# QUARRY LANE LOWER SCHOOL
## CURRICULUM OVERVIEW

## Mission Statement

The mission of The Quarry Lane School is to create an atmosphere that inspires a lifelong love of learning so that each student can reach their fullest potential--emotionally, socially, academically, and physically--in order to assume responsibility as a future citizen of the world. The guiding philosophy of The Quarry Lane School is "I can make a difference." Within this philosophy, we strive to meet the emotional and educational needs of our students and encourage further social and academic exploration. Our goal is to develop the whole child in a learning environment which promotes self-esteem, encourages natural creativity and provides a solid academic foundation.

## Lower School Academics

Our Lower School academic program is carefully crafted and designed to meet and exceed the national standards, preparing our students for academic success in their Upper School years and beyond. The Lower School curriculum is accelerated to a year above most national public school systems. Creating and maintaining a supportive learning environment that encourages inquiry, creativity, critical thinking, and curiosity, and fully prepares students for the next step of their academic journey is at the heart of our curriculum development at Quarry Lane.

This document provides an overview of our Lower School curriculum across each grade level (Jr. K - Grade 5) for each of our core subjects. Please note, information contained within this guide is subject to change.

# QUARRY LANE LOWER SCHOOL
# ENGLISH OVERVIEW

Strands in English:

1. Speaking and Listening
2. Reading comprehension
3. Writing
4. Language conventions

## SPEAKING AND LISTENING

Listening and speaking are natural, developmental processes that infants and young children are immersed in from their earliest experiences. Almost all children arrive at school with an impressive command of their home and family languages. However, the expectations and approach to language development in school is often very different from the successful learning environment the child has previously experienced. In the transition from home to school, or from one school to another, it is important to acknowledge the language profile of the individual and build on previous learning in ways that are positive and productive.

Oral language encompasses all aspects of listening and speaking skills that are essential for ongoing language development, for learning and for relating to others. Listening (the receptive mode) and speaking (the expressive mode) work together in a transactional process between listeners and speakers. A balanced program will provide meaningful and well-planned opportunities for learners to participate as listeners as well as speakers. Listening involves more than just hearing sounds; it requires active and conscious attention in order to make sense of what is heard. Purposeful talk enables learners to articulate thoughts as they construct and reconstruct meaning to understand the world around them. Oral language involves recognizing and using certain types of language according to the audience and purposes (for example, the language used at home, the language of the classroom, the language of play, the language of inquiry, conversations with peers, giving instructions, interpreting creative texts, the language of fantasy, the language of different generations, of different times and places).

This strand includes:

- Listening and responding
- Speaking and presenting
- Group discussion and interaction
- Drama, roleplay and performance

| JR. K/K | GRADE 1 | GRADE 2 | GRADE 3 | GRADE 4 | GRADE 5 |
|---|---|---|---|---|---|
| **Conceptual understandings**<br>• Spoken words connect us with others.<br>• People listen and speak to share thoughts and feelings.<br>• People ask questions to learn from others. | **Conceptual understandings**<br>• The sounds of language are a symbolic way of representing ideas and objects.<br>• People communicate using different languages.<br>• Everyone has the right to speak and be listened to. | **Conceptual understandings**<br>• Spoken language varies according to the purpose and audience.<br>• Spoken communication is different from written communication it has its own set of rules. | **Conceptual understandings**<br>• People interpret messages according to their unique experiences and ways of understanding.<br>• Listeners identify key ideas in spoken language and synthesize them to create their own understanding. | **Conceptual understandings**<br>• Taking time to reflect on what we hear and say helps us to make informed judgments and form new opinions.<br>• Thinking about the perspective of our audience helps us to communicate more effectively and appropriately.<br>• The grammatical structures of a language enable members of a language community to communicate with each other. | **Conceptual understandings**<br>• Spoken language can be used to persuade and influence people.<br>• Metaphorical language creates strong visual images in our imagination.<br>• People draw on what they already know in order to infer new meaning from what they hear. |

# READING

Reading is a developmental process that involves constructing meaning from text. The process is interactive and involves the reader's purpose for reading, the reader's prior knowledge and experience, and the text itself. It begins to happen when the young learner realizes that print conveys meaning and becomes concerned with trying to make sense of the marks on the page. The most significant contribution parents and teachers can make to success in reading is to provide a captivating range of picture books and other illustrated materials to share with beginning readers. Enthusiasm and curiosity are essential ingredients in promoting the desire to read. Children of all ages need to experience and enjoy a wide variety of interesting, informative, intriguing and creative reading materials. Reading helps us to clarify our ideas, feelings, thoughts and opinions. Literature offers us a means of understanding ourselves and others and has the power to influence and structure thinking. Well-written fiction provides opportunities for learners to imagine themselves in another's situation, reflecting on feelings and actions, and developing empathy. The ability to read and comprehend non-fiction is essential for the process of inquiry. As inquirers, learners need to be able to identify, synthesize and apply useful and relevant information from text. Teachers should provide a balance between fiction and non-fiction, to meet the range of learning needs and interests of their students. Children learn to read by reading. In order to develop lifelong reading habits, learners need to have extended periods of time to read for pleasure, interest, and information, experiencing an extensive range of quality fiction and non-fiction texts. As learners engage with interesting and appealing texts, appropriate to their experiences and developmental phase, they acquire the skills, strategies and conceptual understanding necessary to become competent, motivated, independent readers.

