

# Curriculum Guide



**Giddens School**

*inspiring children to better their world*

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t Giddens, we believe it is our responsibility to provide a personalized program, which recognizes and values the unique character of each child. Students are supported and validated as they pursue their educational paths. We believe that when learning is meaningful to a child, excitement is sparked and a love of learning grows. A student graduating from Giddens is academically prepared not only in each skill and concept set at each grade level, but with the awareness, drive and determination to affect positive change throughout their lives.

At Giddens we feel it imperative to cultivate a diverse school environment where children are prepared for the 21st century they are entering as adults, where diversity is valued as a reality, students are centered, and are taught the communication and critical thinking skills needed to navigate and participate in a diverse environment. Empirical data and research, coupled with our formal and informal collection of student data clearly shows that our unique approach of creating an authentically diverse school community bolsters not only students' socio-emotional skills, but also their academic preparedness.

This curriculum guide is designed to provide in depth information about our progressive, intentional, and aligned curriculum at each grade level. You will find that we focus on the details in addition to the big picture, and that Giddens Teachers create highly engaging, project-based units which are well balanced with the necessary skills every child needs to be successful and confident in their own educational journey. We hope you find this guide useful.

Sincerely,



Robert Kogane

Head of School



## Giddens School Curriculum Commitments

### Our Commitment to Small Class Size

As research reliably asserts, elementary age children benefit most from small class size and strong instruction more than any other factors. At Giddens, our Preschool Classrooms have two teachers with classes no larger than 15 students. In Kindergarten and First Grade Classrooms, we never have more than 15 students in a class and Second through Fifth Grade never exceeds (and is usually less than) 18 students in a class.

### Instructional Coaches and Teaching Support

In addition, we have full time Instructional Coaches for each grade level in Math and Reading to further reduce class size each day and enhance one-on-one conferring with students during our studies of reading and mathematics. Our experienced Math and Reading Specialists coach and plan with classroom teachers, personalize instruction in the classroom and reflect on student work each week as part of our ongoing professional development.

### Multi-Grade Classrooms

At Giddens, our Primary Classrooms are grouped into multi-grade bands so that we may attend to each child's strengths or any challenges needing to be addressed without pushing students forward too soon, or holding them back from challenges they seek. This method of configuration, called "looping" means that teachers have the opportunity to work with students for two years instead of one. This model benefits each student in different ways, but always means that students have the opportunity to learn from others, lead, and create deep relationships with the classroom teacher.

Teachers alternate curricular projects so that children never repeat a content unit or cross-curricular investigation. As you read, keep in mind that although we have multi-grade classrooms, our standards exist for each child at their grade level.

Our classrooms are grouped based on developmental ages which are most alike, thereby providing the greatest harmony. As the children get older, we add slightly to the numbers in order to provide greater choice in social and learning groups. We group our grade levels as follows:

- ★ Kindergarten and First Grade
- ★ Second and Third Grade
- ★ Fourth and Fifth Grade

### Integrated Learning

At Giddens, we have designated times throughout the year when our school-wide themes of study serve as lenses through which our students learn about Social Studies, Science, and Art. As is the case in all of our academic areas, we adhere to the grade level Common Core Standards for Science and Social Studies each year in addition to teacher collaboration with our Environmental Educator for work in the garden. Within each of these Integrated Learning sessions, students also focus on their artistic relationships to content learned as a further means of creating connections and meaning. At Giddens, our commitment to our school-wide theme necessitates curriculum descriptions which change from year to year, though the skill sets and concepts learned remain constant. Below, you will read the curricular units covered throughout each class for 2010-2011 school year at which time our school theme was Rhythm and Motion.

## Preschool and Pre Kindergarten

Children in the Giddens Preschool experience the wonder of others and the love of exploration as they begin to have a greater understanding of themselves. Our Preschool classes are driven by content which emerges from our school-wide theme, the children's interests, needs, and curiosity! Giddens teachers are attuned to all aspects of each child: social emotional growth, gross and fine motor skills, identity of self, and the ability to make connections with the world. All of our Preschool children receive specialist time in Music, Spanish, Library, P.E. and Garden in addition to all of the units covered in class.

### Pre-Kindergarten

Our Pre-Kindergarten children are a wonderfully happy, curious and social group of students! They inhabit that lovely space between the world of Preschool and Kindergarten, and so have specific needs and goals that differ from each other. Our Pre-Kindergarten classes provide a strong year for children to learn about some of the higher expectations that await them in Kindergarten academically, while providing them with the time that they need to adapt socially and emotionally to a fuller day. Pre Kindergarten Teachers prepare emergent and intentional lessons which involve small group reading and writing times, math instruction, handwriting, and science. In addition, all students receive Music, Spanish, P.E., Library, P.E., Garden and, of course, play time. We believe that the combination of intentional learning times and free time to digest and run together forms the balanced foundation for our Pre-Kindergarten students and prepares them for Kindergarten.

## Primary

Giddens Teachers in grades K-5 provide nurturing environments and powerful learning opportunities through consistent and creative instruction in reading, writing, math, and integrated learning. In addition, all students learn in Spanish, Music, PE, Library and the Garden twice a week.

Our commitment to research-based instruction and materials, alignment, and collaboration affords students and staff a strong learning community which is ever growing! Students are taught to think, how to explain their thinking to others, and how to integrate others' ideas in solving problems.

Please continue to read through this guide to learn about specific curricular expectations, skills and concepts.



# Kindergarten

## Writing

Kindergarten writing is focused on helping students express their thoughts on paper. This begins with crafting stories verbally and drawing images, progresses into labeling these images with single sounds determined by listening closely to words, and develops further into recording words. The Writing Workshop program provides a structure for this process. In addition, writing skills are addressed many times a day during group interactive writing, independent journal writing and various emergent opportunities. Students are encouraged to stretch words, writing a letter for each sound they hear. Kindergarten students also work to solidify their recognition of letters and their understanding of letter/sound relationships. Kindergarteners write for a variety of purposes including event recording, communication with others and letter formation.

### 1. Concepts of Print

- ★ Knows that print has meaning
- ★ Knows that written words are written the same way
- ★ Places words in lines, starting left to right and top to bottom

### 2. Writing process

- ★ Writes a letter for each sound heard in a word
- ★ Adds or deletes information in writing and drawing to clarify
- ★ Illustrates own writing to further communication
- ★ Present ideas in a logical sequence
- ★ Writes texts that they can reread or retell

### 3. The student writes in a variety of forms for different audiences and purposes

- ★ Forms written responses to literature
- ★ Writes in a variety of genres

### 4. The student writes clearly and effectively

- ★ Forms upper and lowercase letters efficiently in manuscript print
- ★ Uses spaces between words

### 5. The student analyzes and evaluates the effectiveness of written work.

- ★ Shares writing
- ★ Participates in discussions that evaluate writing

## Reading

In Kindergarten the students are immersed in a balanced reading program incorporating instruction in phonics, whole language and phonemic awareness. This includes opportunities to engage with text independently, with a buddy, in a small group and in whole group settings. Students also participate in active exploration with letter/sound relationships, word solving strategies and environmental print. Learning is targeted by placing students in flexible, fluid groups allowing the diverse needs of Kindergarten readers to be addressed. The range of reading success in Kindergarten is quite wide, with some students solidifying their knowledge of early print decoding while others are integrating their decoding and recognition skills to decipher more complex texts. The concepts and skills that students are working to meet in Kindergarten reflect this range.



