FIFTH GRADE CURRICULUM OVERVIEW

MATHEMATICS (SINGAPORE MATH)

Operations and Algebraic Thinking

- Write and interpret numerical expressions
  - Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
  - Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.
- Analyze patterns and relationships
  - Generate two numerical patterns using two given rules.
  - Identify apparent relationships between corresponding terms.
  - Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.

Number and Operations in Base Ten

- Understand the place value system.
  - Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.
  - Explain patterns in the number of zeros of the product when multiplying a number by powers of 10 and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
  - Read, write and compare decimals to the thousandths using base-ten numerals, number names, and expanded form.
  - Compare two decimals to thousandth based on meanings of the digits in each place using >, =, and < symbols to record the results of comparisons.
  - Use place value understanding to round decimals to any place.
- Perform operations with multi-digit whole numbers and with decimals to hundredths.
  - Fluently multiply multi-digit whole numbers using the standard algorithm.
  - Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place vale, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
  - Add subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Number and Operations--Fractions

- Use equivalent fractions as a strategy to add and subtract fractions.
  - Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce and equivalent sum or difference of fractions with like denominators.
  - Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators.
  - Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.
- Apply and extend previous understandings of multiplication and division.
  - Interpret a fraction as division of the numerator by the denominator.
  - Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.
  - Apply and extend previous understanding of multiplication to multiply a fraction or a whole number by a fraction.
  - Interpret the product $(a/b) \times q$ as the parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$.
  - Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.
  - Interpret multiplication as scaling (resizing) by comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.
  - Interpret multiplication as scaling (resizing) by explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number; explaining why multiply a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.
  - Solve real world problems involving multiplication of fractions and mixed numbers.
  - Apply and extend previous understanding of division to divide unit fractions by whole numbers and whole numbers by unit fractions.
  - Interpret division of a unit fraction by a non-zero whole number and compute such quotients.
  - Interpret division of a whole number by a unit fraction, and compute such quotients.
  - Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions.

Measurement and Data

- Convert like measurement units within a given measurement system.
  - Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multistep, real world problems.
- Represent and interpret data.
  - Make a line plot to display a data set of measurements in fractions of a unit. Use operations on fractions for this grade to solve problems involving information presented in line plots.
- Geometric measurement: understand concepts of volume.
  - Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
  - A cube with side length 1 unit, called a "unit cube", is said to have "one cubic unit" of volume, and can be used to measure volume.
  - A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.
  - Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.

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- ◦ Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.
- ◦ Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base.
- ◦ Apply the formulas V = l x w x h and V = b x h for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.
- ◦ Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

Geometry

- **Graph points on the coordinate plane to solve real-world and mathematical problems.**
  - ◦ Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given pint in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction on one axis, and the second number indicates how far to travel in the direction of the second axis with, with the convention that the names of the two axes and the coordinates correspond.
  - ◦ Represent real world and mathematical problems by graphing points in the context of the situation.

- **Classify two-dimensional figures into categories based on their properties.**
  - ◦ **Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.**
  - ◦ Classify two-dimensional figures in a hierarchy based on properties.

Mathematical Practices

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.
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ENGLISH LANGUAGE ARTS

Reading

1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
3. Analyze how and why individuals, events, and ideas develop and interact over the course of a text.

Craft and Structure

1. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
2. Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g. a section, chapter, scene, or stanza) relate to each other and the whole.
3. Assess how point of view or purpose shapes the content and style of a text.

Integration of Knowledge and Ideas

1. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
2. Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
3. Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.
4. Read and comprehend complex literary and informational texts independently and proficiently.

Speaking and Listening

Comprehension and Collaboration

1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
3. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.

Presentation of Knowledge and Ideas

1. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.
2. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.

3. Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.

Language

Conventions of Standard English

1. 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
2. 2. Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing.
3. Knowledge of Language
4. 3. Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

Vocabulary Acquisition and Use

1. Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.
2. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
3. Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.

Writing

Text types and Purposes

1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
3. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

Production and distribution of Writing

1. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
2. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.
3. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

Research to build and present knowledge

1. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
2. Gather relevant information from multiple print and digital sources assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.
3. Draw evidence from literary or informational texts to support analysis, reflection, and research.

Range of writing

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1. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

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SCIENCE

Inquiry Practices/ Scientific Method

Generate scientific questions based on observations, investigations, and research.

