiple graphs or statistical measures. They consistently bring together skills and knowledge from various concepts and domains in mathematics to solve problems involving multiple steps and decision points. Students use informal and some formal reasoning to evaluate and justify the reasonableness of a solution. They communicate mathematical thinking and solutions in a clear and concise manner.
Advanced	Students performing at the Advanced level show excellent progress by using grade 6 concepts and skills to solve complex problems. They routinely identify and connect fundamental mathematical concepts, properties and procedures, such as those related to exponents and prime factorizations and to ratio, proportion and percent, to more complex and novel problem situations. Students typically demonstrate more abstract and sophisticated thinking in their analysis of, approach to and solutions for problems. They demonstrate flexibility in representing mathematical relationships by using graphs and equivalent forms of algebraic expressions, equations, inequalities and formulas. They provide a formal mathematical justification using precise mathematical language and notations, such as describe how changes in dimensions affect perimeter and area, classify geometric figures using multiple categories or criteria, and compare the information provided by measures of center and spread. Students consistently demonstrate deep knowledge and skills across the standards.

Performance Level Descriptors –
Grade 7 Mathematics Achievement Test
(Adopted by State Board of Education, 2005)

Limited	Students performing at the Limited level demonstrate skill and understanding of mathematics below the performance required to reach the Basic level.
Basic	Students performing at the Basic level show progress by using some grade 7 concepts and skills to solve simple problems. They recall and recognize mathematical concepts, terms and properties. Students typically carry out routine procedures, such as reading graphs, solving equations, finding areas and volumes, and performing computations involving whole numbers, decimals or common fractions. Students solve problems for which the method or solution is easily recognized and straightforward.
Proficient	Students performing at the Proficient level show adequate progress by using grade 7 concepts and skills to solve familiar problems. They apply mathematical concepts, terms and properties to problem situations. Most of the time, students can solve problems involving integers and percents; equations and inequalities; concepts of surface area and volume; properties of triangles; and creating and interpreting graphs introduced at this grade level. They usually can use informal reasoning and make appropriate decisions about what procedure to use to solve routine problems. Students typically can interpret or provide a visual or symbolic representation to match a problem situation and purpose. Students communicate mathematical thinking and solutions using a combination of informal and mathematical language.
Accelerated	Students performing at the Accelerated level show good progress by using grade 7 concepts and skills to solve a variety of problems. They recognize similarities and differences between various mathematical concepts, properties and procedures. Students solve multi-step problems involving numbers written in a variety of formats; properties of geometric figures; representing and analyzing mathematical relationships; and constructing arguments based on data. They consistently bring together skills and knowledge from various concepts and domains in mathematics to solve problems involving multiple decision points. Students use informal and some formal reasoning to evaluate and justify the reasonableness of a solution. They communicate mathematical thinking and solutions in a clear and concise manner.
Advanced	Students performing at the Advanced level show excellent progress by using grade 7 concepts and skills to solve complex problems. They routinely identify and connect fundamental mathematical concepts, properties and procedures, such as those related to integers and rational numbers, to more complex and novel problem situations. Students typically demonstrate more abstract and sophisticated thinking in their analysis of, approach to and solutions for problems. They demonstrate flexibility in representing mathematical relationships using algebraic notation, including derived measurements and properties of right triangles and similar figures. Students provide a formal mathematical justification using precise mathematical language and notations, such as determine sufficient properties to define a geometric figure, explain how a change in a variable affects another in linear and simple nonlinear relationships, and compare data using combinations of measures of center and spread. Students consistently demonstrate deep knowledge and skills across the standards.