| JR. K/K | GRADE 1 | GRADE 2 | GRADE 3 | GRADE 4 | GRADE 5 |
|---|---|---|---|---|---|
| **Conceptual understandings**<br>• Illustrations convey meaning.<br>• Stories can tell about imagined worlds.<br>• Printed information can inform about the real world.<br>• There are established ways of setting out print and organizing book. | **Conceptual understandings**<br>• Print conveys meaning.<br>• People read for pleasure.<br>• Stories can tell about imagined worlds.<br>• The sounds of spoken language can be represented visually. | **Conceptual understandings**<br>• Written language works differently from spoken language.<br>• Consistent ways of recording words or ideas enable members of a language community to communicate.<br>• People read to learn.<br>• The words we see and hear enable us to create pictures in our minds. | **Conceptual understandings**<br>• Different types of texts serve different purposes.<br>• What we already know enables us to understand what we read.<br>• Applying a range of strategies helps us to read and understand new texts.<br>• Wondering about texts and asking questions helps us understand the meaning.<br>• The structure and organization of written language influences and conveys meaning. | **Conceptual understandings**<br>• Reading and thinking work together to enable us to make meaning.<br>• Checking, rereading and correcting our own reading as we go enables us to read new and more complex texts.<br>• Identifying the main ideas in the text helps us to understand what is important.<br>• Knowing what we aim to achieve helps us to select useful reference material to conduct research. | **Conceptual understandings**<br>• Authors structure stories around significant themes.<br>• Effective stories have a structure, purpose and sequence of events<br>• (plot), that help to make the author's intention clear.<br>• Synthesizing ideas and<br>• information from texts leads to new ideas and understanding.<br>• Reading opens our minds to multiple perspectives and helps us to understand how people think, feel and act. |

# WRITING

Writing is a way of expressing ourselves. It is a personal act that grows and develops with the individual. From the earliest lines and marks of young learners to the expression of mature writers, it allows us to organize and communicate thoughts, ideas and information in a visible and tangible way. Writing is primarily concerned with communicating meaning and intention. When children are encouraged to express themselves and reveal their own "voice", writing is a genuine expression of the individual. The quality of expression lies in the authenticity of the message and the desire to communicate. If the writer has shared his or her message in such a way that others can appreciate it, the writer's intention has been achieved. Over time, writing involves developing a variety of structures, strategies and literary techniques (spelling, grammar, plot, character, punctuation, voice) and applying them with increasing skill and effectiveness. However, the writer's ability to communicate his or her intention and share meaning takes precedence over accuracy and the application of skills. Accuracy and skills grow out of the process of producing meaningful communication. Children learn to write by writing. Acquiring a set of isolated skills will not turn them into writers. It is only in the process of sharing their ideas in written form that skills are developed, applied and refined to produce increasingly effective written communication.

| JR. K/K | GRADE 1 | GRADE 2 | GRADE 3 | GRADE 4 | GRADE 5 |
|---|---|---|---|---|---|
| **Conceptual understandings**<br>• Everyone can express themselves in writing.<br>• Talking about our stories and pictures helps other people to understand and enjoy them. | **Conceptual understandings**<br>• Writing conveys meaning.<br>• People write to tell about their experiences, ideas and feelings.<br>• Everyone can express themselves in writing.<br>• The sounds of spoken language can be represented visually (letters, symbols, characters). | **Conceptual understandings**<br>• People write to communicate.<br>• Consistent ways of recording words or ideas enable members of a language community to understand each other's writing.<br>• Written language works differently from spoken language.<br>• Thinking about storybook characters and people in real life helps us to develop characters in our own stories.<br>• When writing, the words we choose and how we choose to use them enable us to share our imaginings and ideas.<br>. | **Conceptual understandings**<br>• We write in different ways for different purposes.<br>• The structure of different types of texts includes identifiable features.<br>• Applying a range of strategies helps us to express ourselves so that others can enjoy our writing.<br>. | **Conceptual understandings**<br>• Writing and thinking work together to enable us to express ideas and convey meaning.<br>• Asking questions of ourselves and others helps to make our writing more focused and purposeful.<br>• The way we structure and organize our writing helps others to understand and appreciate it.<br>• Rereading and editing our own writing enables us to express what we want to say more clearly. | **Conceptual understandings**<br>• Stories that people want to read are built around themes to which they can make connections.<br>• Effective stories have a purpose and structure that help to make the author's intention clear.<br>• Synthesizing ideas enables us to build on what we know, reflect on different perspectives, and express new ideas.<br>• Knowing what we aim to achieve helps us to plan and develop different forms of writing.<br>• Through the process of planning, drafting, editing and revising, our writing improves over time.<br>. |