- Design and conduct scientific investigations.
- Use tools and equipment (spring scales, stop watches, meter sticks and tapes, models, hand lens) appropriate to scientific investigations.
- Use metric measurement devices in an investigation.
- Construct charts and graphs from data and observations.
- Identify patterns in data.
- Analyze information from data tables and graphs to answer scientific questions.
- Evaluate data, claims, and personal knowledge through collaborative science discourse.
- Communicate and defend findings of observations and investigations using evidence.
- Draw conclusions from sets of data from multiple trials of a scientific investigation.
- Use multiple sources of information to evaluate strengths and weaknesses of claims, arguments, or data.

Engineering Design

- **Define a simple design problem reflecting a need or a want that includes specified criteria fro success and constraints on materials, time or cost.**
- Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
- **Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.**
- Analyze the relationship of environmental change and catastrophic events to species extinction.

Motion and Stability: Forces and Interactions

- Support an argument that the gravitational force exerted by Earth on objects is directed down.

Earth's Place in the Universe

- **Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth.**
- **Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.**

Matter and Its Interactions

- **Develop a model to describe that matter is made of particles too small to be seen.**
- **Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.**
- **Make observations and measurements to identify materials based on their properties.**
- **Conduct an investigation to determine whether the mixing of two or more substances results in new substances.**

Energy

- Use models to describe that that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.

From Molecules to Organisms: Structures and Processes

- Illustrate how motion can be measured and represented on a graph.
- Support an argument that plants get the materials they need for growth chiefly from air and water.
- Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
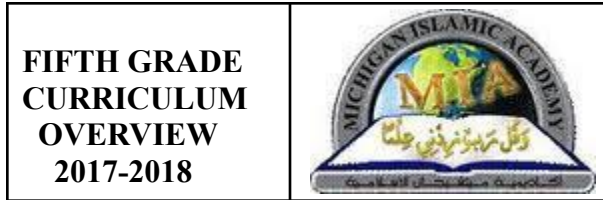
Earth's Systems

- Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.
- Describe and graph the amounts and percentages of water and fresh water in various

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reservoirs to provide evidence about the distribution of water on Earth.

Earth and Human Activity

• Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

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SOCIAL STUDIES

Native Americans Before Columbus
- Use maps to locate peoples in the desert Southwest, the Pacific Northwest, the nomadic nations of the Great Plains, and the woodland peoples east of the Mississippi River (Eastern Woodlands).
- Compare how American Indians in the desert Southwest and the Pacific Northwest adapted to or modified the environment.
- Describe American Indian life with respect to governmental and family structures, trade, and views on property ownership and land use.

The Era of Exploration
- Identify the causes and consequences of European exploration and colonization.
- Describe the lives of peoples living in western Africa prior to the 16th century.
- Describe the environmental, political, and cultural consequences of the interactions among European, African, and American Indian peoples in the late 15th through the 17th century.

Colonization and Settlement
- Compare the regional settlement patterns and describe significant developments in Southern, New England, and the mid-Atlantic colonies.
- Analyze the development of the slave system in the Americas and its impact upon the life of Africans.
- Distinguish among and explain the reasons for regional differences in colonial America.

Revolution and the New Nation
- Identify the major political, economic, and ideological reasons for the American Revolution.
- Explain the multi-faceted nature of the American Revolution and its consequences.

- Explain some of the challenges faced by the new nation under the Articles of Confederation, and analyze the development of the Constitution.

Citizenship
- Clearly state a problem as public policy issue, analyze various perspectives, and generate and evaluate possible alternative resolutions.
- Communicate a reasoned position on a public issue.
- Act constructively to further the public good.

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RELIGIOUS STUDIES

Arabic
- Improve Arabic language in listening skills, reading, reading comprehension, translation, dialogue, pronunciation, spelling, vocabulary, and writing.
- Increase knowledge in Arabic and move at a faster pace.
- Foster enjoyment and interest in the Arabic language by
- incorporating fun and interesting activities

Qur'an
- Recitation with correct Arabic pronunciation
- Meaning of each Ayaat and reason behind revelation
- Applying meaning of Ayaat in everyday lives:
  - o Surat Al-Qalam
  - o Surat Al-Mulk
  - o Surat Al-Waq'a
  - o Surat Al-Rahman
  - o Surat Al-Qamar

Islamic Studies

- Appreciate the importance of Tawheed.
- Maintain an unshakable faith in Allah and the unseen world.
- Learn that Allah is the only creator of this universe.
- Know that no one is worthy of worship except Allah.
- Understand that Allah has the greatest names and unique attributes.
- List some of Allah's names.
- Describe what we should learn from Allah's names.

