



Government of Bermuda
Ministry of Education

BERMUDA DEPARTMENT OF EDUCATION

THE OFFICE OF CURRICULUM & ASSESSMENT

ACHIEVEMENT LEVEL DESCRIPTORS (ALDs)

MIDDLE THREE (M3)

APRIL 2009

BERMUDA M3 ACHIEVEMENT LEVEL DESCRIPTORS (*ALDs*)

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BACKGROUND

The Bermuda Criterion-Referenced Test (BCRT) will be administered operationally for the first time in Spring 2009. This marks the culmination of several years of work on the part of teachers, principals and content officers. These tests will provide teachers and parent feedback on how their students perform in relationship to the Bermuda Performance Standards. To enhance this feedback, the Ministry plans to report student performance in terms of four (4) achievement levels: *Advanced*, *Proficient*, *Partially Proficient* and *Novice*.

To bring clarity to these four (4) levels, Achievement-Level Descriptors (ALDs) have been developed. The Achievement-Level Descriptors (ALDs) are critical to the success of the standard setting process. They summarise the knowledge, skills and abilities of the student who is solidly within a particular achievement level. Achievement-Level Descriptors (ALDs) will be used by the Ministry of Education to provide guidance to students, parents, educators and the public about what students in the Bermuda Public School System (BPSS) should know and be able to do in English Language Arts, Mathematics, Science and Social Studies.

ACKNOWLEDGEMENTS

In July 2008, full descriptors were written for the four (4) achievement levels for content areas previously mentioned. In collaboration with CTB McGraw-Hill personnel, principals, teachers, mentors and content officers developed these descriptors and they reflect the knowledge, skills, and abilities expected of Bermudian students (P3-S2) in each of the achievement levels in relationship to the Bermuda Performance Standards. The writing teams were comprised of diligent and devoted professionals. Appreciation is extended to these professionals for their ability to collaborate amicably and collegially in the development of the (ALDs). The members of the development teams were:

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FREQUENTLY ASKED QUESTIONS

1. What are Achievement Level Descriptors (ALDs)?

Achievement levels descriptors specify the knowledge, skills and abilities a student needs to know in order to be classified in each achievement levels.

2. What are the achievement level titles?

The four (4) achievement level titles are *Advanced*, *Proficient*, *Partially Proficient* and *Novice*. Each achievement level indicates the student can perform the majority of what is described for that level and even more of what is described for the levels below. The student may also be capable of performing some for the things described in the next higher level, but not enough to have reached that level.

Advanced: *demonstrates exemplary understanding or skill and exceeds expected level of performance*

Proficient: *demonstrates understanding or skill and meets expected level of performance*

Partially Proficient: *demonstrates an emerging or developing level of understanding and performance*

Novice: *attempt made; however, lack of understanding and performance is evident*

3. How will the Achievement Level Descriptors (ALDs) be used?

In the standard setting process, teachers will use the ALDs as a point of reference to rate each of their students in the area of English Language Arts, Mathematics, Science and Social Studies into the one of the proficiency categories.

4. What is Standard Setting?

Standard setting is a process that establishes cut-scores for students to be placed into achievement levels. This multi-step process will allow input from various stakeholders such as educators and policy makers. During the standard setting process, Bermuda educators will consider the knowledge, skills and abilities of their students. Based on teachers expectation, cut-scores will be generated using statistical data. Standard setting is currently scheduled to begin in Spring 2009.

5. What are cut-scores?

Cut-scores are the numerical values that identify the range for achievement levels.

Bermuda Public School System Performance Standards

English Language Arts (EL)

Strategic Reading (R)

Comprehension of Informational Text (I)

Comprehension of Literary Text (L)

Language Usage (U)

Writing (W)

Speaking & Listening (S)

Processing Information and Mass Media (M)

English Language Arts (EL)

Advanced Students (EL)

- make inferences/draw conclusions
- make well-developed personal connections of themes, ideas and characters in various challenging texts
- critique the author's purpose and persuasive techniques
- use text to support personal experience and textual knowledge as evidence
- examine/evaluate details for appeal to audience and for a specific purpose
- analyse/interpret literary elements and devices in a variety of challenging texts
- expand sentences using appropriate word choice
- use a range of appropriate strategies to develop a topic specific to the audience's understanding and interest

