Burroughs
Community School
'A Tradition of Academic Excellence'

Advanced Learners

At Burroughs Community School we provide opportunities for Advanced Learners (ALs) in a variety of ways:

Identification Criteria:
Decisions about Advanced Learner identification for currently enrolled MPS students will consider the following:

- Assessment of ability (Cognitive Abilities Test - CogAT7) for all 2nd Graders (optional in other Grades)
- Assessment of achievement (MCA & MAP)
- Information from teachers and parents about demonstrated characteristics in and out of the classroom

Some students with advanced learning needs require services beyond Levels I and II. The core curriculum is differentiated by the classroom teacher to provide greater depth, complexity, novelty and/or pacing based on individual strengths, talents and sustained interests. Instructional practices for Advanced Learners and grouping are emphasized at this level.

- **Who**: Students identified as Advanced Learners
- **What**: Emphasis on qualitative differentiation of the core curriculum with depth, complexity, novelty, and pacing
- **How**:
  - Grouping for core instruction in Math & Literacy
  - Content with added depth and complexity
  - Focus on critical and creative thinking to solve complex problems within the core content
  - Development of advanced research and product development skills

Levels of Service http://talentdevelopment.mpls.k12.mn.us/levels_of_service

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Math at Burroughs Community School
Singapore Math - All students K-5

Singapore Math was first introduced in the United States through the distribution of Primary Mathematics, a Singapore textbook series adapted to United States needs in 1988. The term came into use in the United States around the time when North American educators and schools started referring to the books used by Singaporean students as Singapore Math. In the United States, the **Singapore Math Method** of teaching mathematics is based on the national math curriculum of Singapore. Although sometimes presented as an innovative new method, this curriculum is based primarily on time-tested traditional mathematics instruction.

The level of mathematical rigor in Singapore math is higher than in most U.S. math programs. Since fewer topics are taught each year for mastery, previously learned topics are generally seen only in the context of higher level mathematics, not repeated year to year as in typical overstuffed math textbooks. This focused and concentrated mastery approach allows students to move to increasingly higher-level mathematical content each year.

Singapore math textbooks are more rigorous than typical United States math programs. This is because the emphasis is on building strong number sense - the foundation upon which future mathematical knowledge is built. By Third Grade, this increase in rigor begins to become apparent and by Fifth Grade, Singapore math textbooks are approximately one to two years ahead of U.S. math programs. Also, problem-solving strategies such as bar modeling are developed gradually across the grades. Therefore, if Fourth or Fifth grade students who have never had Singapore math before are introduced to the program, they may challenging due to the increased rigor.

Features:

1. This curriculum features a mastery approach that builds upon preceding levels and assumes that what was taught need not be taught again. When the same topic (such as place value) is revisited next year, it is discussed at a higher level.

2. The principle of teaching mathematical concepts from concrete through pictorial to abstract is one of the attributes of this curriculum. For example, introduction of abstract decimal fractions (in Grade 4) is preceded by their pictorial model of centimeters and millimeters on a metric ruler, but even earlier (in Grades 2 & 3) addition and subtraction of decimals is studied in the concrete form of dollars and cents.

3. Another element of this curriculum is the systematic use of word problems as the way of building the language of mathematical operations. Simply put, students learn when to add and when to subtract, relying not on clue words but on the meaning of the situation.

4. This method minimizes the need for repetitive drill by sequencing of the topics. For instance, the introduction of multiplication facts by 2, 3, 4 and 5 in the middle of Grade 2 is followed by a section of reading statistical data from a graph.

Singapore Math

For more information: www.singaporemath.com

Project M² & M³: a national curriculum to nurture math talent in elementary students.

Supplement Aligned with Singapore Math (selected units in grades K-5)

For all students in Grades K-2…

Project M²: Mentoring Young Mathematicians is designed to foster inquiry and engage students in critical thinking, problem solving and communication. The units are focused on 'in-depth' mathematics using research-based practices and standards in mathematics education and early childhood education.