# LANGUAGE CONVENTIONS AND GRADE LEVEL BENCHMARKS (REFERENCED FROM COMMON CORE)

The following standards for grades K–5 offer a focus for instruction each year to help ensure that students gain adequate mastery of a range of skills and applications. Students advancing through the grades are expected to meet each year's grade-specific standards and retain or further develop skills and understandings mastered in preceding grades

## ELA EXPECTATIONS FOR THE FALL

| JR. K | KINDERGARTEN | GRADE 1 | GRADE 2 | GRADE 3 | GRADE 4 | GRADE 5 |
|---|---|---|---|---|---|---|
| **Jr. K**<br><br>Entering students can spell their names, know some of their letters and sounds, and hold a pencil properly. (Fry Words: The First Hundred List 1.)<br><br>**Kindergarten**<br><br>Entering students know their letters and sounds, read sight words (Fry Words: The First Hundred List 2, 3, and 4 + The Second Hundred List 1 and 2), and hold a pencil properly | **Kindergarten**<br><br>Entering students know their letters and sounds, read sight words (Fry Words: The First Hundred List 2, 3, and 4 + The Second Hundred List 1 and 2), and hold a pencil properly.<br><br>**1st Grade**<br><br>Entering students write in complete sentences and read at a moderate pace for fluency and understanding. (Fry Words: The Second Hundred List 3 and 4 + The Third Hundred List 1, 2, and 3.) | **2nd Grade**<br><br>Entering students can retell a story with some detail (2-3 facts or main ideas from the text). They spell first grade sight words correctly and write using transition words. They use patterns to decode words and/or sound out unknown words. They read a variety of just right books from numerous genres/subgenres. (Fry Words: The Third Hundred List 4 + The Fourth Hundred List 1, 2, 3, and 4.) . | **3rd Grade**<br><br>Entering students stay on a topic when writing, have sight word spelling, include details in their writing, and can anticipate what may happen next when reading. (Fry Words: The Fifth Hundred and The Sixth Hundred—all four lists of each.) . | **4th Grade**<br><br>Entering students know how to develop their characters in writing, have good retelling and summarizing skills, and study mentor texts to elevate their own writing. They can read for at least 20 minutes independently and write for at least 30 minutes independently. (Fry Words: The Seventh Hundred and The Eighth Hundred—all four lists on each.) . | **5th Grade**<br><br>Entering students have reading and writing stamina (30+minutes), can elaborate, and know the difference between and what to do when revising and editing their work, can focus on the genre at hand, can summarize a text, and can think beyond the text. (Fry Words: The Ninth Hundred and The Tenth Hundred —all four lists on each.) . | **6th Grade**<br><br>Entering students know how to annotate a text, can write a thesis statement and provide claims, and know how to effectively integrate quotes into their writing. |

References:
IB PYP English Scope and Sequence
ELA Common Core State Standards

# QUARRY LANE LOWER SCHOOL
# MATH OVERVIEW

**Grade-wise scaffolding of Strands and Related Concepts**

**Strands in Math:**

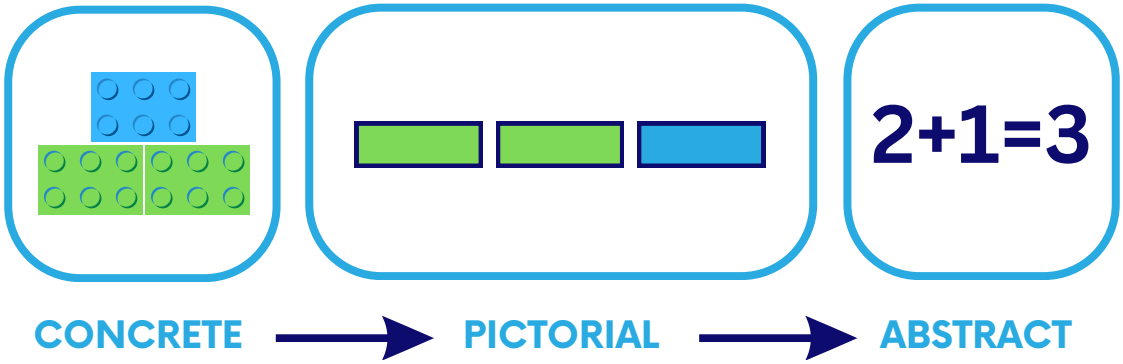
1. Number and Operations
2. Algebra and Functions
3. Geometry and Measurement
4. Statistics and Probability

It is important to teach math in ways that relate to real-life situations, so students can see how useful it is in the world. This way, they learn math by doing and experiencing it.