Proficient Students (EL)

- understand meanings of word parts
- use strategies for new words
- apply knowledge of sentence structure
- compare/contrast texts
- infer author's purpose and perspective
- make inferences/draw conclusions
- demonstrate understanding of cause/effect,
- compare author's observations to own
- connect text to Bermudian culture/life
- provide text evidence to support an argument
- analyse characteristics of a variety of literary works
- use writing/language conventions to communicate effectively
- vary word choice and sentence structure
- use an organisational structure to develop an idea including appropriate facts/details and a sense of closure

Partially Proficient Students (EL)

- infer and make connections to real life experiences
- identify types of informational text
- notice how the structure of informational text is organized
- hypothesize the theme, author's purpose, main idea and supporting details in a text
- read and make connections to grade appropriate literary text about Bermudian culture/life
- use Standard English grammar and conventions to convey ideas
- paraphrase information from sources
- compose to inform or explain using a developed idea that conveys a perspective on a selected topic

Novice Students (EL)

- summarize and locate significant information from illustrations or graphics
- identify main idea/details in simple text
- identify sequence of activities
- distinguish fact/opinion
- determine author's purpose
- identify literary elements and characteristics of fictional, non-fictional, poetic and dramatic works
- demonstrate minimal understanding of grammar usage
- demonstrate minimal development of ideas and control of language and language conventions

BERMUDA M3 ACHIEVEMENT LEVEL DESCRIPTORS (ALDs)

PLANNING NOTES

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Bermuda Public School System Performance Standards

Mathematics (MT)

Number and Number Operations (N)

Patterns, Functions and Algebra (A)

Geometry (G)

Measurement (M)

Data Handling (D)

Mathematics (MT)

Advanced Students (MT)

- apply rational numbers, including scientific notation and exponents in a variety of equivalent forms
- apply properties of special numbers 0, 1, and π
- use inverse relationship of exponents and roots
- solve problems in a wide variety of context
- compare properties of linear functions among tables, graphs, and equations
- model inequalities concretely and pictorially
- identify flat patterns (nets) that represent triangular prisms and cylinders
- use technology and tools to formulate and test conjectures and to make geometric constructions
- solve problems including application of Pythagorean theorem using measurement tools and concepts
- create/choose/read/interpret data representations
- calculate theoretical probability of compound events

Proficient Students (MT)

- understand and apply relationship between squares and square roots
- apply appropriate problem solving strategies using the four operations
- determine reasonable solutions
- solve linear equations
- analyse changes in quantities and functions in linear relationships
- model and create functions and graphs
- determine and apply the number of sides and sums of angle measures
- solve problems using similarity and congruency principles
- apply the Pythagorean theorem
- compute the volume of cylinders
- compare related data sets
- determine whether or not an event is equally likely or if a game or process is fair

Partially Proficient Students (MT)

- find squares and square roots
- multiply and divide negative rational numbers
- apply unit rates and percentages to problem situations
- model and create patterns
- solve problems using patterns, functions, graphs
- use angle sum for quadrilaterals
- find size of angles formed by parallel lines and transversal
- identify similar and congruent triangles
- draw and describe transformations
- select appropriate tools and units for measures
- describe how change in one measure affects the others
- select, create, analyse graphical representation of data

Novice Students (MT)

- order rational numbers on a number line
- add and subtract negative rational numbers
- apply estimation
- apply the four operations including order of operations to solve problems
- find the percent of a number
- solve one-step equations of the first degree
- combine like terms
- substitute for unknowns
- graph ordered pairs
- identify parts of a circle
- apply the angle sum of a triangle
- classify quadrilaterals
- draw reflections and translations
- find the volume of cuboids and the circumference of circles
- analyse data from tables, graphs and equations
- find the median and range of a set of numbers
- determine whether an event is likely

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Bermuda Public School System Performance Standards

Science (SC)

Physical Science (P)

Life Science (L)

Earth and Space Science (E)

Nature of Science (N)

Science (SC)

Advanced Students (SC)

