

## MATHEMATICS (SINGAPORE MATH)

### Number and Operations

- Read and write numbers to 1,000,000; relate them to the quantities they represent; compare and order.
- Compose and decompose numbers using place value to 1,000,000's, e.g., 25,068 is 2 ten thousands, 5 thousands, 0 hundreds, 6 tens, and 8 ones.
- Understand the magnitude of numbers up to 1,000,000; recognize the place values of numbers and the relationship of each place value to the place to its right, e.g., 1,000 is 10 hundreds.
- Find all factors of any whole number through 50, list factor pairs, and determine if a one-digit number is a factor of a given whole number.\*
- List the first ten multiples of a given one-digit whole number; determine if a whole number is a multiple of a given one-digit whole number.
- Know that some numbers including 2, 3, 5, 7, and 11 have exactly two factors (1 and the number itself) and are called prime numbers.
- Use factors and multiples to compose and decompose whole numbers
- Add and subtract whole numbers fluently
- Multiply two-digit numbers by 2, 3, 4, and 5 using the distributive property
- Multiply fluently any whole number by a one-digit number and a three-digit number by a two-digit number; for a two-digit by one-digit multiplication use distributive property to develop meaning for the algorithm
- Divide numbers up to four-digits by one-digit numbers and by 10.
- Find the value of the unknowns in equations
- Use the relationship between multiplication and division to simplify computations and check results.
- Solve contextual problems involving whole number multiplication and division

### Decimals and Fractions

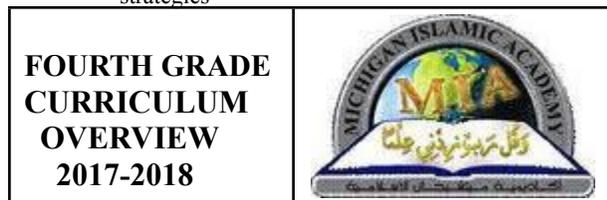
- Read and interpret decimals up to two decimal places; relate to money and place value decomposition.
- Know that terminating decimals represents fractions whose denominators are 10

- Locate tenths and hundredths on a number line.
- Read, write, interpret, and compare decimals up to two decimal places.
- Write tenths and hundredths in decimal and fraction forms, and know the decimal equivalents for halves and fourths.
- Understand fractions as parts of a set of objects
- Explain why equivalent fractions are equal, using models such as fraction strips or the number line for fractions with denominators of 12 or less, or equal to 100.
- Locate fractions with denominators of 12 or less on the number line; include mixed numbers
- Understand the relationships among halves, fourths, and eighths and among thirds, sixths, and twelfths.
- Know that fractions of the form  $\frac{m}{n}$  where  $m$  is greater than  $n$ , are greater than 1 and are called improper fractions; locate improper fractions on the number line
- Write improper fractions as mixed numbers, and understand that a mixed number represents the number of “wholes” and the part of a whole remaining.
- Compare and order up to three fractions with denominators 2, 4, and 8, and 3, 6, and 12, including improper fractions and mixed numbers.
- Add and subtract fractions less than 1 with denominators through 12 and/or 100, in cases where the denominators are equal or when one denominator is a multiple of the other
- Add and subtract fractions less than 1 with denominators through 12 and/or 100, in cases where the denominators are equal or when one denominator is a multiple of the other
- Solve contextual problems involving sums and differences for fractions where one denominator is a multiple of the other
- Find the value of an unknown in equations
- Multiply fractions by whole numbers, using repeated addition and area or array models
- For problems that use addition and subtraction of decimals through hundredths, represent with mathematical statements and solve
- Add and subtract decimals through hundredths
- Multiply and divide decimals up to two decimal places by a one-digit whole number where the result is a terminating decimal

### Estimation

- Estimate the answers to calculations involving addition, subtraction, or multiplication.
- Know when approximation is appropriate and use it to check the reasonableness of answers; be familiar with common place-value errors in calculations.