Performance Level Descriptors –
Grade 8 Mathematics Achievement Test
(Adopted by State Board of Education, 2005)

Limited	Students performing at the Limited level demonstrate skill and understanding of mathematics below the performance required to reach the Basic level.
Basic	Students performing at the Basic level show progress by using some grade 8 concepts and skills to solve simple problems. They recall and recognize mathematical concepts, terms and properties. Students typically carry out routine procedures, such as writing numbers in scientific notation, solving equations, reading graphs, and using formulas to find areas and volumes. Students solve problems for which the method or solution is easily recognized and straightforward.
Proficient	Students performing at the Proficient level show adequate progress by using grade 8 concepts and skills to solve familiar problems. They apply mathematical concepts, terms and properties to problem situations. Most times, students can solve problems involving rational numbers, proportions and percents; similar figures; algebraic representations; and interpreting probability and data. They usually can use informal reasoning and make appropriate decisions about what procedure to use to solve routine problems. Students typically can interpret or provide a visual or symbolic representation to match a problem situation and purpose. Students communicate mathematical thinking and solutions using a combination of informal and mathematical language.
Accelerated	Students performing at the Accelerated level show good progress by using grade 8 concepts and skills to solve a variety of problems. They recognize similarities and differences between various mathematical concepts, properties and procedures. Students solve multi-step problems involving proportional reasoning, measurement and geometry concepts, algebraic thinking and notations, and constructing arguments based on probability and data analysis. They consistently bring together skills and knowledge from various concepts and domains in mathematics to solve problems involving multiple steps and decision points. Students use informal and some formal reasoning to evaluate and justify the reasonableness of a solution. They communicate mathematical thinking and solutions in a clear and concise manner.
Advanced	Students performing at the Advanced level show excellent progress by using grade 8 concepts and skills to solve complex problems. They routinely identify and connect fundamental mathematical concepts, properties and procedures, such as proportional reasoning across standards (percents, conversions among units of measure, similar figures, slope and probability), to more complex and novel problem situations. Students typically demonstrate more abstract and sophisticated thinking in their analysis of, approach to and solutions for problems. They demonstrate flexibility in representing mathematical relationships by using diagrams, graphs, symbolic algebra and formulas. Students provide a formal mathematical justification using precise mathematical language and notations, such as describe the relationship between an equation and its graph, make and test conjectures about geometric figures, and evaluate arguments based on analysis of data and interpretations of graphs. Students consistently demonstrate deep knowledge and skills across the standards.

Performance Level Descriptors –
Grade 5 Science Achievement Test
(Adopted by State Board of Education, 2006)

Limited	Students demonstrate skills and understanding below Basic level performance for Grade 5 Science. Although these students may be able to identify and use some simple scientific vocabulary appropriate for Grade 5, they are unable to identify accurate statements about previously learned, scientifically valid facts, processes, concepts or relationships. Students are unable to provide or identify valid descriptions of models, organisms, physical materials, and systems or accurately express understanding of scientific processes, concepts or relationships as defined by the content standards for Grade 5 Science.
Basic	Given rich context or investigative scenarios appropriate for Grade 5, students performing at the Basic level inconsistently identify accurate scientific facts, concepts, and terms appropriate for the grade level. Some of these facts, concepts and terms include: • differences between plants and animals; • plant and animal life cycles; • relationships in simple food chains; • the characteristics, cycles, patterns of Earth and its place in the solar system; • some processes that shape Earth's surface; • ways to conserve Earth's resources; • aspects of Earth's weather; • characteristics of matter; • characteristics of simple chemical and physical changes; and • forces that affect objects and motion. Students performing at the basic level inconsistently recognize or provide accurate descriptions of basic models and provide explanations that are logical but explanations lack supportive data. Students show a rudimentary understanding of valid Grade 5 scientific knowledge, concepts, processes and relationships underlying natural phenomena in life, physical and Earth and space sciences and demonstrate some familiarity with technological applications. Students perform analyses that are partially accurate, recognize regular patterns and trends, and demonstrate an elementary understanding of scientific investigation processes. Student discussions, predictions and solutions often are based upon oversimplification, incorrect science, or unrelated information/data.
Proficient	Students demonstrate understanding of Grade 5 scientific concepts, knowledge, reasoning and relationships underlying natural phenomena, structures, cycles, systems, and processes in living, physical, Earth and space sciences. Some of these facts, concepts and terms include: • relating plant and animal structures to the appropriate survival function; • energy flow through a three trophic level food web; • sorting plants/animals by common external structures; • how day and night are caused by Earth's rotation; • changes in Earth cycles and patterns; • how wind, water and ice shape and reshape Earth's surface;