The curriculum offers one unit which focuses on geometry and the other on measurement as the key areas of emphasis. As a supplement to Singapore Math, Project M² also aligns to the Common Core State Standards for geometry and measurement.

Goals Include:

- Fostering inquiry and engaging primary students in critical thinking, problem-solving, and communication.
- Developing student's understanding of geometry and measurement and content processes.
- Supporting young students' real-world experiences in mathematics.
- Increasing mathematics achievement of all students.
- Targeting the participation of all students' backgrounds and experiences.

What Your Child is Learning – Geometry & Measurement

Geometry is the study of the space we live in; it also helps us learn more about other areas of mathematics such as number sense, algebra and measurement. Connections to science and art are made as students develop spatial sense by building shapes and designs.

Measurement is a process that students use in their lives every day as they explore the world around them. They wonder how long the earthworm is, how tall they are compared to their best friend, how big the soccer field is, and how many cups of juice their new thermos holds. And this is just for starters!

This is an advanced mathematics curriculum through research by the National Science Foundation and conducted at the Neag School of Education of the University of Connecticut.

Mentoring Young Mathematicians

http://www.corestandards.org/the-standards/mathematics
http://projectm2.uconn.edu/

For students in Grades 3-5…

Project M3: Objectives include helping your children grow in their abilities to communicate as mathematicians and in the process, they become better problem-solvers.

In Grades 3-5, students are clustered by proficiency based on several pieces of data, i.e., MCA & MAP standardized tests, Singapore Fall Placement Assessments and District Math Benchmark Assessments. The amount and intensity of M3 Math varies with the proficiency level of each group.

Goals Include:

- Creating challenging and motivational curriculum units for students
- Providing ongoing professional development for teachers
- Increasing math achievement and attitudes toward math in talented and diverse students
- Targeting the participation of all students' background and experiences.

What Your Child is Learning – Mathematical Communication and Problem Solving

One of the goals of Project M3 is to help your child grow in his or her ability to communicate as a mathematician and in the process become a better problem-solver. This process helps in any context in which a person is attempting to convey ideas, thoughts, questions, or conjectures about mathematics to others. This view of mathematical communication extends beyond talk, although classroom conversation (students to teachers and students to students) is a central focus. People can communicate their mathematical thinking in spoken words and gestures, with physical models or technology, in pictures, in symbols, in written words, or in graphs & tables. All of these different forms of communication are important as students explore and investigate mathematics.

Many students give up quickly when a math problem looks unfamiliar. However, students who have had practice in talking at length with their peers and teachers about solving mathematical problems tend to persist longer in trying to understand a new problem. As they get used to the process of explaining their thinking and revising their thinking in light of others' comments, they come to understand that it takes time to process a problem. They don't give up as quickly.

Curriculum Units:

National experts in the fields of math education, mathematics, and gifted and talented education and teachers are designing the curriculum. The content units of instruction are based on the ***National Council of Teachers of Mathematics*** (NCTM) Content Standards and include Number, Algebraic Thinking, Geometry, Measurement, and Data Analysis and Probability. The NCTM Process Standards will be embedded in these units concentrating on communication, reasoning, connections, and problem-solving.

For more information: www.gifted.uconn.edu/projectm3/index.html

Balanced Literacy at Burroughs:

A Balanced Literacy Framework contains Guided, Shared & Independent Reading strands. When implementing this framework, teachers utilize a balanced mix of whole group, small group, and independent reading to provide comprehensive literacy learning for students. Groups are formed to challenge students at their highest Literacy Level in a Reader's/Writer's Workshop.

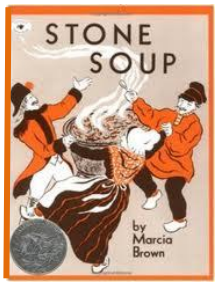
Leveled Libraries in each classroom support guided, shared and independent reading. These Libraries support the ability to ensure each student receives rich instruction to meet their individual needs as readers, writers, speakers and listeners.

