Math Enrichment Program
2017-18

The Harrison Township mathematics faculty and staff are confident and competent in teaching through a differentiated instruction model. *Mathematics Expressions* (K – 5) and *Connected Mathematics Project III* (6) materials are the primary resources used to meet the New Jersey Student Learning Standards (NJSLS) and the Common Core State Standards (CCSS). Math fluency is further supported through the use of *Read It! Draw It! Solve It!* by Elizabeth Miller (K – 6), *Mad Minutes: Mastering Number Facts* by Paul Joseph Shoecraft and Lynne Shoecraft (K – 6), *Math Minutes: One Hundred Minutes to Better Basic Skills* (1 – 6) by Creative Teaching Press, and *Daily Math Practice* by Evan-Moor (1 – 6). Students in grade 2 through 6 also use Reflex Math as an on-line resource building number facts. The delivery of instruction is targeted through a balance of whole group, small group (Math Workshop), and one-on-one instruction.

For students in Kindergarten through second grade at the Harrison Township Elementary School, enrichment opportunities are delivered by the classroom teacher and may be supported by an instructional aide, co-teacher, or mathematics interventionist. In this model, young students are not separated from their classroom teacher. Instead, they benefit from observing other ways of thinking mathematically while exploring the depth and breadth of the enriched mathematics curriculum within the classroom.

In grade 3, our students are ***informally*** identified based on class performance and the results of the N.W.E.A. Measures of Academic Progress and the InView assessment in the spring of their second grade year. In identified classrooms ($n \sim 5$), strong mathematical thinkers (InView ≥ 125 & NVNP ≥ 95; Spring MAP Grade $2 \geq 215$) have been clustered to receive the direct support of a math (enrichment) interventionist. ***Formal identification for math enrichment does not occur until the end of third grade.***

Enrichment in mathematics delves deeper into grade level content and skills. Although the students will be participating in grade level standards the thoroughness of the assignment is expanded by:

- Increasing the rigor (conceptual understanding and application)
- Requiring student independence
- Monitoring student resilience

Gifted students are able to:

- Recognize and spontaneously formulate problems, questions, and problem solving steps,
- Distinguish between relevant and irrelevant information in novel problem-solving tasks,
- See mathematical patterns and relationships,
- Have more creative strategies for solving problems,
- Think abstractly and reason analytically,
- Be more flexible in handling and organizing data,
- Offer original interpretations,
- Transfer ideas generalized from one mathematical situation to another,
- Be intensely curious about numeric information,
- Quickly learn and understand mathematical ideas,
- Reflect and take a longer amount of time when solving complex problems, and
- Persist in finding the solution to a problem.

Behavioral Characteristics of a Gifted Student:

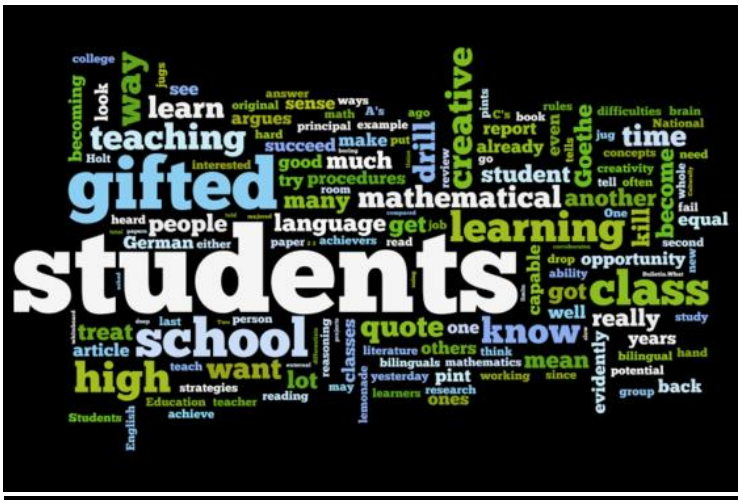
- Has verbal behavior characterized by 'richness of expression, imagery, elaboration, and fluency in any language (sometimes rambles on)
- Possess a large storehouse of information about a variety of topics beyond the usual interest of age peers
- Has rapid insight into cause-effect relationship; tries to discover the how and why of things; asks many provocative questions; wants to know what makes things or people "tick" (can be an annoyance in persisting to ask questions)
- Has a ready grasp of underlying principles; can quickly make valid generalizations about events, people, or things (sometimes skeptical)
- Tries to understand complicated materials by separating into respective parts; reasons things out and sees logical common sense answers
- Catches on quickly; retains and uses new ideas and information
- Prefers to work independently with minimal directions from teachers (resists direction)
- Has tendency to organize people, things, and situations (resists opinions of others; wants own way)
- Often is self-assertive (can be stubbornly set in ideas)
- Requires little drill to grasp concepts; seeks other than routine tasks (needs to know reasons for activity)
- Is persistent in task completion (sometimes unwilling to change tasks)
- Tasks initiative and shows independence of action
- Displays intellectual playfulness; fantasizes; imagines; manipulates ideas by elaboration or modification
- Is a high risk taker; is adventurous and speculative (has different criteria for success)
- Is individualistic; does not fear being different (departs from peer norm in action and behavior)
- Generates a large number of ideas or solutions to problems and questions
- Demonstrates exceptional ability in one of the fine arts (underline area of strength): dance, painting/drawing, sculpturing/clay modeling, instrumental or vocal music, role-playing/dramas
- Learns through experience and is flexible and resourceful in solving day-to-day problems
- Deals effectively with deprivations, problems, frustrations, or obstacles caused by the complexities of living conditions
- Is knowledgeable about things of which others are unaware
- Can transfer learning from one situation to another