	• renewable and non-renewable resources; • how water can exist in different forms; • characteristic properties of matter; • characteristics of simple chemical and physical changes; • forms of energy and ways that energy can change form; • observable properties of light, sound, thermal and electric energy; and • ways that thermal energy may be transferred from one object to another. They demonstrate understanding of physical and conceptual models and recognize some inputs and outputs, causes and effects, and interactions and relationships within a system. Given Grade 5 appropriate rich context or investigative scenarios, students analyze and communicate their thinking about scientific information; make valid, accurate and logical conclusions based upon information/data; distinguish between observation and inference; and identify patterns. Students demonstrate the ability to plan, implement and critique meaningful scientific investigations; make logical predictions and formulate questions based upon scientific knowledge; select or identify appropriate tools and safety considerations; and propose a solution to a simple technological design problem appropriate for Grade 5. Students typically accurately apply science to Grade 5 appropriate individual and societal problems and identify consequences using scientific information/data.
Accelerated	Students demonstrate substantial scientific knowledge and reasoning abilities in the study of Grade 5 appropriate natural phenomena in life, physical and Earth and space sciences. Some of these facts, concepts and terms include: • relationship of specific plant structures to specific functions; • energy flow through the interdependent relationships between members of food chains, food webs, and food pyramids; • Earth's position and motion within the solar system and Earth's relationship to other objects in the solar system; • evidence of weathering and of erosion as a means of reshaping Earth's surface.; • properties of soil and processes of soil formation; • classification of matter by specific physical properties; • how thermal energy is transferred from one object to another by conduction; and • design of simple closed circuits. Given Grade 5 appropriate rich context or investigative scenarios, students show exceptional skill in the application of previously learned, scientifically valid knowledge and successfully use provided information/data to think and communicate scientifically. Students demonstrate considerable ability to design investigations that answer questions about the natural world and use scientific reasoning to make predictions with clearly formulated questions and methods that generate valid data to arrive at valid conclusions. Students consistently identify and discuss patterns and trends and extend information/data utilizing previously learned scientific knowledge. Students can evaluate technological solutions to given individual and societal problems appropriate for Grade 5 by considering helpful and harmful results

	and applying appropriate scientific and technological principles.
Advanced	Students consistently demonstrate thorough and deep scientific knowledge and reasoning abilities in the study of Grade 5 appropriate natural phenomena in life, physical and Earth and space sciences. Some of these facts, concepts and terms include: • specific relationships between producers, consumers, and decomposers within an ecosystem; • Earth's relationship to stars and the relationship between apparent star size, distance and position; • how changes in Earth's surface may occur by slow or rapid processes; • ways to conserve Earth's renewable and non-renewable resources.; • simple physical and chemical changes; • how contact and noncontact forces affect the motion of an object; • the relationship between changes in temperature and changes in thermal energy; • ways to ensure energy flow through a closed system via circuit analysis; and • how certain human/animal behaviors and human technologies can have positive or negative impacts on the environment. Given Grade 5 appropriate rich context or investigative scenarios, students show superior depth in the application of previously learned, scientifically valid knowledge and outstanding application of provided information/data to think and communicate scientifically in a variety of formats. They recognize relationships within complex systems and use this knowledge to make reasonable predictions. Students demonstrate superior ability to design investigations appropriate for Grade 5 that answer questions about the natural world, using complex scientific reasoning skills to make predictions and formulate questions and methods that generate data to arrive at valid conclusions. Students successfully evaluate technological solutions to given individual and societal problems appropriate for Grade 5 by considering helpful and harmful results and applying appropriate scientific and technological principles. Students accurately identify patterns, can extensively discuss patterns and trends, and correctly extend information/data via interpolation or extrapolation.

