

MATH VERTICAL TEAM: EQUITY, ACCESS & EXCELLENCE

Update: May 14, 2018

MATH VERTICAL TEAM FOR EQUITY, ACCESS AND EXCELLENCE IN MATH

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MATH in Cycle

2011 Penn Review

Review

Math Vertical Team
Review &
Development

Monitor

Develop

2013-14 MIF
Year 1 K-5

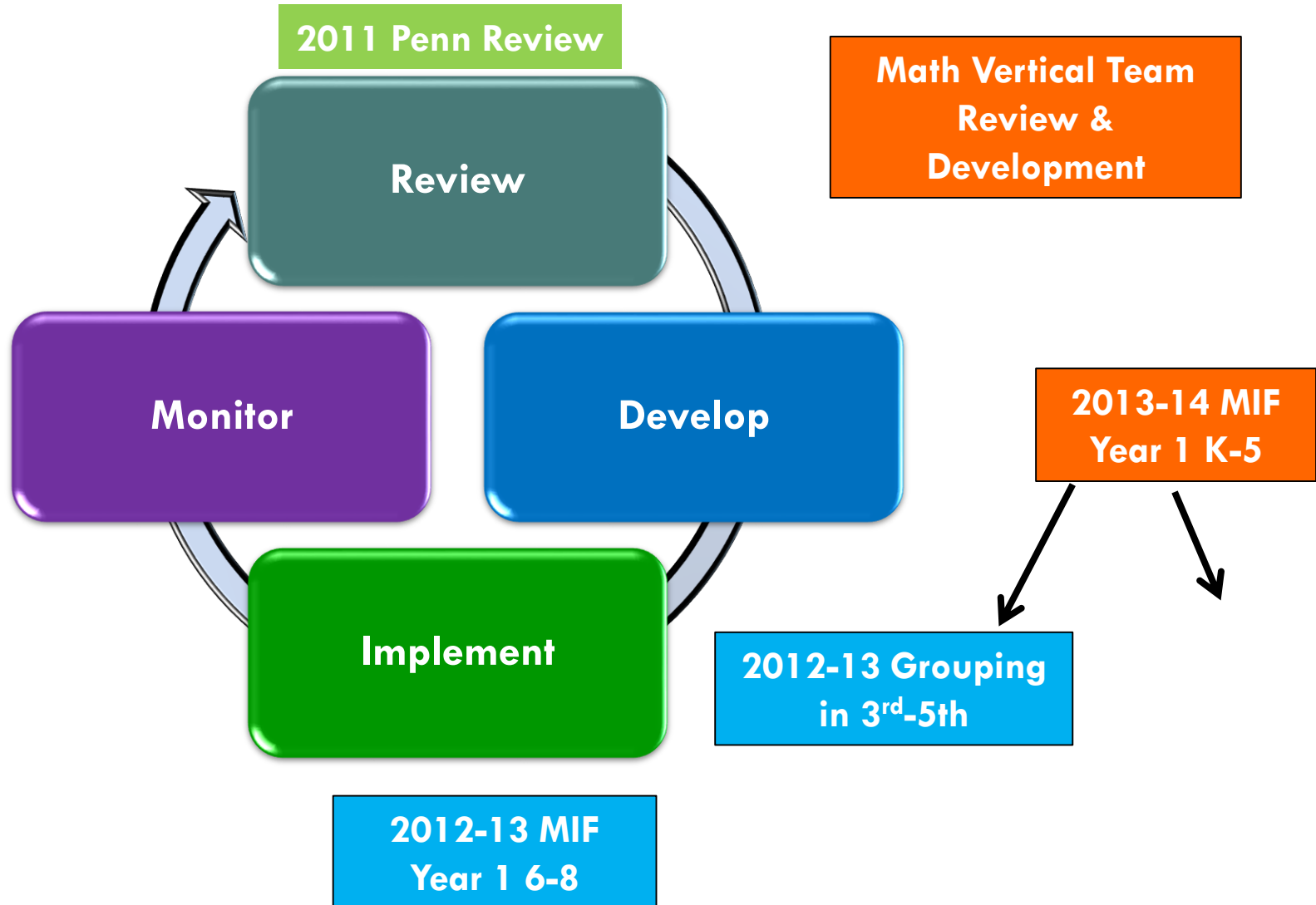
Gifted Education
Monitoring

Implement

2012-13 Grouping
in 3rd-5th

2012-13 MIF
Year 1 6-8

Continuous
Improvement
Cycle



DISTRICT EQUITY AND EXCELLENCE GOAL

*“Provide equity and excellence in educational programming, in expectations of students, and in service and resource provision. Increase achievement for **all** students and subgroups”*