Students that receive math instruction through the grade 4 and 5 enrichment program, will be clustered together in heterogeneous homerooms and have their math instruction in a pull-out stand-alone homogeneous classroom setting. All ten math periods will be spent in a homogeneous math environment. The fourth and fifth grade enrichment curriculum will follow the fourth and fifth grade general education curriculum and extend into the fifth and sixth NJSLS respectively. The fourth and fifth grade assessments will match or exceed the fourth and fifth grade general education curriculum; an additional emphasis will be placed on open-ended multi-level higher-order tasks.

At the end of fourth grade the full student population will be re-evaluated for potential participation in enrichment math in fifth grade. Continuation in enrichment will be based on the criteria listed below and includes classroom performance. Students that do not show a commitment for their own growth and learning will be excluded from the program. Students that have not maintained their growth trajectories based on the Measures of Academic Progress from NWEA and New Jersey State assessments (PARCC) will not be invited to continue in the enrichment program. This model will follow for fifth grade. The fifth grade delivery model mirrors that of grade four.

The enrichment curriculum in sixth grade is melded into an accelerated math program with a blending of the sixth and seventh grade New Jersey Student Learning Standards (content and skills). The criteria for formal inclusion in the program is listed below; please note that parents may waive their children into the accelerated program. Cross-district conversations will continue in order to assure our students' success in seventh grade at Clearview.

Through the use of the MAP (Measures of Academic Progress) goal-setting program, students at all grade levels are encouraged to set individual math goals in the N.W.E.A. math strands (e.g. Data Analysis, Probability, Discrete Mathematics, Geometry & Measurement, Mathematical Processes, Number & Numerical Operations, and Patterns & Algebra) to guide the enrichment teacher in facilitating their advanced mathematical thinking.



Student Criteria for Math Enrichment Program

Students Entering Kindergarten (Not formal enrichment)

- Review results of First Step screening and Fall MAP math for unusually high scores (Fall MAP ≥ 184) along with assessor and parent recommendation.
- Teachers who identify a student who may need more challenge in Math shall, in consultation with the principal, collaborate with the Math (Enrichment) Interventionist, for further enrichment strategies.
- Parent recommendations and names of transfer students who received enrichment services in their previous school are reviewed by the principal. A panel consisting of the Principal, Chief Academic Officer, Supervisor of Student Services, and guidance counselor reviewed referrals with the teacher to determine level of service needs; this practice is currently used as needed.

Students Entering First and Second Grade (Not formal enrichment)

- Kindergarten and First Grade teachers identify students who demonstrate exceptional development of mathematics skills, via the student identification cards and MAP results (MAP ≥ 199). Teacher and parent recommendations aid the principal in developing class lists for in-class differentiated instruction in grade one and two.
- Teachers who identify a student who may need more challenge in Math shall, in consultation with the principal, collaborate with the Math Enrichment Support teacher, for further enrichment strategies.
- Parent recommendations and names of transfer students who received enrichment services in their previous school are reviewed by the principal. A panel consisting of the Principal, Chief Academic Officer, Supervisor of Student Services, and guidance counselor reviewed referrals with the teacher to determine level of service needs; this practice is currently used as needed.