Performance Level Descriptors –
Grade 8 Science Achievement Test
(Adopted by State Board of Education, 2006)

Limited	Students demonstrate skills and understanding below Basic level performance for Grade 8 Science. Although these students may be able to identify and use some simple scientific vocabulary appropriate for Grade 8, they are unable to identify accurate statements about previously learned, scientifically valid facts, processes, concepts or relationships. Students are unable to provide or identify valid descriptions of models, organisms, physical materials, and systems or accurately express understanding of scientific processes, concepts or relationships as defined within the content standards for Grade 8 Science.
Basic	Given appropriate rich context or investigative scenarios appropriate for Grade 8, students performing at the Basic level inconsistently identify accurate scientific facts, concepts, and terms appropriate for the grade level. Some of these facts, concepts and terms include: • cycles within the universe; • interactions of matter and energy within the lithosphere; • how rocks are composed of minerals; • processes that cause the continuous change in Earth's surface; • levels of organization of living systems; • asexual and sexual reproduction; • energy within most ecosystems originates with the sun; • causes of extinction; • properties of matter that depend on the behavior of the small particles that compose matter; and • examples of kinetic and potential energy. Students inconsistently recognize or provide accurate descriptions of basic models and provide explanations that are logical but explanations lack supportive data. Students show a rudimentary understanding of valid scientific knowledge, concepts, processes and relationships underlying natural phenomena in life, physical, and Earth and space sciences and demonstrate some familiarity with technological applications. Students perform analyses that are partially accurate, recognize regular patterns and trends, and demonstrate an elementary understanding of scientific investigation processes. Student discussions, predictions and solutions often are based upon oversimplification, incorrect science, or unrelated information/data.
Proficient	Students demonstrate understanding of Grade 8 scientific concepts, knowledge, reasoning and relationships underlying natural phenomena, structures, cycles, systems, and processes in living, physical, Earth and space sciences. Some of these facts, concepts and terms include: • movement of matter and energy in Earth cycles and patterns; • conservation of natural resources; • rock cycle; • benefits and detriments of asexual and sexual reproduction; • properties of light, sound, thermal and electric energy; • properties of matter; • characteristics of simple physical and chemical changes; • simple relationships between populations and how overpopulation

	can affect other populations and the environment; • equal volumes of materials usually have different masses; • determining a change in position requires a point of reference; • nonrenewable energy sources originate from the sun and may take millions of years to be replenished; • differences between potential and kinetic energy; • the use of products and systems can have desirable and undesirable consequences; and • how to design a product or problem solution when given one constraint. They demonstrate understanding of physical and conceptual models and recognize some inputs and outputs, causes and effects, and interactions and relationships within a system. Given Grade 8 appropriate rich context or investigative scenarios, students analyze and communicate their thinking about scientific information; make valid, accurate and logical conclusions based upon information/data; distinguish between observation and inference; and identify patterns. Students demonstrate the ability to plan, implement and critique meaningful scientific investigations; make logical predictions and formulate questions based upon scientific knowledge; select or identify appropriate tools and safety considerations; and propose a solution to a simple technological design problem appropriate for Grade 8. Students typically accurately apply science to Grade 8 appropriate individual and societal problems and identify consequences using scientific information/data.
Accelerated	Students demonstrate substantial scientific knowledge and reasoning abilities in the study of natural phenomena in life, physical and Earth and space sciences. Some of these facts, concepts and terms include: • the importance of gravitational force in determining the motions of objects in the universe; • interstellar distances are measured in light years; • Earth's biogeochemical cycles and transfer of energy between the hydrosphere, the atmosphere and the lithosphere; • distinct characteristics of sedimentary, igneous and metamorphic rocks; • the use of models to analyze the surface, interior, and size of Earth; • functions of specialized cells, tissues, organs, and organ system of multicellular organisms (excluding humans); • how sexual reproduction increases genetic variety and how asexual reproduction allows genetic continuity; • how biotic and abiotic resources influence the number and type of organisms in an ecosystem; • causes of diversity (inter-species and intra-species); • the unchanging nature of substances during physical changes; • results of more than one force acting on an object; • management and conservation of renewable and nonrenewable energy resources; • how waves transfer energy; • energy transformation in a simple closed system; • the limitations of science and technology;