- Make appropriate estimations and calculations fluently with whole numbers using mental math strategies



## MATHEMATICS

### Measurement

- Measure using common tools and select appropriate units of measure
- **Give answers to a reasonable degree of precision in the context of a given problem.**
- **Measure and compare integer temperatures in degrees.**
- Measure surface area of cubes and rectangular prisms by covering and counting area of the faces.
- Carry out the following conversions from one unit of measure to a larger or smaller unit of measure: meters to centimeters, kilograms to grams, liters to milliliters, hours to minutes, minutes to seconds, years to months, weeks to days, feet to inches, ounces to pounds.
- Know and understand the formulas for perimeter and area of a square and a rectangle; calculate the perimeters and areas of these shapes and combinations of these shapes using the formulas.
- **Find one dimension of a rectangle given the other dimension and its perimeter or area.**
- Find the side of a square given its perimeter or area.
- Solve contextual problems about perimeter and area of squares and rectangles in compound shapes.
- Identify right angles and compare angles to right angles.
- **Solve contextual problems about surface area.**

### Geometry

- **Identify and draw perpendicular, parallel, and intersecting lines using a ruler and a tool or object with a square (90°) corner.**
- **Identify basic geometric shapes including isosceles, equilateral, and right triangles, and use their properties to solve problems.**
- **Identify and count the faces, edges, and vertices of basic three-dimensional geometric solids including cubes, rectangular prisms, and pyramids; describe the shape of their faces.**
- Recognize plane figures that have line symmetry
- **Recognize rigid motion transformations (flips, slides, turns) of a two-dimensional object.**

### Data and Probability

- **Construct tables and bar graphs from given data.**
- Order a given set of data, find the median, and specify the range of values.
- Solve problems using data presented in tables and bar graphs,

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**ENGLISH LANGUAGE ARTS**

**Reading**

**Word Recognition and Word Study**

- explain how to use word structure, sentence structure, and prediction to aid in decoding words and understanding the meanings of words encountered in context.
- use structural, syntactic, and semantic cues including letter-sound, rimes, base words, affixes, and syllabication to automatically read frequently encountered words, decode unknown words, and decide meanings including multiple meaning words
- automatically recognize frequently encountered words in print with the number of words that can be read fluently increasing steadily across the school year.
- know the meanings of words encountered frequently in grade-level reading and oral language contexts.
- acquire and apply strategies to identify unknown words or word parts; self-monitor, and construct meaning by engaging actively in reading a variety of genre, self-correcting, and using a thesaurus.
- and adjectives

**Fluency**

- fluently read beginning grade-level text and increasingly demanding text as the year proceeds.

**Vocabulary**

- in context, determine the meaning of words and phrases including similes, metaphors, content vocabulary, and literary terms using strategies and resources including context clues, semantic feature analysis, and a thesaurus.

**Narrative Text**

- describe the shared human experience depicted in classic, multicultural, and contemporary literature recognized for quality and literary merit.
- identify and describe the structure, elements, and purpose of a variety of narrative genre including poetry, myths, legends, fantasy, and adventure.
- analyze characters' thoughts and motivation through dialogue, various character roles, and functions including hero, anti-hero, or narrator;

know first person point of view and identify conflict and resolution.

- explain how authors use literary devices including flash-forward and flashback to depict time, setting, conflicts, and resolutions to enhance the plot and create suspense

**Informational Text**

- identify and describe the structure, elements, features, and purpose of a variety of informational genre including autobiography/biography, personal essay, almanac, and newspaper.
- identify and describe informational text patterns including compare/contrast, cause/effect, and problem/solution.
- explain how authors use text features including appendices, headings, subheadings, marginal notes, keys and legends, figures, and bibliographies to enhance the understanding of key and supporting ideas.

**Comprehension**

- connect personal knowledge, experiences, and understanding of the world to themes and perspectives in text through oral and written responses.
- retell through concise summarization grade-level narrative and informational text.
- explain relationships among themes, ideas, and characters within and across texts to create a deeper understanding by categorizing and classifying, comparing and contrasting, or drawing parallels across time and culture.
- apply significant knowledge from grade-level science, social studies, and mathematics texts.