2017-18 PROCESS

- Review of recommendations from MIF on-site Monitoring 2016-2017
- Review of feedback from two 2016-17 pilots in grades 3-4
- Site Visits
- Review of Research-Based Practices
- HMH System Diagnostic Consultation 2017-18
- County Directors MIF User Group
- Redesign of pathways from grade 3 to 12
- Design thinking
- Gifted Coordinator Consultation

TEAM CONCLUSIONS

- ❖ Developing self-efficacy is critical.
- ❖ Schools should be doing more of what has positive impact with a strong effect size. (See Hattie's effect size list: Hattie, Fisher, & Frey, 2017; Hattie, 2008)
- ❖ Acceleration does have a high effect size.
- ❖ Not labeling students has a high effect size.
- ❖ Ability grouping can be an institutional obstacle to equity/access.
- ❖ Fixed ability grouping does not have enough positive impact on achievement to outweigh the negative impacts for students placed in "lower" ability groups.
- ❖ Advanced students need access to high levels of challenge/enrichment.

SELF-EVALUATION/GUIDING QUESTIONS

- ❖ Does the proposal increase use of best practices?
- ❖ Does the proposal increase student sense of self-efficacy?
- ❖ Does the proposal have any chance of limiting students' sense of self-efficacy? (intended/ unintended)
- ❖ Does the proposal include options for students with demonstrated need for acceleration?

SELF-EVALUATION/GUIDING QUESTIONS (CONT'D)

- ❖ Does the proposal lead to any fixed groupings?
- ❖ Does the proposal impose limiting labels on students?
(Formal/informal? Intended/unintended?)
- ❖ Does the proposal impose any obstacles to equity/access?
 - Formal/informal?
 - Intended/unintended?
 - Short term/Long-term?



RECOMMENDATIONS: INSTRUCTIONAL PRACTICES



RECOMMENDATION 1: GRADES K-4

- Grades K-3 will remain as currently configured with heterogeneous classes and differentiation.
- In Grade 4, all classes will maintain heterogeneous grouping for math starting in 2018-2019.

RECOMMENDATION 2: GRADE 5

Maintain two levels starting in 2018-19:

- An enriched level
- A heterogeneous on-level group

Factors considered include increased content complexity in grade five and the transition to middle school.

K-5- ACROSS ALL GRADES AND LEVELS

Increase alignment with the approach of the core program:

- Promote social learning and self-efficacy
- Implement the program lesson design which includes differentiation options
- Develop additional differentiated resources to support and extend continued enrichment beyond the core.

ALL K-5 GRADES/LEVELS (CONTINUED)

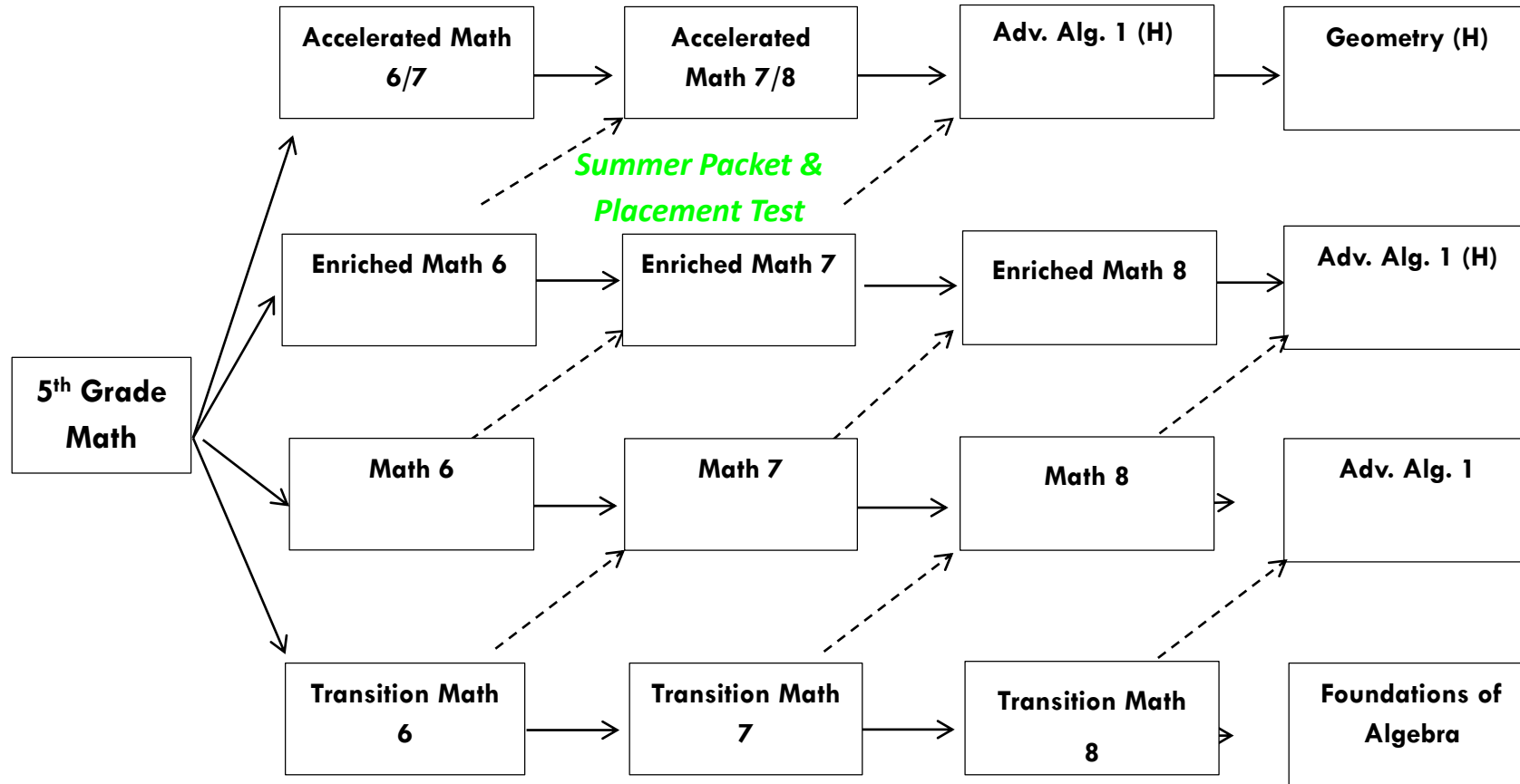
- ❖ Continue to involve gifted coordinators in evaluating needs for acceleration and supporting classroom teachers with individualized enrichment to meet needs of all advanced students (GIEP/non-GIEP)
- ❖ Increase opportunities for advanced students to experience depth and real world problem-solving.
- ❖ Maintain supplemental intervention instruction beyond the core math block to support students and ensure remediation needs do not interfere with the rigor of the core instructional block

