



2007-8 Benchmarks by grade: Grade 5

Mathematics

last update 2004-5

Data Handling	Measurement	Number	Pattern & Function	Shape & Space	Working Mathematically
<p>Grouping M.DH.G5.1 Knows that mode is a measure of average and that range is a measure of spread and uses both ideas to describe data sets M.DH.G5.2 Finds, describes and explains the range, mode, median & mean in a set of data and understands their usage.</p> <p>Graphing M.DH.G5.3 Displays data using appropriate graphs</p> <p>Probability M.DH.G5.4 Uses a numerical probability scale 0 to 10 or 0% to 100% M.DH.G5.5 Determines theoretical probability of an event and explains why it differs from experimental probability. M.DH.G5.6 Uses measures of central tendency - Mean - Medium - Mode</p>	<p>Weight & Mass M.M.G5.1 Uses measuring tools with simple scales, accurately. M.M.G5.2 Uses decimal notation in measurement Volume & Capacity M.M.G5.3 Selects most appropriate tools to measure volume M.M.G5.4 Uses decimal notation in measurement Time M.M.G5.5 Determines world-wide time (time zones) Length, Area & Perimeter M.M.G5.6 Uses decimal notation in measurement M.M.G5.7 Determines relationships between area and perimeter M.M.G5.8 Determines area and perimeter of irregular shapes Temperature M.M.G5.9 Understands that temperature can be both negative and positive Angles M.M.G5.10 Measures and constructs angles in degrees using a protractor</p>	<p>Place Value M.N.G5.1 Represents understanding of place value of numbers up to 1,000,000 (without concrete materials) -reads -writes -writes in expanded form -orders -compares -estimates M.N.G5.2 Understands place value of decimal numbers to 1000th place M.N.G5.3 Rounds to the nearest 10,000 M.N.G5.4 Rounds to the nearest tenth and hundredth Declarative M.N.G5.5 Identifies and recognizes prime and composite numbers M.N.G5.6 Reads, writes and explains positive and negative integers M.N.G5.7 Explains mean, median mode M.N.G5.8 Demonstrates understanding of lowest common denominator (e.g. simplifying fractions) M.N.G5.9 Demonstrates understanding of equivalence of fractions, mixed numbers and decimal notation M.N.G5.10 Estimates products (3 by 2 digit) M.N.G5.11 Estimates quotients (3 by 1 digit) M.N.G5.12 Understands percentage as part of 100 Procedural M.N.G5.13 Explains addition of negative integers M.N.G5.14 Recognizes negative numbers in relation to temperature M.N.G5.15 Finds mean median mode M.N.G5.16 Uses correct order of operations to solve multi-operation equations (BODMAS) M.N.G5.17 Uses decimals to thousandths M.N.G5.18 Models with concrete materials addition, subtraction, and multiplication, of decimals to hundredths M.N.G5.19 Solves three digit x two digit multiplication equations M.N.G5.20 Recalls division number facts: 3s, 6s, 4s, 8s, 7s M.N.G5.21 Reads and writes exponential notation M.N.G5.22 Finds highest common factor M.N.G5.23 Solves division with a two- digit divisor M.N.G5.24 Uses ratio and proportion to create a scaled diagram M.N.G5.25 Converts improper fractions to mixed numbers and vice versa M.N.G5.26 Simplifies fractions M.N.G5.27 Finds lowest common multiple (denominator) to compare and order fractions with different denominators M.N.G5.28 Models with concrete materials addition and subtraction of fractions that have different denominators M.N.G5.29 Locates and records measurements with decimals, fractions, and mixed numbers on a number line M.N.G5.30 Computes a given percentage of a whole number M.N.G5.31 Changes a fraction to a percentage to a decimal and vice versa Money M.N.G5.32 Is familiar with near equivalence, eg. \$ and Tsh, \$ and €, \$ and (home country currencies of class members) Calculator M.N.G5.33 Uses a calculator to check computations for addition, subtraction, multiplication and division at grade level M.N.G5.34 Uses percentage key on calculator M.N.G5.35 Uses square root key on calculator</p>	<p>Mathematical Properties & Language M.PF.G5.1 Understands the meaning and use of variables in simple expressions and equations M.PF.G5.2 Develops, explains and models simple algebraic formulas. M.PF.G5.3 Understands and uses exponents and roots in inverse functions $12^2 \sqrt{144}$</p> <p>Numerical Analysis and Generalisation M.PF.G5.4 Calculates multiples and factors of given numbers (e.g. HCF, HCM)</p>	<p>Vocabulary M.SS.G5.1 Identifies and uses the vocabulary of circles: - center point - diameter - radius - circumference M.SS.G5.2 Identifies and uses the vocabulary of types of angle: -straight -reflex Spatial Understanding M.SS.G5.3 Describes and models lines using appropriate vocabulary: e.g. perpendicular, parallel, vertical, horizontal, diagonal M.SS.G5.4 Uses a compass to construct a circle M.SS.G5.5 Draws a prescribed circle M.SS.G5.6 Constructs 2D nets from irregular 3D shapes Positional Language M.SS.G5.7 Uses coordinates to follow instructions M.SS.G5.8 Uses scale to enlarge/reduce</p>	<p><i>Solving and Reasoning: Key components for all students include developmentally appropriate approaches to investigating, formulating questions, constructing solutions, analyzing information, predicting and inferring, drawing conclusions and verifying</i></p> <p>M.WM.G5.1 Analyzes information to identify the different steps of multi-step problems at grade appropriate level. M.WM.G5.2 Chooses appropriate procedures and tools to solve problems M.WM.G5.3 Constructs, explains and justifies solutions using a variety of strategies M.WM.G5.4 Analyzes information to infer what is unknown in multi-step problems M.WM.G5.5 Makes conjectures and inferences based on prior knowledge to solve problems M.WM.G5.6 Distinguishes between relevant and irrelevant information in a problem M.WM.G5.7 Creates a diagram that illustrates the correct mathematical equations of a problem M.WM.G5.8 Reflects on and evaluates procedures</p>