The Singapore Math Program provides a context for our accelerated Lower School Math curriculum through Grade Four. From the solid foundation secured through Singapore Math, students in Grade Five are successfully prepared for the rigor of our two-year Pre-Algebra Curriculum that is extended through Grade Six.

**Singapore Math Program**

A key principle for the Singapore Math Program is the progression from concrete to pictorial to abstract concepts. This approach helps students build a strong foundation in mathematics by gradually transitioning from hands-on experiences to more abstract mathematical thinking.




**Concrete:** In the concrete stage, students work with physical objects, manipulatives, or real-world situations to gain a deep understanding of mathematical concepts. They use items like counting blocks, coins, geometric shapes, or even everyday objects to represent mathematical ideas.

**Pictorial:** In this stage, students represent mathematical ideas using pictures, diagrams, and other visual aids. These visuals help bridge the gap between concrete and abstract thinking.

**Abstract:** In the abstract stage, students work with symbols, equations, and mathematical notation to solve problems. This is where traditional mathematical notation and algorithms become the primary tools for solving problems, such as using mathematical symbols for addition, subtraction, multiplication, and division.

At our school, there is increased emphasis using real-life examples to solve math problems and explore a variety of strategies for multiple solutions, while also assuring mastery with math facts to support computational fluency. There is a decreased emphasis on one answer one method and use of worksheets.

The QLS math curriculum is mapped under different strands.

| NUMBER AND OPERATIONS | JR. K | K | GRADE 1 | GRADE 2 | GRADE 3 | GRADE 4 |
|---|---|---|---|---|---|---|
| Our number system serves as a way to talk about amounts and how they relate to each other. In this system, a digit's value depends on where it is placed within a base system. Numbers help us understand data, make choices, and tackle problems. For instance, addition, subtraction, multiplication, and division are connected and help us work with information to find solutions. The level of accuracy required in calculations depends on how we intend to use the final result. | Count up to 100 | Order numbers | Numbers to 1,000 | Numbers to 10,000 | Numbers to one million | Whole numbers<br><br>Decimal to thousandths |
| | Count by fives and tens | Add or subtract tens | | | Other ways to add and subtract | Comparing and rounding decimals |
| | Count and match 1-20 | Compare numbers to 100 | | | | |
| | Compare and decompose. What is the other part? | Number bonds up to 10 | | Estimating sums and differences | Multiples and factors | |
| | Add to 10 | Addition facts to 100 | Addition - mental math: adding ones, tens, adding 97, 98, 99 | Mental addition and subtraction | Mental math for multiplication<br><br>Adding fractions<br><br>Addition of decimals | Adding unlike fractions<br><br>Adding mixed numbers<br><br>Adding decimals to thousandths |
| | Subtract within 10 | Subtraction within 100 | Subtraction - mental math, Subtracting ones, tens Subtracting 97, 98, 99 | | Mental math for division<br><br>Subtracting fractions<br><br>Subtraction of decimals | Subtracting unlike fractions<br><br>Subtracting mixed numbers<br><br>Subtracting decimals |
| | | Fractions - halves and fourths | Halves and fourths, unit fractions | Fractions - compare like fractions<br><br>Finding equivalent fractions<br><br>Adding & subtracting fractions<br><br>Comparing fractions | Mental math for multiplication<br><br>Adding fractions<br><br>Addition of decimals | Adding unlike fractions<br><br>Adding mixed numbers<br><br>Adding decimals to thousandths |

| | | | | | | |
|---|---|---|---|---|---|---|
| **NUMBER AND OPERATIONS** | | | **Multiplication of 2, 3, 5, 10** | **Multiplying by 0 & 1**<br><br>**Multiplying 3-digit numbers with regrouping**<br><br>**Multiplying with 6, 7, 8, & 9** | **Multiplying by 2-digit numbers**<br><br>**Multiplying decimals by whole numbers**<br><br>**Multiplying a fraction and whole number** | **Multiplying by 2-digit numbers**<br><br>**Multiplying fractions by whole numbers, whole numbers by fractions, fractions by unit fraction** |
| | | | **Division by 2, 3, 5, 10** | **Division with reminders**<br><br>**Dividing a 3-digit number and quotient is 2 digits** | **Dividing 4-digit numbers**<br><br>**Dividing decimals by whole number**<br><br>**Fractions and division** | **Divide a 4-digit number by a 2-digit number**<br><br>**Dividing: Unit fraction by whole number, fraction by whole number, whole number unit by fraction**<br><br>**Dividing by decimals** |
| | | | | | **Decimals: Tenths & hundrenths** | |