## 1. The student understands and uses early literacy skills and strategies

- ★ Identifies upper and lowercase letters by name
- ★ Identifies the sounds associated with letters
- ★ Is able to recognize simple common sight words in isolation
- ★ Is able to recognize high frequency words in the environment
- ★ Can sort written words and pictures into categories using a variety of criteria (initial sound, ending sound, rhyme)
- ★ Tracks from left to right when listening to and following text
- ★ Matches one spoken word with one printed word
- ★ Uses phonemic knowledge to decipher new words

## 2. The student understands the meaning of what is read

- ★ Uses context to construct meaning from new vocabulary
- ★ Retells a story in order
- ★ Discusses text after reading, using details from the text
- ★ Makes predictions about text based on prior knowledge and personal experiences
- ★ Identifies new information in text
- ★ Notices and asks questions when meaning is lost or understanding is interrupted

## 3. The student uses text for a variety of purposes

- ★ Uses text for a variety of purposes (uses environmental print, uses pictures to tell a story, follows written and/or pictorial directions)

## 4. The student sets goals and evaluates progress to improve reading.

- ★ Sets goals and evaluates progress to improve reading with guidance

## Math

Kindergarten math builds on a child's own understanding of the world, helping them to begin connecting it to more abstract mathematical concepts. For example, an exploration of patterns begins by looking for patterns in the environment. Then students begin making their own patterns using unifix cubes and pattern blocks. Eventually, students begin to look for patterns on a number line. Each math session in Kindergarten begins with the opportunity to explore math via literature. The books read provide a context for understanding math and increase student engagement. Another routine that supports a wide range of kindergarten mathematics standards is the calendar grid, and the daily Number Corner curriculum. Students play with number sense by counting in different situations and in many ways, using manipulatives like pattern blocks, buttons, and sea creatures. The Kindergarteners are learning to articulate and share with their peers their process for individually constructing meaning using mathematical language and a wide range of tools. Students are being guided and directed to identify points of connection with previous or current concepts and activities covered. Math is presented in a variety of learning modalities, helping the students to engage with the concepts and skills at their own level.

### 1. Whole Numbers

- ★ Rote counts by ones forward from 1 to 100 and backward from any number in the range of 10 to 1.
- ★ Reads aloud numerals from 0 to 31.
- ★ Fluently composes and decomposes numbers to 5.
- ★ Orders numerals from 1 to 10.
- ★ Counts objects in a set of up to 20, and counts out a specific number of up to 20 objects from a larger set.

- ★ Compares two sets of up to 10 objects each and says whether the number of objects in one set is equal to, greater than, or less than the number of objects in the other set.
- ★ Locates numbers from 1 to 31 on the number line.
- ★ Describes a number from 1 to 9 using 5 as a benchmark number.

### 2. Patterns and Operations

- ★ Copies, extends, describes, and creates simple repetitive patterns.
- ★ Translates a pattern among sounds, symbols, movements, and physical objects.
- ★ Models addition by joining sets of objects that have 10 or fewer total objects when joined and models subtraction by separating a set of 10 or fewer objects.
- ★ Describes a situation that involves the actions of joining (addition) or separating (subtraction) using words, pictures, objects, or numbers.

### 3. Objects and Their Locations

- ★ Identifies, names, and describes circles, triangles, rectangles, squares (as special rectangles), cubes, and spheres.
- ★ Sorts shapes using a sorting rule, and explains the sorting rule clearly.
- ★ Describes the location of one object relative to another object using words such as in, out, over, under, above, below, between, next to, behind, and in front of.

### 4. Reasoning, Problem Solving and Communication

- ★ Identifies the question(s) asked in a grade level appropriate problem
- ★ Identifies the given information that can be used to solve a grade level appropriate problem.
- ★ Recognizes when additional information is required to solve a grade level appropriate problem.
- ★ Selects from a variety of problem-solving strategies and uses one or more strategies to solve a grade level appropriate problem.
- ★ Answers the question(s) asked in a grade level appropriate problem.
- ★ Describes how a grade level appropriate problem was solved.
- ★ Determines whether a solution to a grade level appropriate problem is reasonable.

## Integrated Learning

In Kindergarten, our dedicated Integrated Learning time is a time to learn together and explore emergent themes related to science, social studies and art. Every week the students rotate through classrooms and the garden as scientists, artists and active citizens of our local community and their world. This year, Rhythm and Motion was the school-wide theme, so our Integrated Learning lessons were grown from our interests in these areas. The students have spent a lot of time nurturing and maintaining the Secret Garden with our garden specialist. This has given them the opportunity to explore its rich plant and animal life. Complimenting this in the fall has been our unit, Food: Science and Culture. In the course of this unit, the Kindergarteners have explored eating and foods from around the world and at their own tables. They have also implemented recipes to make their own food and drink. We have looked at the benefits foods offer our bodies and where the food we see on our tables originates. This fall, the students have participated in many activities to enrich our community, including organizing the Harvest Festival Food Drive and exploring the meaning of Veteran's Day. Rhythm and Motion offers each student the opportunity to learn about themselves, the world around them and their place in it.

# First Grade



## Writing

In First Grade, students are working to develop their identity as authors. The Writing Workshop curriculum supports this throughout each unit of study. Writing skills are also addressed many times a day during group interactive writing, independent journal writing and various emergent opportunities. Students are encouraged to use a combination of phonetic “best-guess” spelling, conventional spelling and resources such as environmental print when writing. First Graders write for a variety of purposes including reflective, narrative, responses to literature and letter formation. The students are beginning to translate and connect literacy concepts and phonetic skills to their writing. A major focus of First Grade writing is helping students to express their full ideas in written form. This includes pictures, labels, lists and all other forms of recording.