Music

last update 2003-4

Performing: Singing	Performing: Playing Instruments	Creating, Composing	Listening
<p>Mu.PS.G5.1 Sings songs in tune from Tanzania and a variety of cultures, times, themes and places</p> <p>Mu.PS.G5.2 Displays awareness of a sensitivity to a variety of styles</p> <p>Mu.PS.G5.3 Maintains his/her part in 2-part harmony</p> <p>Mu.PS.G5.4 Sings in tune with accurate tonality and clarity</p> <p>Mu.PS.G5.5 Sings with clear diction displaying understanding of words of songs</p> <p>Mu.PS.G5.6 Controls voice to display a more developed sense of phrasing</p> <p>Mu.PS.G5.7 Can sing from more complex 2 and 3-part score</p> <p>Mu.PS.G5.8 Can create vocal improvisations in a variety of styles</p>	<p>Mu.PP.G5.1 Echo claps rhythms i) in compound time ii) using triplets iii) using 16th notes (semiquavers)</p> <p>Mu.PP.G5.2 Claps notated rhythms</p> <p>Mu.PP.G5.3 Plays a simple melody on an Off instrument</p> <p>Mu.PP.G5.4 Plays recorder pieces of increasing complexity using both lower and higher octave notes</p> <p>Mu.PP.G5.5 Is able to keep to a part in ensemble on recorder and other instruments</p> <p>Mu.PP.G5.6 Understands and is able to play from a notated score using whole of the treble clef and ledger lines</p> <p>Mu.PP.G5.7 Performs with increasing awareness of a variety of musical styles</p> <p>Mu.PP.G5.8 Keeps to own part in an ensemble</p> <p>Mu.PP.G5.9 Sights sings/plays simple treble pieces by recognizing upward and downward movement</p> <p>Mu.PP.G5.10 Has a working knowledge of the notes on the keyboard and is able to play simple melodies</p> <p>Mu.PP.G5.11 Plays melodies with a left hand chordal accompaniment on the keyboard</p>	<p>Mu.CC.G5.1 Improvises melodies using jazz scale and chordal structures</p> <p>Mu.CC.G5.2 Composes simple 4 and 8 – bar pieces in the keys of C,F or G, and play or sing them</p> <p>Mu.CC.G5.3 Composes showing understanding of a variety of musical forms</p> <p>Mu.CC.G5.4 Displays maturity and open-mindedness when composing with others</p> <p>Mu.CC.G5.5 Creates a graphic score and performs it showing ability to handle musical elements such as timbre, tempo, rhythm and pitch</p> <p>Mu.CC.G5.6 Makes choices about sound and organizes them in a way that uses basic indications of expression (tempo, mood, dynamics, texture, and timbre)</p>	<p>Mu.L.G5.1 Identifies and discuss features and historical background of various musical styles (e.g. jazz, pop, folk, classical, etc) using appropriate terminology</p> <p>Mu.L.G5.2 Is able to follow a graphic score recognizing features in a piece of music</p> <p>Mu.L.G5.3 Creates an original graphic score recognizing the structure and features of the music</p> <p>Mu.L.G5.4 Identifies musical markings such as the symbols for sharp, flat, natural, accents, repeat, crescendo, decrescendo</p> <p>Mu.L.G5.5 Listens critically to own compositions and performances</p> <p>Mu.L.G5.6 Offers constructive criticism to others about compositions and performances</p> <p>Mu.L.G5.7 Recognizes major symphonic works and musical styles and cultures</p>