| **ALGEBRA AND FUNCTIONS**<br><br>Algebra involves the study of equations, expressions, and relationships between variables. It's a powerful tool for modeling real-world situations and solving complex problems. Algebra helps us figure out unknown numbers and how they work together in equations. Functions are patterns or rules that transform into different numbers, and they help us understand how things relate to each other. Recognizing patterns is the starting point for grasping how math relates to our everyday life. Patterns with repeated elements can be recognized and explained using general rules known as "functions." This lays the groundwork for studying algebra in the future. | **JR. K** | **K** | **GRADE 1** | **GRADE 2** | **GRADE 3** | **GRADE 4** |
|---|---|---|---|---|---|---|
| | **Match, sort & classify** | | | | | **Ratios Equivalent ratios** |
| | | | | | | **Finding the rate** |
| | **Patterns of movement** | | **Patterns in shapes** | | **Number patterns** | **Symmetrical figures and patterns** |
| | **Ordinal numbers** | **Positions using ordinal numbers** | | **Comparing and ordering numbers** | **Comparing and ordering fractions** | **Writing & evaluating expressions**<br><br>**Order of operations** |

## GEOMETRY AND MEASUREMENT

Geometry is all about shapes and sizes. It helps us understand different shapes and their unique properties. Shapes can help us describe the areas, routes, and borders of the natural world. When we grasp how shapes relate to each other, it helps us make sense of and admire our flat (2D) and solid (3D) surroundings. Measurement is like using special tools to find out how long or big things are. We use rulers for length, scales for weight, and more to measure stuff.

| JR. K | K | GRADE 1 | GRADE 2 | GRADE 3 | GRADE 4 |
|---|---|---|---|---|---|
| Compare objects - height, length, capacity and quantity | Grouping shapes | Straight and curved sides<br><br>Polygons<br><br>Semi-circles, quarter-circles | Circles, angles, right angles, triangles, properties of triangles and quadrilaterals | | Angles<br><br>Adding and subtracting angles<br><br>Drawing angles and lines - |
| Compare sets | Comparing lengths | Cm, m, inches, feet - using rulers | Subtracting from meters and km | Metric units of length | Fractions and measurement conversions |
| Shapes and solids | Solid and flat shapes | Weight - g, kg, lb<br><br>Capacity | Liters, ml, kg, g | Metric units of weight and capacity | |
| | | | | | Lines and shapes - perpendicular, parallel, lines of symmetry |
| | | | | | Properties of cuboids<br><br>Volume of solid figures<br><br>Classify quadrilaterals |
| Compare numbers within 10 | Compare numbers within 100 | | | | |
| Time - day and night | | | Area perimeter | Area and perimeter of rectangles and composite figures | Area of triangles<br><br>Classifying triangles<br><br>Interior and exterior angles in a triangle |
| Telling time to the hour | Time to the hour, half hour, 5 minutes | Telling time, time intervals, AM and PM | Calculating time | | |
| Money | Bills, shopping, counting money | Making $1, dollars and cents, comparing, adding and subtracting money | Making $10<br><br>Adding and subtracting money | | |

| STATISTICS AND PROBABILITY | JR. K | K | GRADE 1 | GRADE 2 | GRADE 3 |
|---|---|---|---|---|---|
| Data can be collected, organized, represented, and summarized in a variety of ways to highlight similarities, differences and trends; the chosen format should illustrate the information without bias or distortion. Probability can be expressed qualitatively by using terms such as "unlikely", "certain" or "impossible". It can be expressed quantitatively on a numerical scale. | Compare sets - same and different<br><br>Match objects - more of fewer<br><br>Comparing numbers within 10 | Picture graphs<br><br>Subtraction as comparison | Picture graphs<br><br>Bar graphs | Bar graphs and tables<br><br>Picture graphs and bar graphs | Line graphs<br><br>Drawing line graphs<br><br>Line plots<br><br>Venn diagram |

## Quarry Lane Pre-Algebra Program (5th-6th Grade)

Designed to build a solid mathematical framework for students, this comprehensive 2-year program covers essential concepts such as integers, fractions, decimals, and basic equations. With a focus on problem-solving and critical thinking, students will develop the skills needed to excel in high school math courses. Whether you're new to algebraic concepts or reinforcing your understanding, our Pre-Algebra course provides the perfect roadmap for mathematical track in the Upper School.

### Number and Operations

Operations with Integers: Integers and absolute value, adding integers, subtracting integers, multiplying integers, dividing integers, fractions and decimals, rational numbers, arithmetic operations on like and unlike fractions, multiplying rational numbers, distributive property, ratios, unit rates, fractions and percents, percent proportion, using percent equations, percent of change, simple and compound interest. Rate of change, constant rate of change and direct variation, powers and exponents, prime factorization, negative exponents, scientific notation, squares and square roots, the real number system.