### 1. Writing Process

- ★ Develops ideas with supportive details and examples
- ★ Makes connections between words and ideas found in own reading when writing
- ★ Uses conventional sentence structure (noun + verb)
- ★ Generates a list of topics to write about
- ★ Attempts proper spellings of unknown words through sound analysis

### 2. The student writes in a variety of forms for different audiences and purposes

- ★ Writes in a variety of genres using mentor text

### 3. The student writes clearly and effectively

- ★ Correctly spells grade level appropriate high frequency words
- ★ Spells words with regular consonant-sound relationships and with regular short vowel patterns correctly
- ★ Understand the use of periods, question marks and exclamation marks as ending punctuations.
- ★ Writes letters and words legibly
- ★ Uses environmental print to check spelling

### 4. The student analyzes and evaluates the effectiveness of written work.

- ★ Sets goals and evaluates progress to improve own writing with teacher
- ★ Shares writing with a variety of audiences
- ★ Participates in discussions that evaluate the writing of others

## Reading

In First Grade, the students are immersed in a balanced reading program. This includes opportunities to engage with text independently, with a buddy, in a small group and in whole group settings. Students also participate in active exploration with letter/sound relationships, word solving strategies and sight word recognition. Learning is targeted by placing students in flexible, fluid groups, allowing the diverse needs of First Grade readers to be addressed. The range of reading success in First

Grade is quite wide, with some students meeting standards in controlled texts that focus on decoding and others in independent texts that challenge comprehension skills. The concepts and skills that students are working to meet in First Grade reflect this range.

### 1. The student understands and uses early literacy skills and strategies.

- ★ Is able to recognize common sight words in text
- ★ Uses left to right letter sound analysis to decode unknown words (sounding out)
- ★ Identifies sounds associated with consonant blends and digraphs (sh, th, wh, es, ck...)
- ★ Uses known words to decode new vocabulary (and/hand, today)
- ★ Uses common suffixes appropriately (e.g. -es, -s, -ed, -ing, -est)
- ★ Demonstrates phrased, fluent oral reading of familiar text

### 2. The student understands the meaning of what is read.

- ★ Notices and uses ending punctuation to aid in understanding of text (period, exclamation mark, question mark)
- ★ Uses context to retrieve meaning from unknown vocabulary
- ★ Rereads to problem solve, self-correct or confirm
- ★ Recognizes dialogue in text and interprets it appropriately
- ★ Provides an oral summary with appropriate details in sequence after reading
- ★ Connects new reading with previously read texts
- ★ Makes predictions about text and supports them with information from the text or personal experience and knowledge
- ★ Makes inferences from text and supports them with evidence from the text
- ★ Expresses opinions about the text and supports them with evidence from the text

### 3. The student uses text for a variety of purposes.

- ★ Uses text for a variety of purposes (uses environmental print, uses pictures to tell a story, follows written and/or pictorial directions)

### 4. The student sets goals and evaluates progress to improve reading.

- ★ Sets reasonable goals and evaluates progress with guidance to improve own reading



## Math

In First Grade, mathematicians play games, explore ideas and search for connections in the world around them. Students are encouraged to inquire, investigate, discuss, and construct as they explore in all mathematical areas. They participate in ongoing investigations developed within real-life contexts to encourage children to mathematize their lives. The Bridges curriculum, in partnership with other resources, provides a balanced framework for these investigations. Students put forth their ideas in a community of their peers and learn to justify and defend their thinking. Problem solving skills are developed using story problems which allow students to visualize the actions in the problem. First Graders move fluidly through visualization, recording and reporting to deepen their overall understanding of the number system and other mathematical concepts. Students are encouraged to approach problems in a variety of ways, looking to be accurate, fluent, and efficient in each situation. There is a focus on each student developing their individual identity as a mathematician and fostering a lifelong enthusiasm for math!

### 1. Whole Number Relationships

- ★ Counts by ones forward and backward from 1 to 120, starting at any number, and counts by twos, fives, and tens to 100
- ★ Names the number that is one less or one more than any number given verbally up to 120
- ★ Reads aloud numerals from 0 to 1,000
- ★ Orders object or events using ordinal numbers
- ★ Writes, compares, and orders numbers to 120
- ★ Fluently composes and decomposes numbers to 10
- ★ Groups numbers into tens and ones in more than one way
- ★ Groups and counts objects by tens, fives, and twos
- ★ Classifies a number as odd or even and demonstrates that it is odd or even

### 2. Addition and Subtraction

- ★ Connects physical and pictorial representations to addition and subtraction equations
- ★ Uses the equal sign (=) and the word equals to indicate that two expressions are equivalent
- ★ Represents addition and subtraction on the number line
- ★ Demonstrates the inverse relationship between addition and subtraction by undoing an addition problem with subtraction and vice versa
- ★ Adds three or more one-digit numbers using the commutative and associative properties of addition
- ★ Applies and explains strategies to compute addition facts and related subtraction facts for sums to 18
- ★ Quickly recalls addition facts and related subtraction facts for sums equal to 10
- ★ Solves and creates word problems that match addition or subtraction equations
- ★ Recognizes, extends, and creates number patterns

### 3. Geometric Attributes

- ★ Compares and sorts a variety of two- and three-dimensional figures according to their geometric attributes
- ★ Identifies and names two-dimensional figures, including those in real-world contexts, regardless of size or orientation
- ★ Combines known shapes to create shapes and divide known shapes into other shapes

### 4. Concepts of Measurement

- ★ Recognizes that objects used to measure an attribute (length, weight, capacity) must be consistent in size
- ★ Uses a variety of non-standard units to measure length
- ★ Compares lengths using the transitive property
- ★ Uses non-standard units to compare objects according to their capacities or weights
- ★ Describes the connection between the size of the measurement unit and the number of units needed to measure something
- ★ Names the days of the week and the months of the year, and uses a calendar to determine a day or month

### 5. Additional Key Content

- ★ Represents data using tallies, tables, picture graphs, and bar-type graphs
- ★ Asks and answers comparison questions about data

### 6. Reasoning, Problem Solving and Communication

- ★ Identifies the question(s) asked in a grade level appropriate problem
- ★ Identifies the given information that can be used to solve a grade level appropriate problem
- ★ Recognizes when additional information is required to solve a grade level appropriate problem
- ★ Selects from a variety of problem-solving strategies and uses one or more strategies to solve a grade level appropriate problem
- ★ Answers the question(s) asked in a grade level appropriate problem
- ★ Describes how a grade level appropriate problem was solved
- ★ Determines whether a solution to a grade level appropriate problem is reasonable

## Integrated Learning

In First Grade, our dedicated Integrated Learning time is a time to learn together and explore emergent themes related to science, social studies and art. Every week the students rotate through classrooms and the garden as scientists, artists and active citizens of our local community and their world. This year, Rhythm and Motion was the school-wide theme, so our Integrated Learning lessons were grown from our interests in these areas. The students have spent a lot of time nurturing and maintaining the Secret Garden with our garden specialist. This has given them the opportunity to explore its rich plant and animal life. Complimenting this in the fall has been our unit, Food: Science and Culture. In the course of this unit, the First Graders have explored eating and foods from around the world and at their own tables. They have also implemented recipes to make their own food and drink. We have looked at the benefits foods offer our bodies and where the food we see on our tables originates. This fall, the students have participated in many activities to enrich our community, including organizing the Harvest Festival Food Drive and exploring the meaning of Veteran's Day. Rhythm and Motion offers each student the opportunity to learn about themselves, the world around them and their place in it.