RECOMMENDATION 3: GROUPING PRACTICES

Grades 6-8:

- Move toward elimination of the transition math classes
- Increase in-class supports (redesign of learning support)
- Maintain continual data review to ensure appropriate levels of rigor for all students
- Maintain focus on differentiation to support greater access to individualized challenge across all levels

SHMS Pathways



SYNCHRONOUS SUPPORTS: WHAT CAME BEFORE?

- Long-term sustained professional development in math
- District-wide training and PLC initiatives focused on collaborative analysis of student learning information to improve instruction and student achievement
- Gifted education review and development of cohesive team of gifted education coordinators focused on regular education opportunities for challenge. Includes routines for identifying students in need of acceleration.
- K-5 Implementation of system wide math intervention resources – to ensure the core instructional block remains rigorous core instruction and remediation is supplemented beyond the core
- Successful heterogeneous pilots in grades 3 and 4
- 5th Grade districtwide goal: Developing perseverance/growth mindset with mathematical problem-solving
- Schoolwide enrichment practices focused on design thinking and growth mindset

SYNCHRONOUS SUPPORTS FOR 2018-19

Curriculum Framework Review Cycle:

- 2012-13 Gifted Education Review: Adopted Schoolwide Enrichment model, expanded role of Gifted coordinators to provide leadership in GIEP/non-GIEP schoolwide enrichment
- 2018-19 Enrichment/Gifted Education Review: Review/alignment of enrichment practices, quarterly parent (GIEP/non-GIEP) focus groups on enrichment experiences, student surveys/interviews

THE CHALLENGE OF MATH EDUCATION TODAY

New standards require more:

- Depth and flexibility of understanding
- Application of learning to novel situations/real world problems
- Ability to explain and defend reasoning

Rote algorithms are insufficient:

- Focus on depth of understanding, flexibility of thinking.
- Slow down to go deeper.
- Greater opportunity for small group problem-solving, collaboration, high level discourse with peers, flexible thinking, non-routine problems