### Algebra and Functions

Simplifying algebraic expressions, solving equations by adding or subtracting, solving equations by multiplying or dividing, solving two-step equations, solving equations with variables on each side, solving inequalities, proportional and nonproportional relationships, solving proportions, inverse proportions.

Functions, sequences and equations, representing linear functions, writing linear equations, systems of equations, multiplying and dividing monomials, powers of monomials, linear and nonlinear functions, quadratic functions, cubic and exponential functions, polynomials, adding, subtracting polynomials, multiply a binomial by a monomial, multiply two binomials, dividing a polynomial by a monomial, using GCF to factor polynomials, factoring trinomials.

### Geometry and Measurement

Graphing in four quadrants, translations and reflections on coordinate plane, perimeter and area, converting rates and measurements, scale drawings and models, similar figures, dilations, similarity and transformations, indirect measurement, circle graphs.

Slope, slope intercept form, triangles, the Pythagorean theorem, distance formula, special right triangles, angle and line relationships, congruent triangles, rotations, quadrilaterals, polygons, area of parallelograms, triangles, and trapezoids, circles and circumference, area of circles, area of composite figures, three dimensional figures, volume of prisms, volume of cylinders, volume of pyramids, cones and spheres, surface area of prisms, surface area of cylinders, pyramids and cones, similar solids, measures of central tendency.

### Statistics and Probability

Prediction equations, stem and leaf plots, measures of variation, box and whisker plots, histograms, theoretical and experimental probability, using sampling to predict, counting outcomes, permutations and combinations, probability of compound events.

# QUARRY LANE LOWER SCHOOL
# SCIENCE OVERVIEW

### Grade-wise scaffolding of Strands and Related Concepts

Strands: In this document, teachers can view how each strand is addressed grade-wise. Teachers are encouraged to refer to the Next Generation Science Standards to access grade-specific standards.
Concepts: Teachers will address only those concepts that are applicable to their topics. It is not expected that all concepts will be covered in each grade. However, by the end of 5th grade teachers will have collectively touched upon each of the related concepts.
Skills: All the science skills are developed at each grade level.

| | JR. K/K | GRADE 1 | GRADE 2 | GRADE 3 | GRADE 4 | GRADE 5 |
|---|---|---|---|---|---|---|
| **PHYSICAL SCIENCE**<br><br>**Concepts** such as changes of state, chemical and physical changes, conduction and convection, density, gases, liquids, properties and uses of materials, solids, structures, sustainability, energy, efficiency, equilibrium, forms of energy (electricity, heat, kinetic, light, potential, sound), magnetism, mechanics, physics, pollution, power, technological advances, transformation of energy will be addressed. | Forces and Interactions: Pushes and Pulls | Waves: Light and Sound | Structure and Properties of Matter | Forces and Interactions (Balanced and unbalanced forces, electric and magnetic interactions) | Energy<br><br>Waves Waves and Information | Structure and Properties of Matter<br><br>Specifically: heat transfer related to changes in state from solid to liquid to gas; a strong focus on mixtures and solutions |
| **LIFE SCIENCE**<br><br>**Concepts** such as adaptation, animals, biodiversity, biology, classification, conservation, ecosystems, evolution, genetics, growth, habitat, homeostasis, organism, plants, systems (digestive, nervous, reproductive, respiratory) will be addressed. | Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment | Structure, Function, and Information Processing in Plants/Animals | Interdependent Relationships in Ecosystem (Elements required for plants and animals to sustain and grow | Interdependent Relationships in Ecosystems Inheritance and Variation of Traits: Life Cycles and Traits | Structure, Function, and Information Processing in human systems | Matter and Energy in Organisms and Ecosystems<br><br>Specifically: the flow of energy through ecosystems |