# Second Grade



## Writing

In Second Grade, we strive to write stories that really matter to us. We have many conversations about the “heart of a story” by asking ourselves, “What’s this story really about?” and focusing on how to communicate that to our readers. Students practice many revision strategies including: determining the most important part of their story, zooming in and adding details, and focusing on their feelings and dialogue. These strategies help the reader to better visualize the story. After generating multiple stories, students choose their favorite which they will then finish through revision, editing, and fancying it up to present.

Throughout the writing process, students work on mechanics, including the proper use of capitals and punctuation, and conventional spelling. Students edit both independently and with their writing partner. During word study, students collectively explore a number of spelling patterns and high-frequency words. We practice strategies for figuring out words through attending to sounds, syllables, and familiar spelling patterns, thus expanding our word-solving skills.

As the year progresses, Second Graders are challenged to become more sophisticated writers, using a notebook as a tool for collecting, generating and trying out ideas. They are asked to experiment with a wide variety of genres, everything from poetry and fictional tales to articles and advertisements! At this stage in their development, revision becomes a more central focus, and students are urged to continually reread and make changes to improve their writing. Word study and other writing mechanics are differentiated to meet the needs of diverse learners, and many students are encouraged to utilize more advanced punctuation such as commas, quotation marks, and parentheses. All students are supported to become more independent editors of their own and others’ work.

### 1. The student understands and uses a writing process

- ★ Prewrites to generate ideas and plan writing
- ★ Produces drafts
- ★ Revises to improve text
- ★ Edits or proofreads for conventions
- ★ Publishes text to share with audience
- ★ Adjusts writing process as necessary

### 2. The student writes in a variety of forms for different audiences and purposes

- ★ Adapts writing for a variety of audiences
- ★ Writes for different purposes
- ★ Writes in a variety of forms/genres

### 3. The student writes clearly and effectively

- ★ Develops and organizes writing
- ★ Uses appropriate style
- ★ Knows and applies developmentally appropriate writing conventions

### 4. The student analyzes and evaluates the effectiveness of written work

- ★ Analyzes and evaluates others and own writing
- ★ Sets goals and identifies strategies to improve writing
- ★ Perseveres through writing projects

## Reading

In Second Grade, we begin the year developing attitudes and habits of reading: getting routines established to maximize reading time, building stamina, and providing plenty of opportunities to share and discuss literature. Students are learning to self-select “good fit” books that are based on interest, the ability to read the words, and the ability to understand what they read. They are also exposed to a wide variety of genres. Our reading logs build a connection between home and school and help students notice their growth over time.

During independent and partner reading time, students work on a variety of individualized goals established with a teacher during reading conferences. These goals may include things such as: using context to derive the meaning of new words, self-correcting when they make errors that detract from meaning, attending to punctuation cues, or reading dialogue with phrasing and expression.

Teachers read aloud a variety of genres. Through discussion and lessons, students explore comprehension, fluency, and vocabulary building strategies to enrich their understanding and enjoyment of literature. Teachers explicitly model by talking about their thinking while they are reading. Students then practice important reading behaviors such as: checking for understanding, making predictions, and connecting the text to prior experiences and other texts. Students continue to develop and share their understanding of story elements, inference, character motives and feelings, and themes. The power of language is enjoyed and celebrated.

### 1. The student understands and uses different skills and strategies to read

- ★ Uses word recognition skills and strategies to read and comprehend text
- ★ Uses word solving skills and strategies to read and comprehend text
- ★ Uses vocabulary acquired through wide reading
- ★ Demonstrates fluent reading (phrasing, intonation, rate, attention to punctuation)

### 2. The student understands the meaning of what is read

- ★ Demonstrates evidence of reading comprehension
- ★ Understands and applies knowledge of text components to comprehend text
- ★ Expands comprehension by analyzing, interpreting, and synthesizing information and ideas in literary and informational text
- ★ Thinks critically and analyzes author’s use of language, style, purpose and perspective in literary and informational text

### 3. The student reads different materials for a variety of purposes

- ★ Reads to learn new information
- ★ Reads to perform a task
- ★ Reads for literary experience in a variety of genres

### 4. The student sets goals and evaluates progress to improve reading

- ★ Selects reading material that reflects appropriate level
- ★ Sets goals and identifies strategies to improve reading
- ★ Perseveres to accomplish goals

## Math

This year, our Second Grade mathematicians developed routines and began to build a mathematical community that allows them to engage in debate, justifying solution strategies, and defending answers. The primary focus during this first part of the year has been on number sense and algebraic thinking. Each session, students work through problems and engage in investigations, and then choose from a selection of “Work Place Activities.” During “Work Place,” students move from activity to activity, practicing and deepening their mathematical skills and concepts, including: exploring functions, copying and extending growing patterns, counting by 2’s, 5’s and 10’s, recording visual information, exploring the properties of 3-dimensional figures, exploring relationships, reading the clock face, analyzing likenesses and differences, and forming generalizations.

Students have many opportunities to solve problems individually, in small groups, and with the entire class. They are given multiple opportunities to develop visual thinking, which requires both the ability to extract and use information from pictures and the ability to put verbal or numerical information into picture form. Students create their own picture problems for others to solve. In addition to lending depth and meaning to the basic operations, students find connectedness between mathematics and other endeavors such as science and poetry. Symbols such as tally marks, quick sketches, numerals, addition, subtraction, multiplication, division, and equal signs are explored as students learn to communicate their thinking on paper.

### 1. Algebraic Thinking

- ★ Creates and states a rule for patterns that can be generated by addition and extends the pattern
- ★ Creates, extends, and predicts both growing and repeating patterns using objects or pictures.
- ★ Forms generalizations and states rules for patterns.

### 2. Addition and Subtraction

- ★ Quickly recalls basic addition facts and related subtraction facts for sums through 20
- ★ Solves addition and subtraction word problems that involve joining, separating, and comparing and verify the solution
- ★ Adds and subtracts two-digit numbers efficiently and accurately using a procedure that works with all two-digit numbers and explain why the procedure works or uses concrete objects to help with explanations
- ★ Adds and subtracts two-digit numbers mentally
- ★ Estimates sums and differences
- ★ Solves equations in which the unknown number appears in a variety of positions
- ★ Names each standard U.S. coin, writes its value using the \$ sign and the ¢ sign, and names combinations of other coins with the same total value
- ★ Determines the value of a collection of coins totaling less than \$1.00

### 3. Reasoning, Problem Solving, and Communication

- ★ Identifies the question(s) asked in a problem and any other questions that need to be answered in order to solve the problem
- ★ Identifies the given information that can be used to solve a problem
- ★ Recognizes when additional information is required to solve a problem
- ★ Selects from a variety of problem-solving strategies and uses one or more strategies to solve a problem
- ★ Identifies the answer(s) to the question(s) in a problem

## Integrated Learning

The Second and Third Graders contribute to their neighboring community by making food deliveries for St. Mary’s Food Bank to our local senior home. We work together in teams to load and unload bags of food and negotiate the responsibilities of pulling, pushing, and spotting the wagons – keeping their precious cargo safe. We strive to remain aware of others by sharing the sidewalk and acknowledging cars that stop for us. This work gives us an opportunity to explore seniors’ role in our community, how they are different from ourselves, what bias exists towards seniors, and how we are interconnected, all of which encourage a better understanding and interaction with the senior citizens.