	• designs of solutions/products when given two constraints; and • relationships between independent and dependent variables. Given Grade 8 appropriate rich context or investigative scenarios, students show exceptional skill in the application of previously learned, scientifically valid knowledge and successfully use provided information/data to think and communicate scientifically. Students demonstrate considerable ability to design investigations that answer questions about the natural world and use scientific reasoning to make predictions with clearly formulated questions and methods that generate valid data to arrive at valid conclusions. Students consistently identify and discuss patterns and trends and extend information/data utilizing previously learned scientific knowledge. Students can evaluate technological solutions to given individual and societal problems appropriate for Grade 8 by considering needs and constraints and applying appropriate scientific and technological principles.
Advanced	Students consistently demonstrate thorough and deep scientific knowledge and reasoning abilities in the study of Grade 8 appropriate natural phenomena in life, physical and Earth and space sciences. Some of these facts, concepts and terms include: • the motions, orbits, and composition of asteroids and meteoroids compared to that of Earth; • interpretations and predictions from simple H-R diagrams; • use of station model and weather map data to interpret and predict local, regional, and national weather; • classification of minerals by their characteristic properties and assess minerals commonly involved in the rock cycle; • how internal and external destructive and constructive processes shape Earth's surface; • how the variety of body plans and internal structures relate to multicellular organisms (excluding humans); • ways in which sexual and asexual reproduction impact populations in the short term and over time; • ways that natural events and human activity can affect the transfer of energy within ecosystems; • use of the fossil record to explain changes in populations and suggest possible causes of extinction; • changes in speed and direction of an object when the object is subjected to an unbalanced force; • how electric energy can be produced from a variety of sources; • how vibrations in materials produce waves; • how the development and the use of technology may be influenced by constraints and unavoidable factors; and • evaluation of the overall effectiveness of the design for a product/solution. Given Grade 8 appropriate rich context or investigative scenarios, students show superior depth in the application of previously learned, scientifically valid knowledge and outstanding application of provided information/data to think and communicate scientifically in a variety of formats. They recognize relationships within complex systems and use this knowledge to make reasonable predictions. Students demonstrate superior ability to design investigations appropriate for Grade 8 that answer questions about the

	natural world, using complex scientific reasoning skills to make predictions and formulate questions and methods that generate data to arrive at valid conclusions. Students successfully evaluate technological solutions to given individual and societal problems appropriate for Grade 8 by considering needs and constraints and applying appropriate scientific and technological principles. Students accurately identify patterns, can extensively discuss patterns and trends, and correctly extend information/data via interpolation or extrapolation.

Performance Level Descriptors –
Grade 5 Social Studies Achievement Test
(Adopted by State Board of Education, 2006)

Limited	Students demonstrate skills and understandings below the performance required to reach the Basic level.
Basic	Students demonstrate familiarity with units of time and can construct timelines with few errors. They can identify cultural groups and practices in North America and identify their reasons for coming to North America. Students can identify map elements to locate some of the physical and human features of North America. They can identify ways people have affected the environment. Students define the economic concepts of opportunity cost and competition. They recognize the responsibilities of the three branches of government and can identify some of the documents that provide their framework. Students recognize the rights and responsibilities of citizenship.
Proficient	Students construct timelines with events in chronological order, describe cultural groups in North America and explain how the US grew as a nation. They compare practices and products of North American cultural groups that are evident today and explain the reasons for and consequences of their coming to North America. Students use map elements to locate most physical regions and human features of North America and can explain how people have affected the environment. Students can explain the opportunity costs of an action and the importance of competition on the market economy. They can identify responsibilities and importance of the 3 branches of government and give examples of the documents that provide their framework. Students identify the rights and responsibilities of US citizenship and explain how citizens take part in the government for the common good. They obtain information from various sources and use problem-solving skills to make decisions.
Accelerated	Students demonstrate complete understanding of units of time, describe cultural patterns in North America and evaluate how new developments led to the growth of the US. They compare and contrast cultural practices and products of North American groups and can explain with some degree of specificity the reasons and consequences of their coming to North America. Students use map elements to locate all 50 states and numerous physical and human features of North America. They can analyze the ways (both positive and negative) that people have affected the environment. Students explain the opportunity costs involved in complex situations and analyze the effect of competition on the market economy. They explain the responsibilities and importance of each of the 3 branches of government and the significance of each of our national documents. Students explain the rights and responsibilities of citizenship and evaluate the ways citizens take part in government to promote the common good. They organize information from various sources, communicate findings and explain them.
Advanced	Students construct detailed timelines, analyze cultural patterns in North America that are evident from the past and analyze how new developments led o the growth of the US. They use significant and