| | | | | | | |
|---|---|---|---|---|---|---|
| **EARTH SCIENCE**<br><br>**Concepts** such as atmosphere, climate, erosion, evidence, geography, geology, gravity, renewable and non-renewable energy sources, resources, seasons, space, sustainability, systems (solar, water cycle, weather), tectonic plate movement, theory of origin will be addressed. | **Weather and Climate (effect of sunlight on the Earth)** | **Space Systems: Patterns and Cycles (observations of the sun, moon, and star patterns)** | **Earth's Systems: Processes that Shape the Earth (volcanic explosions, earthquakes, effects of wind and water, types of land and water bodies)** | **Weather and Climate in different regions of the world** | **Earth's Systems: Processes that Shape the Earth (patterns in rock formations and fossils in rock layer and its causes)** | **Earth's Systems (geosphere, biosphere, hydrosphere, and/or atmosphere)**<br><br>**Specifically: a focus on our atmosphere, layers of, and meteorology**<br><br>**Space Systems: Stars and the Solar System**<br><br>**Specifically: constellations, relationships between and movements of the Earth, the Moon, and the Sun** |
| **EARTH SCIENCE**<br><br>**Concepts** such as atmosphere, climate, erosion, evidence, geography, geology, gravity, renewable and non-renewable energy sources, resources, seasons, space, sustainability, systems (solar, water cycle, weather), tectonic plate movement, theory of origin will be addressed. | **Weather and Climate (effect of sunlight on the Earth)** | **Space Systems: Patterns and Cycles (observations of the sun, moon, and star patterns)** | **Earth's Systems: Processes that Shape the Earth (volcanic explosions, earthquakes, effects of wind and water, types of land and water bodies)** | **Weather and Climate in different regions of the world** | **Earth's Systems: Processes that Shape the Earth (patterns in rock formations and fossils in rock layer and its causes)** | **Earth's Systems (geosphere, biosphere, hydrosphere, and/or atmosphere)**<br><br>**Specifically: a focus on our atmosphere, layers of, and meteorology**<br><br>**Space Systems: Stars and the Solar System**<br><br>**Specifically: constellations, relationships between and movements of the Earth, the Moon, and the Sun** |

| SCIENCE SKILLS | SKILLS FOR GRADES JK-2 | SKILLS FOR GRADES 3-5 |
|---|---|---|
| | Ask questions, make observations, and gather information.<br><br>Define a simple problem that can be solved through the development of a new or improved object or tool.<br><br>Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.<br><br>Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs. | Use a variety of instruments and tools to measure data accurately. Examples include materials, time, or cost.<br><br>Use scientific vocabulary to explain their observations and experiences.<br><br>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.<br><br>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. |

| SCIENCE SKILLS FOR ALL GRADE LEVELS | |
|---|---|
| | Make and test predictions.<br><br>Interpret and evaluate data gathered to draw conclusions.<br><br>Use scientific models and applications of these models (including their limitations). Examples include planets, cells, landforms, weather systems, etc. |

# QUARRY LANE LOWER SCHOOL
# SOCIAL STUDIES OVERVIEW

### Grade-wise scaffolding of Strands and Related Concepts

Multiple Perspectives: Our teachers adopt an honest and authentic, unbiased approach to history, diversity and cultural influences. To achieve this, multiple perspectives are built into the Social Studies curriculum via a set of open-ended questions. These questions are used by the teachers to promote inquiry, discussions, and debates to develop an understanding of diverse perspectives. The aim of social studies within the LS is to promote intercultural understanding and respect for individuals and their values and traditions. We encourage students to "understand that other people, with their differences, can also be right." Therefore, there is a strong emphasis on the reduction of prejudice and discrimination within the classroom, the school, the community, and the world. Multiple perspectives are woven into every unit which provides opportunities for students to look at and think about human behavior and activity realistically, objectively, and with sensitivity. Sample questions include:

- What motivated individuals or groups to act the way they did?
- In what ways have conflict and its resolution shaped society?
- What societal factors cause growth, migration or resource management?
- What kinds of beliefs, values and attitudes encourage connections with other peoples?
- Might this opinion be biased? Why?
- Why do people have different points of view about preserving the environment?
- What might my lifestyle be if I lived in another culture?
- What does it mean to be a world citizen?
- Who had/has the power? And what could be the reasons?

| | JR. K | KINDERGARTEN | GRADE 1 | GRADE 2 | GRADE 3 | GRADE 4 | GRADE 5 |
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| **HISTORY**<br><br>**Concepts** such as chronology, civilizations, conflict, discovery, exploration, history, innovation, migration, progress, revolution will be addressed. | Holidays, calendar, lifestyles of people then and now.<br><br>Study of figures in American history – MLK, Rosa Parks, Benjamin Franklin.<br><br>Explorers – Daniel Boone<br><br>Identify American presidents on coins. | Temporal order using a calendar, placing days, weeks, and months in proper order.<br><br>Characteristics of family traditions and family history. Different ways in which family history can be documented.<br><br>Relative locations of objects using the terms near/far, left/right.<br><br>National monuments. | Symbols, icons, and traditions that provide continuity and a sense of community across time.<br><br>Compare and contrast everyday life in different historical times. | Biographies - of leaders and their contributions.<br><br>Traditions and holidays around the world including a wide variety of cultures.<br><br>How inventions have shaped our lives. | A sequence of local historical events and how each period of settlement left its mark on the land.<br><br>Study of Kumeyaay and other African American visionaries. | SPeople of California from the pre-Columbian societies to the Spanish mission and Mexican rancho periods.<br><br>Understand the relationships between missionaries, soldiers, and native people.<br><br>MLK's impact on society.<br><br>WW2 | Conflict between the Indian nations and the new settlers.<br><br>Colonial era, Southern colonies and Colonization.<br><br>American Revolution and its consequences.<br><br>European explorers and settlements.<br><br>Women's History project. |