Class Meetings are another venue for children to build community, develop social responsibility, take ownership of their learning environment, and solve social problems. The social skills students work on each week include: listening, taking turns, hearing different points of view, negotiating, communicating, helping one another, and taking responsibility for their own behavior.

This fall, the students dedicated much of their time to building community in their classrooms and throughout the Second and Third Grade classes. We began the year by getting to know one another and talking about how we want to interact and learn together. Our school-wide, year-long theme, Rhythm and Motion, inspired a lot of games and activities that encouraged movement, laughter, and play which have helped us get to know one another better. Our first art project was a self-portrait that shared parts of who we are and included imaginative ways to move around.

Our fall science unit on spiders piqued curiosity, interest, and some fear in our students. We began in the garden, noticing the abundance of spiders, identifying different types, and exploring webs, predators, and prey. We dove deeper and became researchers, reading informational texts as we learned about text features and glossaries. We practiced taking notes and generating questions, creating a Spider Museum to share our knowledge with the entire community. Through art we further learned about the anatomy of a spider and through folk tales we explored the different cultural influences of spiders. We culminated our investigation with a field trip to the spider habitat at Camp Long.

Our post office project offered both social and academic challenges and allowed Second and Third Graders to be leaders within the school. Students collaborated to successfully manage the task of processing and delivering all of the mail. While the post office was up and running, we investigated communication, and the way it has changed throughout history, explored world geography as we kept track of all the countries from which we received mail, examined the art on stamps and post cards from around the world before designing our own, learned to write both friendly and persuasive letters, and developed our computation skills as we practiced making change for customers. This rich project allowed us to integrate literacy, math, social studies, and art!





## Writing

In Third Grade, we strive to write stories that really matter to us and to have many conversations about the “heart of a story” by asking ourselves “what’s this story really about?” and focusing on how to communicate that to our readers. Students practice many revision strategies including: determining the most important part of their story, zooming in and adding details, and focusing on their feelings and dialogue. These strategies help the reader to better visualize the story. After generating multiple stories, students choose their favorite which they will then finish through revision, editing, and fancying it up to present.

Throughout the writing process, students work on mechanics, including the proper use of capitals and punctuation, and conventional spelling. Students edit both independently and with their writing partner. During word study, students collectively explore a number of spelling patterns and high-frequency words. We practice strategies for figuring out words through attending to sounds, syllables, and familiar spelling patterns, thus expanding our word-solving skills.

As the year progresses, Third Graders are challenged to become more sophisticated writers, using a notebook as a tool for collecting, generating and trying out ideas. They are asked to experiment with a wide variety of genres, everything from poetry and fictional tales to articles and advertisements! At this stage in their development, revision becomes a more central focus, and students are urged to continually reread and make changes to improve their writing. Word study and other writing mechanics are differentiated to meet the needs of diverse learners, and many students are encouraged to utilize more advanced punctuation such as commas, quotation marks, and parentheses. All students are supported to become more independent editors of their own and others’ work.

### 1. The student understands and uses a writing process

- ★ Prewrites to generate ideas and plan writing
- ★ Produces drafts
- ★ Revises to improve text
- ★ Edits or proofreads for conventions
- ★ Publishes text to share with audience
- ★ Adjusts writing process as necessary

### 2. The student writes in a variety of forms for different audiences and purposes

- ★ Adapts writing for a variety of audiences
- ★ Writes for different purposes
- ★ Writes in a variety of forms/genres

### 3. The student writes clearly and effectively

- ★ Develops and organizes writing
- ★ Uses appropriate style
- ★ Knows and applies developmentally appropriate writing conventions

### 4. The student analyzes and evaluates the effectiveness of written work

- ★ Analyzes and evaluates others and own writing
- ★ Sets goals and identifies strategies to improve writing
- ★ Perseveres through writing projects

## Reading

We begin the year developing attitudes and habits of reading: getting routines established to maximize reading time, building stamina, and providing plenty of opportunities to share and discuss literature. Students are learning to self-select “good fit” books that are based on interest, the ability to read the words, and the ability to understand what they read. They are also exposed to a wide variety of genres. Our reading logs build a connection between home and school and help students notice their growth over time.

During independent and partner reading time, students work on a variety of individualized goals established with a teacher during reading conferences. These goals may include things such as: using context to derive the meaning of new words, self-correcting when they make errors that detract from meaning, attending to punctuation cues, or reading dialogue with phrasing and expression.

Teachers read aloud a variety of genres. Through discussion and lessons, students explore comprehension, fluency, and vocabulary building strategies to enrich their understanding and enjoyment of literature. Teachers explicitly model by talking about their thinking while they are reading. Students then practice important reading behaviors such as: checking for understanding, making predictions, and connecting the text to prior experiences and other texts. Students continue to develop and share their understanding of story elements, inference, character motives and feelings, and themes. The power of language is enjoyed and celebrated.

### 1. The student understands and uses different skills and strategies to read

- ★ Uses word recognition skills and strategies to read and comprehend text
- ★ Uses word solving skills and strategies to read and comprehend text
- ★ Uses vocabulary acquired through wide reading
- ★ Demonstrates fluent reading (phrasing, intonation, rate, attention to punctuation)

### 2. The student understands the meaning of what is read

- ★ Demonstrates evidence of reading comprehension
- ★ Understands and applies knowledge of text components to comprehend text
- ★ Expands comprehension by analyzing, interpreting, and synthesizing information and ideas in literary and informational text
- ★ Thinks critically and analyzes author’s use of language, style, purpose and perspective in literary and informational text

### 3. The student reads different materials for a variety of purposes

- ★ Reads to learn new information
- ★ Reads to perform a task
- ★ Reads for literary experience in a variety of genres

### 4. The student sets goals and evaluates progress to improve reading

- ★ Selects reading material that reflects appropriate level
- ★ Sets goals and identifies strategies to improve reading
- ★ Perseveres to accomplish goals

## Math

Third Graders spend time solidifying their grasp of additive reasoning to be able to add and subtract whole numbers. Rather than counting one by one, students become accustomed to using chunks of numbers and landmark numbers (e.g. 10, 25, 100) when working with whole numbers. We have developed routines and built a mathematical community that allows them to engage in debate, justifying solution strategies, and defending their answers. There are three main areas of focus during the Third Grade year: multiplicative reasoning, equivalent representations, and computational fluency.