Art updated 2006-7

Art concepts, appreciation, knowledge and skills will be developed in the following media at ALL grade levels: Drawing, Painting and Color, 3D and Clay, Textiles, Print Making.

Creative Processes	Elements of Art and Design	Visual Arts in Society	Reflection & Appreciation
<p>A.CP.G5.1 Makes close and precise observational drawings showing perspective, proportion, space, form, tone and texture using a range of techniques, tools and media</p> <p>A.CP.G5.2 Begins to develop own style and character</p> <p>A.CP.G5.3 Uses color to bring atmosphere to work</p> <p>A.CP.G5.4 Uses effect of light and color, texture and tone to paint from observation, imagination and memory</p> <p>A.CP.G5.5 Makes imaginative use of the knowledge they have acquired of tools, techniques and materials to express own ideas and feelings.</p> <p>A.CP.G5.6 Designs and makes artifacts in clay using a range of techniques and tools, responding to a specific context e.g. Historical exploration</p> <p>A.CP.G5.7 Uses acquired skills and knowledge of textiles to express own ideas and feelings</p> <p>A.CP.G5.8 Designs a complete print for fabrics, book covers etc, combining materials and media.</p> <p>A.CP.G5.9 Designs a printing block using lino or polyblock effectively for a specific outcome e.g. animals prints</p>	<p>A.EAD.G5.1 Selects and uses confidently the appropriate tools and media for a given task</p> <p>A.EAD.G5.2 Paints sensitively and accurately using full range of brushes with precision</p> <p>A.EAD.G5.3 Uses effect of light and color, texture and tone to paint from observation, imagination and memory</p> <p>A.EAD.G5.4 Uses prior knowledge of materials in mix media work</p> <p>A.EAD.G5.5 Makes imaginative use of the knowledge they have acquired of tools, techniques and materials to express own ideas and feelings.</p> <p>A.EAD.G5.6 Designs and makes artifacts in clay using a range of techniques and tools, responding to a specific context e.g. Historical exploration</p> <p>A.EAD.G5.7 Uses acquired skills and knowledge of textiles to express own ideas and feelings</p> <p>A.EAD.G5.8 Combines different media including textiles for a specific outcome</p> <p>A.EAD.G5.9 Shows attention to detail, technique, color and texture</p> <p>A.EAD.G5.10 Selects & uses appropriate tools safely</p> <p>Uses knowledge of color combinations</p>	<p>A.VAS.G5.1 Designs a printing block using lino or polyblock effectively for a specific outcome e.g. animals prints</p> <p>A.VAS.G5.2 Examines critically the work of others using an art vocabulary and knowledge of relevant art movement</p> <p>A.VAS.G5.3 Talks about composition of works of art</p>	<p>A.RP.G5.1 Examines own work critically in order to make improvements</p> <p>A.RP.G5.2 Gives constructive criticism to others about their work</p> <p>A.RP.G5.3 Examines critically the work of others using an art vocabulary and knowledge of relevant art movement</p> <p>A.RP.G5.4 Talks about composition of works of art</p>