In addition to these materials and instructional approaches present in our classrooms to support literacy development, home support for reading remains a critical component for student success. Research supports that volumes of reading and re-reading books with your child, talking with your child about books they have read, and having your child read and write about their reading at home are excellent ways to build good habits and support great readers.

Common Core State Standards: The *Minnesota K-12 Academic Standards in English Language Arts*, which include reading, writing, speaking, viewing, listening, media literacy, and language standards are the driving force of the curriculum. Students learn and apply knowledge of the English language by gathering, comprehending, evaluating, synthesizing, and reporting information and ideas. These standards are delivered in a Balanced Literacy Framework which is a system that evaluates and meets the needs of all students, including Advanced Learners. It promotes and supports differentiated instruction for all students and puts the focus on what our students can do.

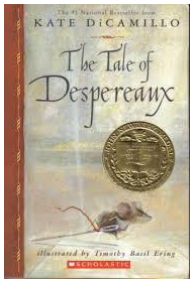
Examples of Topics for Literacy Advanced Learners:
(Units for Grades 1 & 2 have not been created to date by our Talent Development Department. These students are a part of the most challenging Reading Group in their classrooms).

Kindergarten Advanced Learner Literacy:



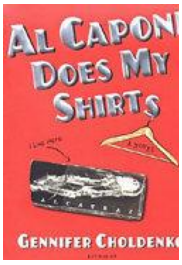
- Interpretive Discussions
- Connecting to Characters
- Agreeing and Disagreeing
- Writing a Response to an Interpretive Question
- Supporting Predictions with Evidence
- Noticing the Unanswered Questions: Asking Interpretive Questions at the End
- Noticing the Tricky Words: Building Multisyllabic Vocabulary
- Discussing our Interpretive Questions and Proving Our Ideas with Evidence
- Focus on Language: Inquiring into an author's choice of words.
- Answering Interpretive Questions about Poems: Proving with Evidence

Third Grade Advanced Learner Literacy:



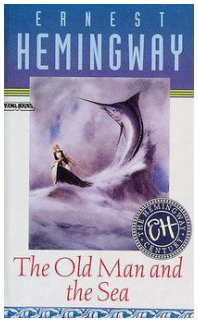
- Interpretive Discussions Developing Pre-Reading and Note-Taking Strategies
- Making Meaning through Questioning
- Monitoring our Understanding: Considering the Author's Intent
- Mining Deeper Meaning by Noting Ambiguity Referring Back to the Text
- Reading with Multiple Perspectives in Mind: Examining our own Broad Backgrounds
- Examining Multiple Perspectives within a Text: Characters' Broad Backgrounds and Perspectives
- Our Perspective is Shaped by Many "Texts": Developing Awareness of the relationship that exists between different texts (Intertextuality)
- Investigating an Author's Background and Perspective
- Designing Questions for Discussion Groups : Students Take Over the Structure to Examine Multiple Perspectives
- Students Conduct their Discussion Groups on Multiple Perspectives

Fourth Grade Advanced Learner Literacy:



- Interpretive Discussions Developing Pre-Reading and Note-Taking Strategies
- Proving and Disproving Assumptions
- Forcing a Conflicting Assumption
- Great Thinkers ask Questions to Probe & Clarify Assumptions
- Facts, Opinions, and Reasoned Judgment: Knowing the Difference
- Exploring our Assertions through Discussion
- Fair-mindedness: What is fair?
- Reserving Judgment in Favor of Questioning
- Analyzing Patterns and Contradictions in Primary Sources
- Interpreting Information from Maps and Inferring Context to Understand Multiple Perspectives
- Reconstructing Viewpoints

Fifth Grade Advanced Learner Literacy:



- Thinking like a literary critic-predicting thematic concept
- Dealing with Antiquated Language in Classical Literature
- Patterns as Evidence for Themes
- Symbolism of Characters
- Thematic Concept vs. Author's Message - Are they the same?
- What is Truth?
- Positioning and its Relationship to Truth
- Hyperbole, Exaggeration & Figurative Language
- Connecting Motifs to Thematic Concepts in Memoir
- Relating Back to the Universal Theme of Change