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| **GEOGRAPHY**<br><br>**Concepts** such as amenities, borders (natural, social and political), dependence, geography, impact, landscape, locality, ownership, population, regions, settlements, conservation, consumption, distribution, ecology, energy, interdependence, pollution, poverty, sustainability, wealth will be addressed. | Identify pictures and maps.<br><br>Understand some characteristics of a neighborhood.<br><br>Identify animal needs & habitats. Preservation of endangered animals | Awareness of habitats and environmental changes.<br><br>Review of maps, models, resources, and graphing with the ocean environment.<br><br>Sources (such as parents and grandparents) to identify reasons for documenting personal history. | Locating oceans and continents on a world map.<br><br>Students compare the absolute and relative locations of places and people and describe their physical and/or human characteristics Understanding human's impact on the environment. | Landforms - major rivers, great lakes, and mountain ranges in the US.<br><br>Map skills<br><br>Explore scientific and technological developments that help people understand the different landscapes of the earth.<br><br>Natural resources<br><br>California geography and indigenous people | The use of maps, tables, graphs, photographs, and charts to organize information about people, places, and environments in a spatial context.<br><br>Use of NE, SE, how far is ….. from…… etc. | The physical and geographic features that define places and regions in California.<br><br>Western region states with corresponding capital cities.<br><br>The variety of maps and overlander terrain.<br><br>Natural disasters | The major pre-Columbian settlements, the American Indians of the Pacific Northwest, the nomadic nations of the Great Plains, and the woodland peoples east of the Mississippi River.<br><br>Early explorers and the early explorations of the Americas.<br><br>50 states and the names of their capitals.<br><br>Europe, Central America and Asia: major countries and capitals |
| **ECONOMICS**<br><br>**Concepts** such as communications, conflict, cooperation, education, employment, freedom, governments, justice, legislation, production, transportation will be addressed. | Where we work and live.<br><br>Describe different kinds of jobs.<br><br>Identify some signs and different kinds of transportation. | School community and its jobs.<br><br>Environment and conservation of limited resources. | Basic economic concepts and the role of individual choice in a free-market economy. | Compare and contrast urban, suburban, and rural land uses.<br><br>Basic economic concepts such as: import, export, business, budgeting and supply/deman | Students demonstrate basic economic reasoning skills and an understanding of the economy of the local region.<br><br>Impact of rivers, lakes and mountains in job opportunities, travel, and economics. | The economic, social, and political life in California from the establishment of the Republic, the Mexican-American War, the Gold Rush, and statehood.<br><br>California as an agricultural and industrial power and tracing its transformation. Rancho Economy<br><br>Land during creation of TR | Colonization, immigration, and settlement from 1789 to the mid-1800s, with emphasis on the role of economic incentives, effects of the physical and political geography, and transportation systems.<br><br>Colonization of the N.E., Middle, Southern Colonies, life there, and the economy. |

| CIVICS | | | | |
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| **Concepts** such as artifacts, authority, citizenship, communication, conflict, diversity, family, identity, networks, prejudice, religion, rights, roles, traditions will be addressed. | Learning to work together.<br><br>Understanding the importance of friends, sharing, and rules.<br><br>American flag- recognize colors and symbols. | What it means to be a good citizen – follow rules, signs, work together.<br><br>National and State symbols – flags, bald eagles, Statue of Liberty etc. | Students describe the rights and individual responsibilities of citizenship.<br><br>The varied backgrounds of American citizens and their countries of origin. | Communities, roles, and responsibilities in a community.<br><br>A world of many people – study of diversity, cultures.<br><br>Responsibilities of each type of government (local, state, and nation). |

## SOCIAL STUDIES SKILLS

**SKILLS:**

**General Historical Thinking Skills:**

- Map, visualize, and characterize distinct periods in history
- Understand the role of context in historical causation and consequences.
- Analyze material culture and visual sources (maps, art, political cartoons) to understand their historical significance.
- Develop awareness of multiple perspectives and cultures.
- Demonstrate awareness and proficiency in complex analysis of causes and effects of historical phenomena i.e. economic, political, social, and geographic factors.
- Making connections - Using historical reasoning processes (comparison, causation, continuity and change), analyze patterns and connections between and among historical developments and processes.
- Develop an effective argument.

**Research Skills:**

- Evaluate the reliability of different written and online sources.
- Conceive and manage a project to completion.
- Assess the accuracy, validity, and possible bias of sources. (4th and 5th grade)
- Develop notetaking skills from written sources and oral presentations. (4th and 5th grade)
- Make informed conclusions using information from a variety of media sources. (5th grade)