Information Communication Technology

currently under review

Physical Education

updated 2006-7

Body control & spatial awareness	Adventure challenge	Athletes	Movement to Music	Games	Gymnastics	Health and Fitness Related Activities
PE.BCSA.G5.1 In Grade Five body control and spatial awareness activities will be incorporated into other PE content areas.	PE.AC.G5.1 Can solve challenging problems individually. PE.AC.G5.2 Can use specialized equipment to assist problem solving (E.g. compass).	PE.A.G5.1 Choose the best pace for a variety of running events to improve a personal target PE.A.G5.2. PE.A.G5.3 Show accuracy and good technique when throwing for distance (javelin, discus, shot) PE.A.G5.4 Organize and manage an athletic event well safely taking on the role of recorder, judge, athlete and measurer. PE.A.G5.5 Identify good athletic performance and explain why it is good using agreed criteria Understands and applies safety rules in athletic events.	PE.MM.G5.1 Can express feelings and moods using imagination and original ideas. PE.MM.G5.2 Can create more complex step patterns. PE.MM.G5.3 Can recognize techniques, form of dance. E.g. Classical, traditional, folk. PE.MM.G5.4 Is aware of the different cultural significance of dances.	PE.G.G5.1 Has participated in activities that refine locomotor skills. PE.G.G5.2. Has developed their own innovative invasion game PE.G.G5.3. Strikes and fields a moving ball consistently and throws with accuracy. PE.G.G5.4. Uses different techniques for passing, controlling, dribbling and shooting the ball in invasion games. PE.G.G5.5 Uses forehand, backhand and overhead shots as well as volleys in a variety of net games. PE.G.G5.6 Understands why rules exist in games and accepts and respects the decision of game officials. PE.G.G5.7 Has developed a clear understanding of positional play and attacking and defending tactics. PE.G.G5.8 Has developed a sense of fair play and sportsmanship, empathizing with others.	PE.Gym.G5.1 Has demonstrated body control, combining movements to create sequences on the floor and on apparatus. PE.Gym.G5.2. Has demonstrated body control when balancing with a partner PE.Gym.G5.3 Has developed different ways of working with a partner or small group. PE.Gym.G5.4 Has designed a gymnastics sequence, alone and with a partner or small group that incorporates at least five of the learned disciplines of rolling, balancing and traveling. PE.Gym.G5.5 Develops basic criteria to make simple judgments about performances and suggest ways they could be improved.	PE.HF.G5.1 Exercises for 30 minutes every day PE.HF.G5.2 Understands the elements of an effective warm up and cool down; can plan and deliver a warm up/cool down for a partner or small group. PE.HF.G5.3 Recognizes understands and measures the physical changes that occur to our bodies when we exercise. PE.HF.G5.4 Recognizes the elements of a healthy lifestyle: Exercise, diet, rest etc PE.HF.G5.5 Measures, records and has an understanding of resting, exercise and recovery heart rate. PE.HF.G5.6 Is aware of the need for appropriate PE equipment (hat, water bottle, PE kit, sunscreen) PE.HF.G5.7 Understands and demonstrates the importance of good personal hygiene PE.HF.G5.8 Maintains continuous aerobic activity for specified time. (12 min)