**Metacognition**

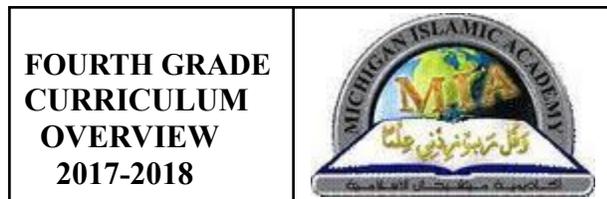
- self-monitor comprehension when reading or listening to text by automatically applying and discussing the strategies used by mature readers to increase comprehension including: predicting, constructing mental images, visually representing ideas in text, questioning, rereading or listening again if uncertain about meaning, inferring, summarizing, and engaging in interpretive discussions.
- plan, monitor, regulate, and evaluate skills, strategies, and processes to construct and convey meaning (e.g., decoding unknown words) and use graphic organizers to deepen their understanding of compare/contrast, and sequential organizational patterns.

**Critical Standards**

- develop, discuss, and apply individual and shared standards using student/class created rubrics and begin to assess the quality, accuracy, and relevance of their own writing and the writing of others.

**Reading Attitude**

- be enthusiastic about reading and do substantial reading and writing on their own.

**ENGLISH LANGUAGE ARTS****Writing****Writing Genre**

- write a cohesive narrative piece such as a myth, legend, fantasy, or adventure creating relationships among setting, characters, theme, and plot.
- write poetry based on reading a wide variety of grade-appropriate poetry.
- write an informational comparative piece that demonstrates understanding of central and supporting ideas using an effective organizational pattern (e.g., compare/contrast) and informational text features.
- use the writing process to produce and present a research project using a teacher-approved topic; find and narrow research questions; use a variety of resources; take notes; and organize relevant information to draw conclusions.

**Writing Process**

- set a purpose, consider audience, and replicate authors' styles and patterns when writing a narrative or informational piece.
- apply a variety of pre-writing strategies for both narrative and informational writing
- draft focused ideas using a variety of drafting techniques composing coherent and mechanically sound paragraphs when writing compositions.
- revise drafts based on constructive and specific oral and written responses to writing by identifying sections of the piece to improve sequence and flow of ideas
- proofread and edit writing using appropriate resources (e.g., dictionary, spell check, grammar check, grammar references, writing references) and grade-level checklists both individually and in groups.

**Personal Style**

- exhibit personal style and voice to enhance the written message

**Grammar and Usage**

- in the context of writing, correctly use simple and compound sentences; direct and indirect objects; prepositional phrases; adjectives; common and proper nouns as subjects and objects; pronouns as antecedents; regular and irregular verbs; hyphens between syllables; apostrophes in contractions; and commas in salutations to set off words; phrases and dialogue; quotation marks or italics to identify titles or names.

**Spelling**

- in the context of writing, correctly spell frequently encountered words (e.g., roots, inflections, prefixes, suffixes, multi-syllabic); for less frequently encountered words, use structural cues.

**Handwriting**

- Write neat and legible compositions.

**Writing Attitude**

- **be enthusiastic about writing and learning to write.**

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**SCIENCE**

**Science Processes**

**Inquiry Process**

- Make purposeful observation of the natural world using the appropriate senses
- Generate questions based on observations.
- Plan and conduct simple and fair investigations
- Manipulate simple tools that aid observation and data collection
- Make accurate measurements with appropriate units
- Construct simple charts and graphs from data and observations

**Inquiry Analysis and Communication**

- Summarize information from charts and graphs to answer scientific questions
- Share ideas about science through purposeful conversation in collaborative groups.
- Communicate and present findings of observations and investigations
- Develop research strategies and skills for information gathering and problem solving.
- **Compare and contrast sets of data from multiple trials of a science investigation to explain reasons for differences**

**Reflection and Social Implications**

- Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.
- Use data/samples as evidence to separate fact from opinion.
- Use evidence when communicating scientific ideas.
- Identify technology used in everyday life
- Identify current problems that may be solved through the use of technology.
- Describe the effect humans and other organisms have on the balance of the natural world.
- Describe how people have contributed to science throughout history and across cultures.