Multiplicative reasoning is more than just the ability to multiply and divide. This type of reasoning is about understanding that the base ten number system has a multiplicative structure. “For instance, the number 329 is really  $(3 \times 100) + (2 \times 10) + (9 \times 1)$  as well as a collection of 329 objects.” (Bridges in Mathematics, 2007)

Students work to recognize, create, and use equivalent representations of numbers and geometric objects to develop efficient strategies for computing and solving problems. “For example, a student who does not know the product of  $8 \times 7$  could use what she knows about the properties of multiplication to generate equivalent representations of  $8 \times 7$  in order to compute the product in a variety of ways.” (Bridges in Mathematics, 2007) Area models with 100s grids are used extensively, as well as other organization tools like t-charts, number lines, and 100s charts.

Computational fluency with whole numbers means that students have efficient, accurate, and generalized methods for computing that is based on students understanding of the properties and relationships of numbers. Algorithms become a tool for solving problems as students calculate mentally or use pictures, numbers, or words depending on the problem. Estimation strategies are stressed to enhance student understanding of the reasonableness of their solutions.

### 1. Addition, Subtraction, and Place Value

- ★ Reads, writes, compares, orders, and represents numbers to 999 using numbers, words, and symbols
- ★ Adds and subtracts 2 digit numbers using models, mental manipulation, and/or paper pencil strategies
- ★ Fluently and accurately adds and subtracts whole numbers using the standard regrouping algorithms
- ★ Estimates sums and differences to approximate solutions to problems and determines reasonableness of answers
- ★ Solves single- and multi-step word problems involving addition and subtraction of whole numbers and verifies the solutions

### 2. Additional Key Content

- ★ Determines whether two expressions are equal and use “=” to denote equality
- ★ Measures temperature in degrees Fahrenheit and degrees Celsius using a thermometer
- ★ Estimates, measures, and compares length and width in standard US customary and metric units
- ★ Counts mixed collections of coins
- ★ Tells time on an analog clock to 5 minute intervals
- ★ Uses strategies to determine the area of rectangles
- ★ Creates, reads, and interprets a variety of picture, symbolic, and bar graphs
- ★ Explores probability in the context of spinners, dice, or objects to determine the likelihood of an event

### 3. Reasoning, Problem Solving, and Communication

- ★ Determine the question(s) to be answered given a problem situation
- ★ Identifies information that is given in a problem and decides whether it is necessary or unnecessary to the solution of the problem
- ★ Identifies missing information that is needed to solve a problem

- ★ Determines whether a problem to be solved is similar to previously solved problems, and identifies possible strategies for solving the problem
- ★ Selects and uses one or more appropriate strategies to solve a problem
- ★ Represents a problem situation using words, numbers, pictures, physical objects, or symbols
- ★ Explains why a specific problem-solving strategy or procedure was used to determine a solution
- ★ Analyzes and evaluates whether a solution is reasonable, is mathematically correct, and answers the question
- ★ Summarizes mathematical information, draw conclusions, and explain reasoning
- ★ Makes and tests conjectures based on data (or information) collected from explorations and experiments

## Integrated Learning

The Second and Third Graders contribute to their neighboring community by making food deliveries for St. Mary’s Food Bank to our local senior home. We work together in teams to load and unload bags of food and negotiate the responsibilities of pulling, pushing, and spotting the wagons – keeping their precious cargo safe. We strive to remain aware of others by sharing the sidewalk and acknowledging cars that stop for us. This work gives us an opportunity to explore seniors’ role in our community, how they are different from ourselves, what bias exists towards seniors, and how we are interconnected, all of which encourage a better understanding and interaction with the senior citizens.

Class Meetings are another venue for children to build community, develop social responsibility, take ownership of their learning environment, and solve social problems. The social skills students work on each week include: listening, taking turns, hearing different points of view, negotiating, communicating, helping one another, and taking responsibility for their own behavior.

This fall, the students dedicated much of their time to building community in their classrooms and throughout the Second and Third Grade classes. We began the year by getting to know one another and talking about how we want to interact and learn together. Our school-wide, year-long theme, Rhythm and Motion, inspired a lot of games and activities that encouraged movement, laughter, and play which have helped us get to know one another better. Our first art project was a self-portrait that shared parts of who we are and included imaginative ways to move around.

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## Writing

In Fourth Grade in both reading and writing, we use the workshop approach developed by Lucy Calkins and the Columbia Teachers College Reading and Writing Project. In this model, each lesson consists of a brief mini-lesson followed by lots of time to read or write depending upon whether we are doing a reading or writing workshop. During this time, the teacher confers with individual students and works with small groups. This model of literacy instruction provides plenty of time for students to read and write – which is extremely important – but also gives students the tools, strategies, and structure that they need to progress quickly.

The Fourth Graders work hard to develop as writers in many different ways. Students study the qualities of great writing, how writers work with partners, practice revision, learn the basics of editing, and study the writing of published authors and fellow students. Above all, they spend a great deal of time writing! The stories the students publish reflect an understanding of narrative structure, an ability to use details, dialogue, and action to develop the story, and an impressive sophistication in the use of grammatical structures and figurative language. In future units, students write expository text (essays) and fiction.

Over the course of the year, Fourth Grade students write in many genres, including personal narrative, persuasive essay, fiction, informational report, and poetry. Students spend a great deal of time writing during workshop, but are also asked to write in science, social studies, and in math. Throughout the year, we watch our students grow in their mastery of mechanics, organization, production, and depth of thinking. By this spring, we hope that every student sees himself or herself as a competent writer. We also hope that every student can navigate the process of drafting, revision, editing, and publishing with limited support.

### 1. The student understands and uses a writing process

- ★ Prewrites to generate ideas and plan writing
- ★ Produces drafts
- ★ Revises to improve text
- ★ Edits or proofreads for conventions
- ★ Publishes text to share with audience
- ★ Adjusts writing process as necessary

### 2. The student writes in a variety of forms for different audiences and purposes

- ★ Adapts writing for a variety of audiences
- ★ Writes for different purposes
- ★ Writes in a variety of forms/genres

### 3. The student writes clearly and effectively

- ★ Develops and organizes writing
- ★ Uses appropriate style
- ★ Knows and applies developmentally appropriate writing conventions

### 4. The student analyzes and evaluates the effectiveness of written work

- ★ Analyzes and evaluates others and own writing
- ★ Sets goals and identifies strategies to improve writing

## Reading

As previously mentioned in the Writing Section, we use the workshop model developed by Lucy Calkins and the Columbia Teachers College Reading and Writing Project. During reading time, our students learn how discussing books with a reading partner can help deepen our understanding and enjoyment of books. Each child has an assigned reading partner with whom he or she works. The students may choose to remain with the same partner all year if the partnership is working well. Reading partners will support each others' individual goals. These goals often grow out of conferences with the teacher, but may also come from lessons, group discussions, and partner work. As the year progresses, the students continue to develop their capacity to identify their own strengths, needs, and goals.

The second piece of our reading curriculum is the Interactive Read-Aloud (teacher reading to students). Through interactive read-alouds we are able to enjoy books together as a class. During this time, we explore different authors and genres and explain and demonstrate behaviors of proficient readers. Students are able to participate in active conversations and practice making connections, predictions, and inferences.