Swimming

updated 2006-7

Safety and Survival	Stroke Technique & Fitness		Water Skills	Water Games
SW.G5.1 Understands and follows all pool rules SW.G5.2 Understands open water safety and how to help others <ul style="list-style-type: none"> Reach and throw, don't go – no equipment/with equipment Wading with equipment Recovery position for casualty Beach stories – equipment at hand that you can use Buddy swimming, basic first aid SW.G5.3 Treads water for at least 4 minutes with one arm above head (using international sign for "help"). Alternate signal hand and rest/float.	SW.G5.4 Participates in water aerobics SW.G5.5 Swim 150 Meters <ul style="list-style-type: none"> Continuous swim with no rest Confidence in completing 150m Cooper test, recording individual performance and progress SW.G5.6 Swims 50m Front Crawl <ul style="list-style-type: none"> Regular breathing pattern on two sides Good arm recovery – elbow high, shoulder roll S movement of arm through water Tumble turn SW.G5.7 Swim 25m Sidestroke <ul style="list-style-type: none"> horizontal body position scissor kick alternating arm action SW.G5.8 Swim 25 m Butterfly <ul style="list-style-type: none"> arms extended forward paired leg action 	SW.G5.9 Swims 50m Backstroke <ul style="list-style-type: none"> Horizontal body position Effective propulsion, S movement of arm Shoulder roll Confidence in completing distance Option of tumble turn SW.G5.10 Swims underwater for 12.5m <ul style="list-style-type: none"> full arm extension pull then push to hips strong symmetrical leg kick 	SW.G5.11 Swim 5 meters, pikes, surface dives to retrieve a brick from deep water; carries brick at least 15 meters, using back or side stroke. SW.G5.12 Performs race dive with a variety of different techniques SW.G5.13 Diving board skills <ul style="list-style-type: none"> basic steps different entries 	SW.G5.14 Plays increasingly complex water games <ul style="list-style-type: none"> Water polo in deep end using targets

Host Country Language (Swahili) and Culture Y8 = Grade 5

last updated SY 2004- 2005

Students joining school later may be at Y1 in Swahili even though they are placed in a higher grade according to age. **NS = Native Speaker, NNS = Non-Native Speaker**; when not highlighted, the benchmark applies to both.

Ongoing expectations for students from Y1 to Y5:

- Listens to stories for enjoyment
- Participates actively in classroom experiences with music, sports, games, songs, dances, or musical instruments from the target cultures and extends these experiences into their personal lives.

Ongoing expectations from Y3 to Y5

- Uses the target language for a variety of spoken activities
- Shares information of their choice with audiences outside the classroom
- Demonstrates an understanding of a variety of speech sources (teacher, peers, native speakers, other target language speakers, tapes, CD-ROMs, and videos).

Speaking	Listening	Reading	Writing	Socio-Cultural Understanding
<p>Sw.S.Y8.1 Shares information of their choice with audiences outside the classroom.</p> <p>Sw.S.Y8.2NNS Maintains simple conversations in the present, past and future tenses at the sentence level on a variety of familiar topics.</p> <p>Sw.S.Y7.2NS Uses Swahili proverbs and idioms appropriately in speaking.</p> <p>Sw.S.Y8.3 Actively participates in classroom experiences with music, sports, games, songs, dance, or musical instruments from the target culture, and extends these experiences into their personal lives.</p> <p>Sw.S.Y8.4 Recognizes linguistic patterns that occur in the foreign language and compare them with native language patterns.</p> <p>Sw.S.Y8.5 Uses linguistic patterns in limited monitoring of speech and writing. NOTE: This does not imply analytical treatment of grammar, or a focus on grammatical drill.</p>	<p>Sw.L.Y8.1NNS Recognizes the target language even when spoken in a variety of dialects and respond with efforts to communicate as appropriate</p> <p>Sw.L.Y8.1NS Understands age appropriate Swahili idioms and proverbs</p>	<p>Sw.R.Y8.1 Reads for enjoyment using the target language</p> <p>Sw.R.Y8.1NS Recognizes <i>mizani, vina</i> and <i>kituo</i> when reading <i>mashairi</i></p> <p>Sw.R.Y8.2 Read linguistically and developmentally appropriate passages including, but not limited to articles, stories, poems and other texts.</p> <p>Sw.R.Y8.3 Reads to find needed information</p> <p>Sw.R.Y8.4 Retells or paraphrases main elements of a story or passage</p> <p>Sw.R.Y8.5 Demonstrates comprehension of extended written discourse.</p>	<p>Sw.W.Y8.1 Writes using sentences and paragraphs where appropriate</p> <p>Sw.W.Y8.2NNS Writes short texts on topics of personal interest, such as letters and illustrated stories.</p> <p>Sw.W.Y8.2NS Writes in a variety of genre (stories, captions, riddles, letters) using correct structures.</p> <p>Sw.W.Y8.3 Summarizes personal information or research that they have done, based on templates or models in the target language.</p> <p>Sw.W.Y8.4 Uses self- and peer-editing for a variety of purposes</p>	<p>Being developed</p>