**Physical Science**

**Energy**

- Identify heat and electricity as forms of energy
- **Demonstrate how temperature can be increased in a substance by adding energy.**
- Describe heat as the energy produced when substances burn, certain kinds of materials rub against each other, and when electricity flows through wire.
- Describe how heat is produced through electricity, rubbing, and burning
- Demonstrate how electrical energy is transferred and changed through the use of a simple circuit.
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**Properties of Matter**

- Measure the weight (spring scale) and mass (balances in grams or kilograms) of objects
- Measure volumes of liquids in milliliters and liters
- Compare and contrast the states (solids, liquids, gases) of matter.
- Demonstrate magnetic field by observing the patterns formed with iron filings using a variety of magnets
- Demonstrate that non-magnetic objects are affected by the strength of the magnet and the distance away from the magnet.
- Identify objects that are good conductors or poor conductors of heat and electricity.
- Explain how matter can change from one state (liquid, solid, gas) to another by heating and cooling.

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**SCIENCE**

**Life Science**

**Organization of Living Things**

- Determine that plants require air, water, light, and a source of energy and building material for growth and repair.
- Determine that animals require air, water, and a source of energy and building material for growth and repair
- Identify individual differences (color, leg length, size, wing size, leaf shape) in organisms of the same kind
- Identify how variations in physical characteristics of individual organisms give them an advantage for survival and reproduction

**Ecosystems**

- Identify organisms as part of a food chain or food web.
- Explain how environmental changes can produce a change in the food web.

**Earth Science**

**Earth in Space and Time**

- Identify the sun and moon as common objects in the sky.
- Compare and contrast the characteristics of the sun, moon and Earth, including relative distances and abilities to support life.
- **Describe the orbit of the Earth around the sun as it defines a year.**
- Explain that the spin of the Earth creates day and night.
- Describe the motion of the moon around the Earth.
- **Explain how the visible shape of the moon follows a predictable cycle which takes approximately one month.**
- Describe the apparent movement of the sun and moon across the sky through day/night and the seasons
- **Explain how fossils provide evidence of the history of the Earth.**
- Compare and contrast life forms found in fossils and organisms that exist today.

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**SOCIAL STUDIES**

**History**

**History of Michigan (Beyond Statehood)**

- Use historical inquiry questions to investigate the development of Michigan's major economic activities.
- Use primary and secondary sources to explain how migration and immigration affected and continue to affect the growth of Michigan.
- Describe how the relationship between the location of natural resources and the location of industries (after 1837) affected and continues to affect the location and growth of Michigan cities.
- Draw upon stories, photos, artifacts, and other primary sources to compare the life of people in towns and cities in Michigan and in the Great Lakes region during a variety of time periods from 1837 to the present.
- Use visual data and informational text or primary accounts to compare a major Michigan economic activity today with that same or a related activity in the past.
- Use a variety of primary and secondary sources to construct a historical narrative about the beginnings of the automobile industry and the labor movement in Michigan
- Use case studies or stories to describe the ideas and actions of individuals involved in the
- Underground Railroad in Michigan and in the Great Lakes region.
- Describe past and current threats to Michigan's natural resources; describe how Michigan worked in the past and continues to work today to protect its natural resources
- Create timelines (using decades after 1930) to sequence and describe important events in Michigan history; annotate with connections to the past and impact on the future.

**Geography**

**The World in Spatial Terms**

- Identify questions geographers ask in examining the United States
- Use cardinal and intermediate directions to describe the relative location of significant places in the United States.
- Identify and describe the characteristics and purposes (e.g., measure distance, determine relative location, classify a region) of a variety of geographic tools and technologies
- Use geographic tools and technologies, stories, songs, and pictures to answer geographic questions about the United States.
- Use maps to describe elevation, climate, and patterns of population density in the United States.