- explain why particle size or temperature affect reaction rates/ how components in a circuit resist a current flowing through them/ electric currents produce magnetism
- illustrate how to strengthen electromagnet
- complete simple Punnett Square
- explain how species in Bermuda can survive even though they are sometimes at the limits of the geographical distribution
- explain causes of weather changes
- design questions for investigations and evaluate procedures
- indicate which variables in an investigation can be controlled
- suggest further investigations
- recognise the technological advances in caring for cancer patients

Proficient Students (SC)

- understand basic atomic structure/periodic table/chemical reactions
- know simple compounds/formulas
- explain/interpret flow of electricity in circuit
- diagram magnetic fields
- analyse impact of removal of organism from marine food web
- know cell division/ types of cells
- understand reproduction in humans and flowering plants/selective breeding
- interpret characteristics of offspring given a completed Punnett Square
- explain Bermuda's formation
- diagram atmosphere layers
- identify/explain weather conditions/simple weather maps
- know about navigation/exploration
- select appropriate questions for scientific investigations
- write procedures
- support conclusions using scientific terms

Partially Proficient Students (SC)

- identify series/parallel circuit
- understand phase changes/electromagnets/particle model/chemical changes/sound and light waves/sexual reproduction/marine and coastal habitats/ecological functions of a reef/traits, survival and reproduction
- recognise impact of overfishing/water traffic
- explain Earth layers
- know how waves/wind/water reshape Earth's surface
- identify severe weather conditions
- use science apparatus
- make predictions
- summarise/organise data in tables/line/bar graphs
- analyse evidence
- draw conclusions
- recognise advances in science/technology have been made by different people in different cultures at different times

Novice Students (SC)

- have a limited understanding of circuits/electricity/magnets/light/sound
- name some elements/chemical symbols
- understand decomposition/competition/what coral reefs are/how plants and animals get energy/importance of protecting ecosystems
- recognise that sun is light/energy source and planets are seen by reflected light
- know how oceanic islands such as Bermuda are formed/ human decisions have changed Earth's land/oceans/atmosphere
- recognise some resources are not renewable
- plan an investigation
- obtain evidence
- interpret circle/line graphs
- recognise examples of sound/light technology
- understand things that affect health
- understand there are different types of scientists

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Bermuda Public School System Performance Standards

Social Studies (SS)

History (H)

Geography (G)

Civics (C)

Economics (E)

Social Studies (SS)

Advanced Students (SS)

- demonstrate a range of strategies in problem solving, such as causality, providing facts, comparing and contrasting information and identifying benefits and limitation in the analysis of historical actions such as independence and Human Rights
- analyse how physical features influence settlement and distribution of resources
- evaluate how government and political parties influence the democratic process in Bermuda, including citing documentation that would promote or hinder liberty, equality and justice
- examine the challenges and predict the outcomes of contemporary economic development on developing countries

Proficient Students (SS)

- examine Human Rights issues and how they affect passage of laws
- examine historical documents
- analyse how culture affects interpretation of experiences
- explain effects of government rule under colonialism
- show how science and technology change perceptions of the world
- interpret information on the Caribbean
- analyse how physical features affect culture
- use demographic data of Bermuda and Caribbean to make comparisons
- examine importance of the constitution and how it protects human rights
- examine Ethiopia's resistance to colonialism
- analyse changes in Bermuda's economy from agriculture to today
- identify and explain economic challenges Caribbean and African countries face

Partially Proficient Students (SS)

- identify the historical factors behind the evolution and development of human rights and the fight for political independence
- understand the causes and effect of Caribbean migration to Bermuda and the common cultural characteristics that link Bermuda, the Caribbean and Africa
- describe how and why Bermuda's political parties evolved
- define the methods used to gain independence
- describe the range of economic opportunity in Bermuda

Novice Students (SS)

- use visual and mathematical data in graphs
- demonstrate understanding of key terms
- describe ways in which African language, stories, folktales, music, and artistic creations serve as expression of culture and have influenced culture in Bermuda
- differentiate between renewable and non-renewable resources
- identify variety of regions and resources in Africa
- analyse the environmental consequences of humans changing the physical environment in Bermuda
- define the term human rights
- define the term constitution and identify the key players in developing Bermuda's constitution
- identify the range of economic opportunities in Bermuda

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