### 1. The student understands and uses different skills and strategies to read

- ★ Uses word recognition skills and strategies to comprehend text and read fluently
- ★ Uses vocabulary (word meaning) strategies to comprehend text
- ★ Builds vocabulary through wide reading

### 2. The student understands the meaning of what is read

- ★ Demonstrates evidence of reading comprehension
- ★ Understands and applies knowledge of text features to comprehend text
- ★ Expands comprehension by analyzing, interpreting, and synthesizing information and ideas in text
- ★ Thinks critically and analyzes author's use of language, style, purpose, and perspective

### 3. The student reads different materials for a variety of purposes

- ★ Reads to learn new information or perform a task
- ★ Reads for a literary experience in a variety of genres

### 4. The student sets goals and evaluates progress to improve reading

- ★ Assesses reading strengths and need for improvement
- ★ Develops interests and shares reading experiences

## Math

At Giddens, we use the Bridges in Mathematics curriculum. These materials and approach to learning foster the development of visual and conceptual models of numbers and operations that will serve the students well as they advance in studies related to mathematics. In Bridges, concrete manipulation of objects leads seamlessly into written mathematics and the use of algorithms. In Fourth Grade, students develop a deep understanding of mathematical reasoning as well as greater computational fluency. The Bridges curriculum includes a daily lesson, which may consist of group activities, written work, and games, as well as Number Corner, a set of activities that incorporates a calendar pattern, a number line, data collection, problem solving, and computational fluency activities.

Our first unit begins with an exploration of area in which the students measure irregular shapes with a variety of different polygons. As the unit progresses, students begin using multiplication and division to find area as measured with different types of polygons. This exploration seamlessly transitions into a study of how we can use rectangular arrays to model multiplication and division problems. Our first unit ends after we revisit the concepts of area and perimeter using square units. It is fascinating to observe the ways in which the students' understanding of mathematical concepts evolves throughout the unit. Our second unit deepens the understanding of place value, the ability to multiply and divide larger numbers and develops increased computational fluency. The third unit is a study of fractions and division.

### 1. Multi-Digit Multiplication

- ★ Quickly recalls multiplication facts through 10 X 10 and the related division facts.
- ★ Identifies factors and multiples of a number.
- ★ Fluently and accurately multiplies up to a three-digit number by one- and two-digit numbers using the standard multiplication algorithm.
- ★ Multiplies by 10, 100, and 1,000.
- ★ Solves single- and multi-step word problems involving multi-digit multiplication and division. Then verifies the solutions.

### 2. Fractions, Decimals, and Mixed Numbers

- ★ Compares, simplifies, rounds, orders and converts decimals, fractions and mixed numbers.
- ★ Reads, writes, compares, and orders decimals through hundredths.

### 3. Concept of Area

- ★ Determines congruence of two-dimensional figures.
- ★ Determines the approximate area of a figure using square units.
- ★ Determines the perimeter and area of a rectangle using formulas, and explains why the formulas work.
- ★ Demonstrates that rectangles with the same area can have different perimeters, and that rectangles with the same perimeter can have different areas.

### 4. Additional Key Content

- ★ Represents an unknown quantity in simple expressions, equations, and inequalities using letters, boxes, and other symbols.
- ★ Solves single- and multi-step problems involving familiar unit conversions, including time, within either the U.S. customary or metric system.
- ★ Analyzes and records data with a variety of graphs.
- ★ Determines a simple probability from a context that includes a picture.
- ★ Describes and compares the likelihood of events.
- ★ Determines range, median and mode in a data set.
- ★ Displays the results of probability experiments and interprets the results.
- ★ Estimates and determines elapsed time using a calendar, a digital clock, and an analog clock.

### 5. Reasoning, Problem Solving, and Communication

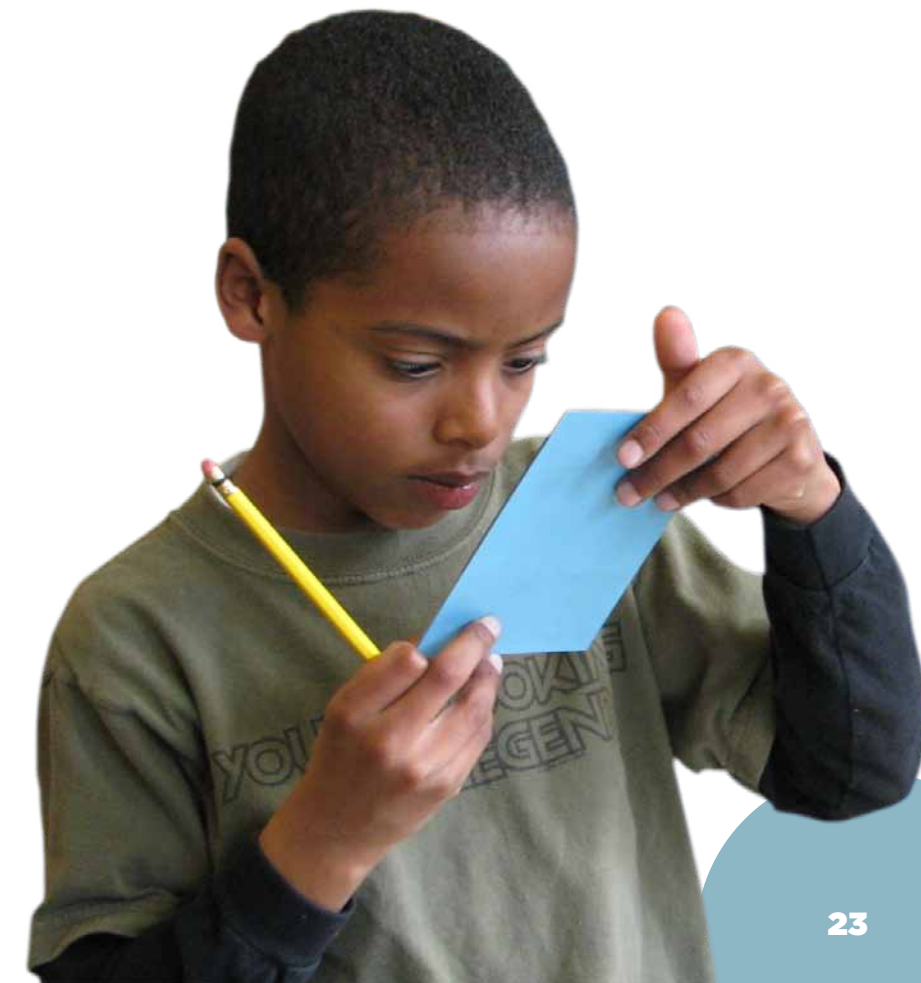
- ★ Represents a problem situation using words, numbers, pictures, physical objects, or symbols.
- ★ Selects and uses one or more appropriate strategies to solve a problem and explains why that strategy was chosen
- ★ Identifies information that is given in a problem and decides whether it is necessary or unnecessary to the solution of the problem.
- ★ Summarizes mathematical information, draws conclusions, and explains reasoning.