**Places and Regions**

- Describe ways in which the United States can be divided into different regions
- Compare human and physical characteristics of a region to which Michigan belongs

**Human Systems**

- Use a case study or story about migration within or to the United States to identify push and pull factors (why they left, why they came) that influenced the migration
- Describe the impact of immigration to the United States on the cultural development of different places or regions of the United States.

**Environment and Society**

- the positive and negative effects of human activities on the physical environment of the United States.

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**SOCIAL STUDIES**

**Civics and Government**

**Purpose of Government**

- Identify questions political scientists ask in examining the United States
- Explain probable consequences of an absence of government and of rules and laws
- Describe the purposes of government as identified in the Preamble of the Constitution

**Values and Principles of American Democracy**

- Explain how the principles of popular sovereignty, rule of law, checks and balances, separation of powers, and individual rights serve to limit the powers of the federal government as reflected in the Constitution and Bill of Rights.
- Identify situations in which specific rights guaranteed by the Constitution and Bill of Rights are involved

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**Structure and Functions of Government**

- Give examples of ways the Constitution limits the powers of the federal government
- Give examples of powers granted to the federal government (e.g., coining of money, declaring war) and those reserved for the states
- Describe the organizational structure of the federal government in the United States
- Describe how the powers of the federal government are separated among the branches
- Give examples of how the system of checks and balances limits the power of the federal government.
- Describe how the President, members of the Congress, and justices of the Supreme Court come to power
- Explain how the federal government uses taxing and spending to serve the purposes of government.

**Roles of the Citizen in American Democracy**

- Explain responsibilities of citizenship
- Describe the relationship between rights and responsibilities of citizenship.
- Explain why rights have limits.
- Describe ways citizens can work together to promote the values and principles of American democracy

**Economics**

**Market Economy**

- Identify questions economists ask in examining the United States
- Describe some characteristics of a market economy
- Describe how positive and negative incentives influence behavior in a market economy.
- Explain how price affects decisions about purchasing goods and services
- Explain how specialization and division of labor increase productivity
- Explain how competition among buyers results in higher prices and competition among sellers results in lower prices (e.g., supply, demand).
- Demonstrate the circular flow model by engaging in a market simulation, which includes households and businesses and depicts the interactions among them.
- Explain why public goods (e.g., libraries, roads, parks, the Mackinac Bridge) are not privately owned.

**National Economy**

- Explain how changes in the United States economy impact levels of employment and unemployment
- Describe how global competition affects the national economy (e.g., outsourcing of jobs, increased supply of goods, opening new markets, quality controls).

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**RELIGIOUS STUDIES**

**Arabic**

Unit: To School

- Be able to listen to a paragraph in Arabic and answer questions regarding what was heard.
- Practice reading Arabic text and answering comprehension questions
- Learn synonyms of the vocabulary
- Express what he/she “likes”
- Learn how to ask about time
- Explain what he/she has done
- Understand how to use the Islamic greeting in Arabic conversations
- Describe a picture
- Learn how to use detached pronouns practice listening

Unit: Where are you from?

- Be able to explain where you are from
- Be able to describe actions
- Learn the Arabic names for some countries and capitals
- Practice spelling by writing words spoken by teacher
- Be able to listen to a paragraph in Arabic and answer questions regarding what was heard.
- Practice reading Arabic text and answering comprehension questions
- Express him/herself by telling who their family members are
- Introduce “Lam al-shamseya” and “Lam al-Qamariya
- Learn new vocabulary related to the unit topic practice listening

Unit: Where is the key?

- Practice spelling by writing words spoken by teacher
- Be able to listen to a paragraph in Arabic and answer questions regarding what was heard.
- Learn new vocabulary related to the unit topic
- Be able to ask about the location of something
- Learn about interrogative articles and when to use them
- Be able to explain that something is/is not present
- Learn how to use the detached pronouns with some verbs
- Written expression: Be able to describe what you see in a picture
- Introduce present verbs
- practice listening

Unit: The First Day of School

- Recognize the different kinds of rooms in a school
- Be able to describe a room
- Understand the different kinds of words in Arabic: such as, verb, noun, preposition
- Be able to listen to a paragraph in Arabic and answer questions regarding what was heard (listening)
- Practice reading Arabic text and answering comprehension questions
- Learn about detached pronouns
- Learn how to rearrange the letters and make words
- Practice spelling by writing words spoken by teacher
- Describe a picture
- Learn new vocabulary