Students Entering Third Grade (Not formal enrichment)

- Second Grade teachers identify students who demonstrate exceptional development of mathematics skills, via the student identification cards. *MAP* (MAP ≥ 212) and InView (InView ≥ 125 & NVNP ≥ 95) test scores are reviewed for unusually high scores in mathematics. This data aid the principal in developing class lists for in-class differentiated instruction in grade three.
- Teachers who identify a student who may need more challenge in Math shall, in consultation with the principal, collaborate with the Math Enrichment Support teacher, for further enrichment strategies. Formal classroom changes are also an option.
- Parent recommendations and names of transfer students who received enrichment services in their previous school are reviewed by the principal. A panel consisting of the Principal, Chief Academic Officer, Supervisor of Student Services, and guidance counselor reviewed referrals with the teacher to determine level of service needs; this practice is currently used as needed.

Students Entering Fourth Grade ENRICHMENT

- Third grade teachers identify students demonstrating exceptional development of mathematics skills, via the student identification cards. This data aide the principal in developing class lists for in-class differentiated instruction in grade four.
- Students who scored ≥ 125 on the InView and had a Nonverbal National percentile (NVNP) ≥ 95 – or –
- Students who scored (Gifted Quotient) ≥ 115 on the Test of Mathematical Ability of Giftedness (TOMAGS) – or –
- Students who scored ≥ 225 on the Grade 3 Spring Measures of Academic Progress (MAP) Math and had an InView NVNP ≥ 95

  – or –
- Students with PARCC 3 scores @ LEVEL 5
- Three or more of the following criteria:
  - Students who scored ≥ 120 on the InView and had a Nonverbal National Percentile (NVNP) ≥ 90
  - Students who scored ≥ 110 on the TOMAGS
  - Students who scored ≥ 220 on the Grade 3 Spring Measures of Academic Progress (MAP) Math and had an InView NVNP ≥ 90
  - Teacher recommendations coupled with classroom performance
- Parent recommendations and names of transfer students who received enrichment services in their previous school are reviewed by the principal. A panel consisting of the Principal, Chief Academic Officer, Supervisor of Student Services, and Guidance Counselor reviewed referrals with the teacher to determine level of service needs; this practice is currently used as needed.

Students Entering Fifth Grade ENRICHMENT

- Fourth grade teachers identify students demonstrating exceptional development of mathematics skills, via the student identification cards. This data aide the principal in developing class lists for in-class differentiated instruction in grade five.
- Students previously identified as enrichment and had strong classroom performance in grade 4 (Trimester Means(s) ≥ 92) and who maintained MAP growth ≥ 230 – or –
- Students who scored ≥ 236 on the Grade 4 Spring Measures of Academic Progress (MAP) Math and had an InView NVNP ≥ 95

  – or –
- Students with PARCC 4 scores @ LEVEL 5
- Three or more of the following criteria:
  - Students who scored ≥ 120 on the InView and had a Nonverbal National Percentile (NVNP) ≥ 90
  - Students who scored ≥ 110 on the TOMAGS
  - Students who scored ≥ 230 on the Grade 4 Spring Measures of Academic Progress (MAP) Math and had an InView NVNP ≥ 90
  - Teacher recommendations coupled with classroom performance
- Parent recommendations and names of transfer students who received enrichment services in their previous school are reviewed by the principal. A panel consisting of the Principal, Chief Academic Officer, Supervisor of Student Services, and Guidance Counselor reviewed referrals with the teacher to determine level of service needs; this practice is currently used as needed.

Criteria for Accelerated Math Clustering

Accelerate math begins in grade 6. Students that have demonstrated exceptional math content and skill knowledge based on objective assessment scores AND classroom performance receive math instruction in a homogeneous classroom setting. Typical class-sizes are 30-32 students and one (1) classroom teacher. Because of the delivery and pacing, successful accelerated math students must enjoy the rigor of the curriculum, be able to work independently, and have stamina and grit.

Students Entering Sixth Grade ACCELERATED MATHEMATICS

- Six grade teachers identify students demonstrating exceptional development of mathematics skills, via the student identification cards. This data aide the principal in developing class lists for in-class differentiated instruction in grade four.
- Students previously identified as enrichment which maintained their MAP growth (Grade 5 MAP ≥ 240) – or –
- Students with PARCC 4 scores @ LEVEL 5
- Students with N.W.E.A. Measure of Academic Performance (MAP) 5 scores ≥ 240
- Students with PARCC 5 scores @ LEVEL 5
- The class records (report card data) of students that were previously identified for enrichment services are reviewed to determine eligibility. The student and their parents are consulted if the student's performance levels are below the rigorous standards.
- Parent recommendations and names of transfer students who received enrichment services in their previous school are reviewed by the principal. Parents may waive their children into accelerated math through consultation with the PVS building principal and/or the Chief Academic Officer.