FOCUS ON MATHEMATICAL PRACTICES

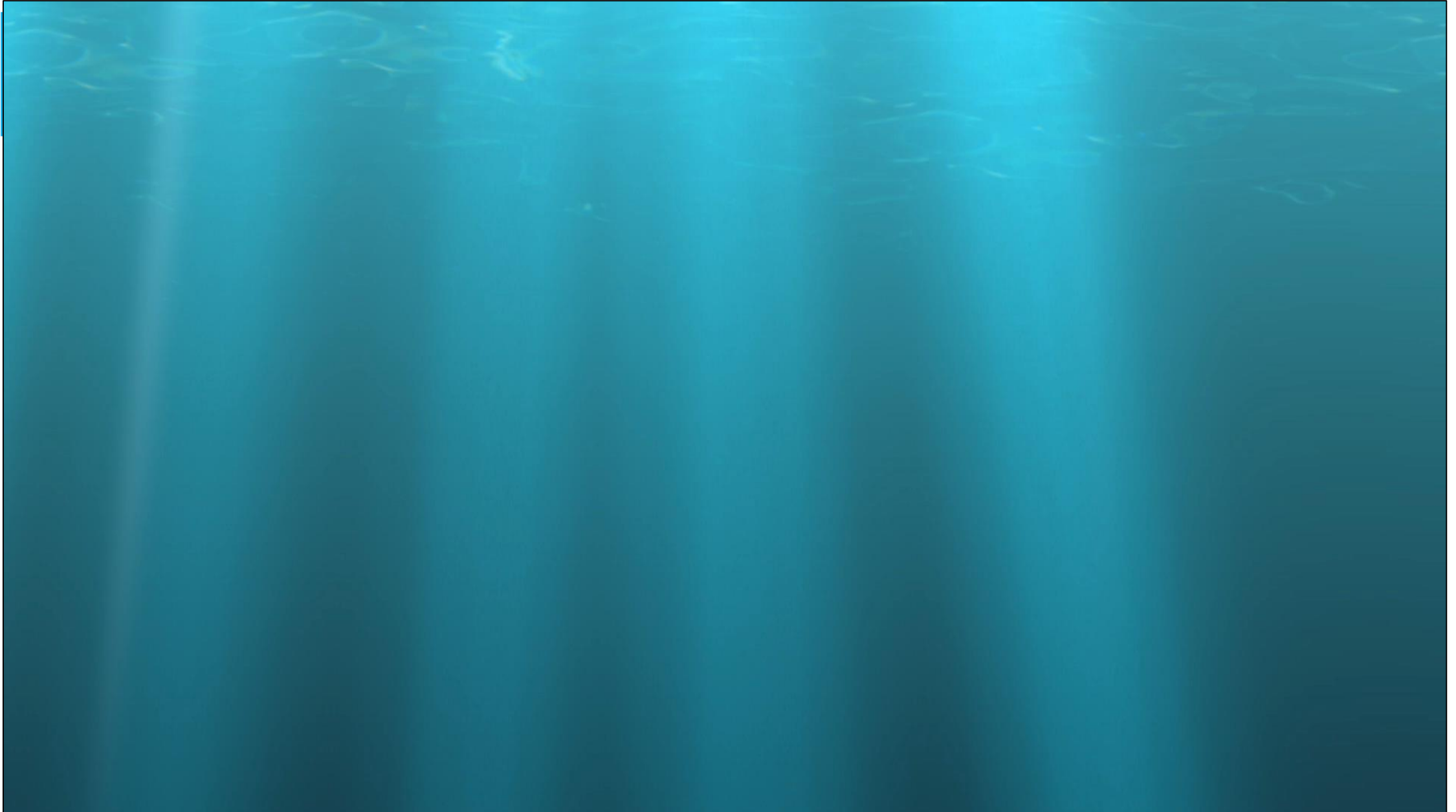
- ❖ Make sense of problems and persevere in solving them.
- ❖ Reason abstractly and quantitatively.
- ❖ Construct viable arguments and critique the reasoning of others.
- ❖ Model with mathematics.
- ❖ Use appropriate tools strategically.
- ❖ Attend to precision.
- ❖ Look for and make use of structure.
- ❖ Look for and express regularity in repeated reasoning.

SUPPORTING ENRICHMENT FOR ALL STUDENTS

Academic development, intellectual growth, and personal excellence within a context that supports:

- ❑ Social/emotional development
- ❑ Development of strong habits of mind/growth mindset to support long-term success and excellence with increasing levels of challenge

VIDEO: *SCHOOLWIDE ENRICHMENT FOR ALL*



ADDITIONAL RECOMMENDATIONS: LONG TERM CONTINUOUS IMPROVEMENT

- ❖ Maintain strong professional development in math
- ❖ Continue professional development in differentiation
- ❖ [K-5] Add monthly/quarterly stand-alone data meetings for advanced student focus. Include gifted coordinator to consult on data, goals and practices (Currently addressed through regular team data meetings)
- ❖ [6-12] Consider requirement for remediation block/mini-block at secondary level
- ❖ Maintain team/development focus on the core questions of a PLC*

NEXT STEPS IN COMMUNICATION:

- Math Parent Information Night: May 30th, 2018
- District letter updating parents about improvements in design of instruction.
- Updated parent information on district website