Unit: Our Street

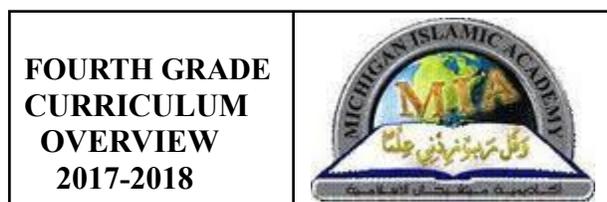
- Explain the places found in a neighborhood: pharmacy, library, grocery store, restaurant, mosque
- Explain the purpose of each place. Ex. Pharmacy: to purchase medicine
- Learn how to use relative pronouns in a sentence
- Be able to listen to a paragraph in Arabic and answer questions regarding what was heard (listening)
- Describe pictures given related to unit topic
- Learn new vocabulary
- Practice spelling by writing words spoken by teacher
- Identify demonstrative pronouns

Unit: Order Game

- Learn & Identify the names of our body parts in Arabic
- Learn how to use order words in Arabic
- Identify about male and female nouns
- Learn new vocabulary related to the unit topic
- Learn about the different types of verbs: past, present, future
- Rearrange letters to form words
- Be able to describe the action occurring in a picture
- Practice spelling by writing words spoken by teacher
- Be able to listen to a paragraph in Arabic and answer questions regarding what was heard. (listening)

Unit: The Twins

- Describe the physical traits of a human
- Learn the antonyms of words in Arabic
- Reinforce “Lam al-shamseya” and “Lam al-Qamariya
- Be able to listen to a paragraph in Arabic and answer questions regarding what was heard. (listening)
- Describe pictures given related to unit topic
- Practice reading Arabic text and answering comprehension questions



## RELIGIOUS STUDIES

- Practice spelling by writing words spoken by teacher
- Introduce “ ظرف مكان ”, or adverbs of places
- Learn new vocabulary
- Differentiate between singular and dual nouns

### Unit: Visiting the sick

- Review interrogative articles
- Learn new vocabulary: synonyms & antonyms
- Review detached pronouns
- Learn expressions used when visiting the sick
- Be able to ask for help in Arabic
- Practice reading Arabic text and answering comprehension questions
- Learn about the tools used by the doctor in the hospital
- Be able to listen to a paragraph in Arabic and answer questions regarding what was heard. (listening)
- Practice spelling by writing words spoken by teacher
- Rearrange sentences in the order of occurrence in the story
- Written expression: Be able to describe what you see in a picture

### Unit: Helping Moms

- Learn how to ask for help
- Written expression: Be able to describe what you see in a picture by using given words
- Be able to listen to a paragraph in Arabic and answer questions regarding what was heard (listening).
- Practice spelling by writing words spoken by teacher
- Practice reading Arabic text and answering comprehension questions
- Learn new vocabulary words
- Understand how and when to use the “ بسملة ”
- Review detached pronouns
- Learn new vocabulary when you need to prepare for lunch
- Understand how to use future verbs
- Describe the occupations of your family members
- Review relative pronouns

- Describe your family: number of people in your family, the ages of your family members, identify eldest and youngest.

### Qur'an

- Recitation with correct Arabic pronunciation
- Meaning of each Ayaat and reason behind revelation
- Applying meaning of Ayaat in everyday lives:
  - Surat Al-Qiyamah
  - Surat Al-Mudatthir
  - Surat A-Muzammil
  - Surat Nooh
  - Surat Al-Maarij
  - Surat Al-Haaqqa

### Islamic Studies

- Foster understanding and love of Islam through stories, poems, illustrations, and activities.
- Understand concepts of Islam and apply teachings in daily lives.
- Topic covered include Prophets (focusing on Prophet Mohammad (PBUH)), fasting, praying, daily lifestyle, Islamic manners, and Islam around the world.