### Integrated Learning

In social studies this year, we investigated Washington State History. We started the year with a highly local focus, by having the students complete a study of the history of our school. As we progressed through the year, we zoomed out both geographically and temporally to encompass the history of our city and of our state. As they study our state's history, the children will develop skill and understanding in research, oral presentations, visual presentations, note-taking, outlining, map-reading, expository writing, and reading informational text.

In science this year, we studied earth processes through the lens of natural disasters. Students discovered how and why these events happen as well as how they affect the environment and living populations. Throughout the year we spent time learning how to make observations and predictions, in addition to developing skills to navigate nonfiction texts. Students practiced reading for information and learned to revise their initial thinking when new information in discovered.

Our focus in art is observation. In fact, this is a theme throughout the curriculum: we ask the students to live like writers and notice the details of their lives, we ask them to carefully observe features of the books they read, and we ask them to make many kinds of observations in science class. In art class, the students draw still-lives and landscapes, sketch outdoors, and experiment with color in the media of watercolor and oil pastel.





## Writing

In Fifth Grade in both reading and writing, we use the workshop approach developed by Lucy Calkins and the Columbia Teachers College Reading and Writing Project. In this model, each lesson consists of a brief mini-lesson followed by lots of time to read or write depending upon whether we are doing a reading or writing workshop. During this time, the teacher confers with individual students and works with small groups. This model of literacy instruction provides plenty of time for students to read and write – which is extremely important – but also gives students the tools, strategies, and structure that they need to progress quickly.

Fifth Graders work hard to develop as writers in many different ways. They study the qualities of great writing, how writers work with partners, practice revision, learn the basics of editing, and study the writing of published authors and fellow students. Above all, they spend a great deal of time writing! The stories the students publish tend to reflect an understanding of narrative structure, an ability to use details, dialogue, and action to develop the story, and an impressive sophistication in the use of grammatical structures and figurative language. In future units, Fifth Graders write expository text (essays) and fiction.

Over the course of the year, students write in many genres, including personal narrative, persuasive essay, fiction, informational report, and poetry. Students spend a great deal of time writing during workshop, but are also asked to write in science, social studies, and in math. Throughout the year, facilitate our students' growth in their mastery of mechanics, organization, production, and depth of thinking. By the spring time, we hope that every student sees himself or herself as a competent writer. We also hope that every student can navigate the process of drafting, revision, editing, and publishing with limited support.

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- ★ Writes in a variety of forms/genres

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- ★ Analyzes and evaluates others and own writing
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- ★ Reads for a literary experience in a variety of genres

### 4. The student sets goals and evaluates progress to improve reading

- ★ Assesses reading strengths and need for improvement
- ★ Develops interests and shares reading experiences

## Math

At Giddens, we use the Bridges in Mathematics curriculum. This approach fosters the development of visual and conceptual models of numbers and operations that will serve the students well as they advance in mathematics. In Bridges, concrete manipulation of objects leads seamlessly into written mathematics and the use of algorithms. In Fifth Grade, students develop a deep understanding of mathematical reasoning as well as greater computational fluency. The Bridges curriculum includes a daily lesson, which may consist of group activities, written work, and games, as well as Number Corner, a set of activities that incorporates a calendar pattern, a number line, data collection, problem solving, and computational fluency activities.

Our first unit of math begins with an introduction of different mathematical strands, giving the students a picture of what's to come over the course of the year. Our second unit concentrates on exploring multi-digit multiplication and division. We utilize a base-ten visual method that breaks the problem into partial products. We begin by looking at and building arrays to represent

the different dimensions of the problem. The visual method provides the students with a solid conceptual foundation. After establishing a solid understanding of the visual model, we slowly remove the visual aspects and work our way to understanding the standard algorithm.

Number Corner is a time in which we investigate math skills and concepts through patterns. Our patterns focus on 2-D polygons with reflective and rotational symmetry, determining the area of 2-D polygons, finding equivalence between money, fractions, and decimals and elapsed time. During this time we also focus on multi-step problem solving using organized lists, pictures, diagrams, or charts. An important aspect of Number Corner is teaching students how to share their thinking with others with words and on paper. This time is filled with insightful observations and lively discussion.

### 1. Multiplication and Division

- ★ Represents multi-digit multiplication and division using place value models and connects the representation to the related equation
- ★ Fluently and accurately divides up to a four digit number by one- or two-digit divisors using multiple strategies including long-division algorithms
- ★ Mentally multiplies and divides two-digit numbers by one digit numbers and explains the strategies used
- ★ Solves single- and multi-step word problems involving multi-digit multiplication and division and verifies the solutions

### 2. Fractions and Decimals

- ★ Represents addition and subtraction of fractions, mixed numbers, and decimals using visual and numerical models, and connects the representation to the related equation
- ★ Given two fractions with unlike denominators, rewrites the fractions with a common denominator
- ★ Determines the greatest common factor and the least common multiple of two or more whole numbers
- ★ Fluently and accurately adds and subtracts fractions, including mixed numbers and decimals
- ★ Solves single- / multi-step word problems involving addition and subtraction of whole numbers, fractions (including mixed numbers), and decimals, and verifies the solutions

### 3. Geometry

- ★ Classifies quadrilaterals
- ★ Identifies, sketches, and measures acute, right, and obtuse angles
- ★ Identifies, describes, and classifies triangles by angle measure and number of congruent sides
- ★ Determines the formula for the area of a parallelograms and triangles
- ★ Determines the perimeters and areas of triangles and parallelograms
- ★ Draws quadrilaterals and triangles from given information about sides and angles
- ★ Determines the number and location of lines of symmetry in triangles and quadrilaterals

### 4. Representation of Algebraic Relationships

- ★ Describes and creates a rule for numerical and geometric patterns and extends the patterns
- ★ Writes a rule to describe the relationship between two sets of data that are linearly related
- ★ Writes algebraic expressions that represent simple situations and evaluates the expressions, using substitution when variables are involved
- ★ Graphs ordered pairs in the coordinate plane for two sets of data related by a linear rule and draws the line they determine

### 5. Additional Key Content

- ★ Classifies numbers as prime or composite
- ★ Determines and interprets the mean of a small data set of whole numbers
- ★ Constructs and interprets line graphs

### 6. Reasoning, Problem Solving, Communication

- ★ Determines the question(s) to be answered given a problem situation
- ★ Identifies information that is given in a problem and decides whether it is essential or extraneous to the solution of the problem
- ★ Represents a problem situation using words, numbers, pictures, manipulatives, or symbols
- ★ Selects and uses one or more appropriate strategies to solve a problem
- ★ Explains why a specific problem-solving strategy or procedure was used to determine a solution
- ★ Analyzes and evaluates whether a solution is reasonable, is mathematically correct, and answers the question

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