Additional Languages - French/Spanish Third Year

Speaking	Listening	Reading	Writing	Socio-Cultural Understanding
<p>AL.S.Y3.1 Talk about developmentally appropriate topics using a variety of appropriate vocabulary and idioms:</p> <p>AL.S.Y3.2 Ask and answer basic questions using appropriate vocabulary</p> <p>AL.S.Y3.3 Communicates about appropriate topics using the developmentally appropriate grammatical structures</p> <p>AL.S.Y3.4 Recognizes linguistic patterns that occur in the target language and compares them with native language patterns</p> <p>AL.S.Y3.5 Takes part in conversation and dialogue and expresses personal feelings and opinions.</p> <p>AL.S.Y3.6 Communicates orally using sentences, as appropriate, with some use of extended discourse</p>	<p>AL.L.Y3.1 Follows and begins to give complex instructions</p> <p>AL.L.Y3.2 Understands an appropriately paced conversation from various sources on appropriate topics</p> <p>AL.L.Y3.3 Understands presentations given by students and native speakers, on a variety of concrete or familiar topics</p> <p>AL.L.Y3.4 Demonstrates an understanding of a variety of speech sources (e.g. teacher, peers, native speakers, tapes, etc.)</p> <p>AL.L.Y3.5 Recognizes the target language even when spoken in a variety of dialects</p> <p>AL.L.Y3.6 Uses information obtained through the target language and culture to satisfy personal needs and interests</p>	<p>AL.R.Y3.1 Reads for enjoyment in the target language</p> <p>AL.R.Y3.2 Reads linguistically and developmentally appropriate passages</p> <p>AL.R.Y3.3 Demonstrates comprehension of ideas in a variety of authentic material</p> <p>AL.R.Y3.4 Reads to find needed information</p> <p>AL.R.Y3.5 Retells or paraphrases main elements of an appropriate story or passage</p> <p>AL.R.Y3.6 Answers simple information questions related to a text</p>	<p>AL.W.Y3.1 Communicates effectively and appropriately in writing about concrete situations</p> <p>AL.W.Y3.2 Spells commonly used words correctly</p> <p>AL.W.Y3.3 Writes using sentences or clusters of language</p> <p>AL.W.Y3.4 Writes short texts of personal interest, such as letters or illustrated stories</p>	<p>AL.SC.Y3.1 Identifies, compares and contrasts diverse cultural practices and products, including language, emphasizing similarities as well as differences.</p> <p>AL.SC.Y3.2 Identifies selected works of art, music and literature of the target cultures.</p> <p>AL.SC.Y3.3 Uses culturally appropriate language and behavior in both formal and informal target language situations (greeting, leave-taking, eating customs, travel, school, etc.).</p> <p>AL.SC.Y3.4 Actively participates in classroom experiences with music, sports, games, songs, dance, or musical instruments from the target cultures</p>