- Describe the rewards we receive when we learn these beautiful names.
- know Allah through his names and attributes.
- Define Shirk (Polytheism), Ar-Riyaa (Intention to show off), and Sihr (Black magic)
- List the different types of Shirk.
- Describe how bad it is to worship others beside Allah (SWT).
- Understand why we need to recite surat Al-Mulk every night
- Discuss the definition of As-Sirat Ul-Mustaqeem.
- Understand how As-Sirat Ul-Mustaqeem leads to Jannah.
- Build an unshakable trust in Allah.
- Demonstrate how life is a test.
- Describe the main message of all Prophets.
- Understand the one message of all Prophets.
- Explain what type of people the prophets were.
- Describe the miracles the prophets brought with them.
- Describe how we should respect our Prophet (PBUH).
- Discuss who the prophets and messengers of Allah were.
- Demonstrate how there were many messengers with the same message.
- Compare between the prophets and messengers.
- Know the prophets who were messengers.
- List the messengers who received books and know the names of their books.
- Connect and apply the great virtues of knowledge, patience, bravery, and wisdom in the daily life setting.
- Describe how Prophet Nuh called his people to Islam.
- Discuss how the people of Nuh reacted to his message.
- Describe what Allah did to the disbelievers.
- Describe the meaning of Surat Nuh.
- Learn that asking forgiveness is a form of Ibadah.
- Describe the importance of Istighfar, or seeking Allah's forgiveness.
- Describe how idol worshipping did start.
- Appreciate that Allah chose Hud as a prophet for the people of 'Aad.
- Describe how the people of 'Aad did reject Prophet Hud. Describe how Allah punished the disbelievers among the people of 'Aad.
- Explain how Allah is Al-Jabbar.
- Appreciate that Allah chose Salih as a prophet for the people of Thamood.
- Describe how people of Thamood disobeyed Allah.
- Describe what happened to the disbelievers.
- Describe who Salman Al-Farisi was?
- Explain how deep thinking leads to Allah.
- Appreciate diversity.
- Describe how racism is not tolerated in Islam.

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- Describe the events that lead to the battle of the trench.
- Demonstrate the creativity of Salman Al-Farisi.
- Explain how team work leads to success.
- Appreciate Allah's Mercy.
- Define the term Betrayal.
- Learn the value of trust.
- Know that Allah always protects his believers.
- Explain how belief in the Unseen World leads to Jannah.
- Contrast between Jannah and Hellfire.
- Know the importance of performing Salat.
- Define Khushoo.
- Describe why Khushoo' is important and how to develop it.
- Know how we can achieve Khushoo during prayer and worship.
- Define Salat A-Nawafil
- Compare between salat At-Tatawo, and Salat Al-Fardh.
- Appreciate the importance of voluntary prayers.
- Define Salat Ud-Dhuha
- Appreciate the importance of Salat Ud-Dhuha.
- Define Salat Ul-Watr.
- Describe how it should be performed.
- Define Al-Qunoot.
- Describe how the Prophet (PBUH) prayed
- Define Salat Ul-Musafir.
- Describe when and how we shorten our salat.
- Describe when we can combine prayers.
- Describe how we can be grateful to Allah.
- Discuss who gave us everything we have.
- Define sujood Ushukr
- Explain how important it is to appreciate Allah's Gifts.
- Explain what it means to forgive.
- Demonstrate who truly the strong person is.
- Build self-control character.
- Explain different aspects of respect.
- Demonstrate that respect goes beyond human relations to include dealing with animals and the environment.
- Learn about what Allah has prepared for his believers in Janna.
- Describe Janna.
- Explain why there is dress code for Muslims.
- Know the different requirements for boys and girls.
- Demonstrate how important is to use the internet wisely.
- Know that the internet can be used to worship Allah.