	plentiful details to evaluate cultural practices and products as well as the consequences of their interactions in North America. Students use map elements to thoroughly describe physical and human features of North America and provide a detailed analysis of human environmental interaction. They evaluate opportunity costs in complex situations and evaluate the effect of various forms of competition on the market economy. Students explain with significant detail the 3 branches of US government and evaluate the documents that provide the structure of our government. They evaluate the rights and responsibilities of citizens and analyze the role of citizens in promoting the common good. Students use various sources to organize information, draw inferences, communicate findings and evaluate the problem solving skills they used to make decisions.

Performance Level Descriptors –
Grade 8 Social Studies Achievement Test
(Adopted by State Board of Education, 2006)

Limited	Students demonstrate skills and understandings below the performance required to reach the Basic level.
Basic	Students recall significant events and themes in world history including political and social characteristics of civilizations and interactions between civilizations. Students identify the causes and consequences of the American Revolution, ratification of the US Constitution and the American Civil War. Students recognize examples of cultural practices, cultural interactions and diffusion of culture. Students recognize geographical features, environmental influences on human activity, and reasons people, products and ideas move from place to place. Students identify global patterns of trade and some connections between available resources, government policies and the economy. Students describe some of the purposes and structures of governmental systems. Students are familiar with the historical origins of citizens' rights and the relationship between civic participation and civic goals. Students recognize strategies for effective group work and attempt to organize information to support a position.
Proficient	Students consistently interpret and describe significant events and themes in world history including characteristics of and interactions between civilizations. Students explain the causes, consequences and challenges of the American Revolution, ratification of the US Constitution and the American Civil War. Students compare cultural practices, analyze cultural interactions and explain the diffusion of culture. Students identify and describe geographical features, environmental influences on human activity, and the movement of people, products and ideas. Students explain global patterns of trade and the connections between available resources, government policies and the economy. Students explain and compare the purposes and structures of governmental systems. Students understand the historical origins of citizens' rights and show the relationship between civic participation and civic goals. Students describe strategies for effective group work and select and organize information to draw conclusions and support a position.
Accelerated	Students consistently analyze significant events, patterns and themes in world history including characteristics of and interactions between civilizations. Students analyze the causes, consequences and challenges of the American Revolution, ratification of the US Constitution and the American Civil War. Students analyze cultural interactions in order to understand commonality and diversity, diffusion of ideas and factors that foster conflict and cooperation. Students explain the significance of geographical features and the effects of movement and human environmental interaction on geographic patterns. Students analyze global patterns of trade and the connections between resources, government policies and the economy. Students analyze the purposes and structures of governmental systems. Students explain the origins and significance of citizens' rights and the relationship between civic participation and civic goals. Students critique strategies for group work. Students organize and analyze information from a variety of sources and perspectives to draw conclusions and support a position.

Advanced	Students consistently analyze the enduring effects of significant events, patterns and themes in world history including characteristics of and interactions between civilizations. Students analyze and evaluate the causes, consequences and challenges of the American Revolution, ratification of the US Constitution and the American Civil War. Students analyze cultural interactions in order to evaluate commonality and diversity, diffusion of ideas and factors that foster conflict and cooperation. Students analyze the significance of geographical features, and the effects of movement and human environmental interaction on geographic patterns. Students analyze global patterns of trade, historic origins of globalization, and the effects of the relationship between resources, government policies and the economy. Students evaluate the purposes, structures and processes of governmental systems. Students analyze the origins and significance of citizens' rights and the relationship between civic participation and civic goals. Students critique strategies for group work. Students synthesize information from a variety of sources and perspectives to draw conclusions and support a position.