



Mountain View
Whisman
School District

Mathematics Update

March 1, 2018





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Mathematics Standards

California Common Core State Standards - Mathematics (CA-CCSSM)

California Common Core State Standards for mathematics - adopted in August 2010

- Includes Standards for Mathematical Practice (the same at each grade level) and Standards for Mathematical Content (different at each grade)

The standards are based on three major principles

- Focus: Teachers place strong emphasis where the standards focus
- Coherence: The standards are based on a progression of learning and are designed to help teachers connect learning within and across grades
- Rigor: requires that conceptual understanding, procedural skill and fluency, and application be approached with equal intensity

The standards adopted in 2010 included California specific standards

Old Standards vs. New Standards

Old California Standards	New California Common Core Standards
Mille wide, inch deep	Fewer Standards that go deeper
Middle School Progression: 6 th grade math, Pre-Algebra, Algebra I	Middle School Progression: 6 th math, 7 th grade math , 8 th grade math (Algebra ! becomes a 9 th grade course) - Many of the skills from the old Algebra 1 course pushed into 8th grade math and the 8th grade course is considered more rigorous than the old Algebra ! course
Due to overlap of standards, some students able to accelerate and get to Geometry in grade 8 by skipping 6th grade math	Less overlap in standards. Standards build year to year. Prevents the skipping of levels
California Standards Tests (CST) mainly assessed recall and basic application of skills Mountain View Whisman School District	California Assessment of Student Performance and Progress Assessments assess students' ability to think mathematically and apply skills in varied circumstances as well as basic skills

California Mathematics Framework

A new Mathematics Framework was adopted on November 6, 2013

- The purpose of the framework is to support implementation of California's standards for mathematics.
- When the Framework was adopted the standards were also updated to mirror the original Common Core Standards
- Grade-level and course-level chapters provide examples of what standards-based instruction and learning look like in Transitional Kindergarten through - Calculus and Probability and Statistics



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Mathematics Programming

Mathematics Programming History

2013-14:

- After the adoption of the Math Framework, teachers, coaches, and administrators from MVWSD, Los Altos, and the Mountain View Los Altos Union High School District collaborated to develop new math pathways
 - The new Algebra I is more advanced than the previous course.
 - Acceleration pathways must now include an additional course - 8th grade math
 - Acceleration requires compacting, but not skipping content
 - MVWSD and Los Altos have the same pathways, although MVWSD opted for two periods of math for two years to fill the gaps for students transitioning to new standards
- The District added a middle School math coach to
- support to transition to the new standards

Mathematics Programming History

2014-15:

- New math pathways were implemented
- Math Task Force convened to review and adopt new math materials
- **May 2015:** Eureka Math adopted for grades Transitional Kindergarten

Grade 8 including Algebra 1 and Geometry

2015-16:

- Mistral Math Task Force convened to review and
- adopt new math materials
- **May 2016:** Mistral adopted Go Math for grades K-5

2016-17: Two periods of math were kept in place due to the implementation of Teach to One

2017-18: Two periods of math were kept in place due to the possible change in the middle school schedule

2017-18: Approved a new middle schedule and revised pathways for implementation in 2018-19

Mathematics Professional Development

Summer 2015: 2 days of math content training and one one day of planning (optional with incentive) for K-2 and 3-5 teachers with a focus on:

- Instructional shifts and Mathematical Practices
- Understanding the Eureka Math modules and mathematical models
- Understanding the progression of the standards from elementary school and beyond

Summer 2015: Professional Development on the Eureka Math curriculum for K-8 teachers

Summer 2016: Professional Development - Understanding mathematical mindsets for grades K-5

Summer 2017: New K-5 and 6-8 teachers offered two days of Eureka math training in summer

Fall 2017: After school refresher Eureka math training offered as a 4-part series for K-5 teachers



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Elementary Programming

Elementary Programming

The TK-5 program lays the foundation for higher levels of math with a focus on the following domains:

- **Transitional Kindergarten: Eureka Math, A Story of Units, Great Minds Publishing**
 - Counting and Cardinality
 - Operations and Algebraic Thinking
 - Measurement and Data
 - Geometry
- **K-5: *Eureka Math, A Story of Units, Great Minds Publishing***
 - Counting and Cardinality (Kindergarten only)
 - Operations and Algebraic Thinking (K-5)
 - Number and Operations in Base Ten (K-5)
 - Number and Operations - Fractions (3-5)
 - Measurement and Data (K-5)
 - Geometry (K-5)

Elementary Programming

Elementary schools supplement Eureka Math with the following:

Spatial-Temporal Math (ST Math)

- Online, neuroscience-based mathematics instruction with visual animations and game-based learning
- Students initially complete animated **math** puzzles and games without language and mathematical symbols.

ZEARN

- Provides online Common Core aligned math lessons, personalized to individual learners, and based on Eureka Math/Engage New York.
- Lessons focus on three critical components: deep understanding, fluency, and problem-solving.

Each elementary school has an instructional coach to support improving instruction in content areas



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Middle School Programming

Middle School Programming

The 6-8 program builds on the foundation for higher levels of math with a focus on the following domains:

- **6-8 Eureka Math, A Story of Ratios, Great Minds Publishing**
 - Ratios and Proportional Relationships (6, 7)
 - Expression and Equations (6-8)
 - The Number System (6-8)
 - Statistics and Probability (6-8)
 - Geometry (6-8)
 - Functions (8)
- **Algebra 1: *Eureka Math, A Story of Functions*, Great Minds Publishing**
 - Functions
 - Algebra
 - Statistics and Probability
- **Geometry: *Eureka Math, A Story of Functions*, Great Minds Publishing**
 - Geometry

Middle School Programming

- Middle school is where math instruction shifts in order to prepare students for high school
- MVWSD currently offers three math pathways for students
- Students are placed into math pathways based data from District and state assessments.
- All students have the opportunity to adjust their pathway at the end of each year, which includes accelerating to a more challenging pathway or moving to a course better suited to their abilities.

Middle School Programming

- The middle schools share a math coach to support teachers in improving instructional practices
- The math coaches from MVWSD, Los Altos, and the Mountain View Los Altos Union High School District meet monthly to collaborate around math courses and improving the transition process for students
- MVWSD, Los Altos, and the Mountain View Los Altos Union High School District have a common Algebra 1 final assessment and are working on one for Geometry



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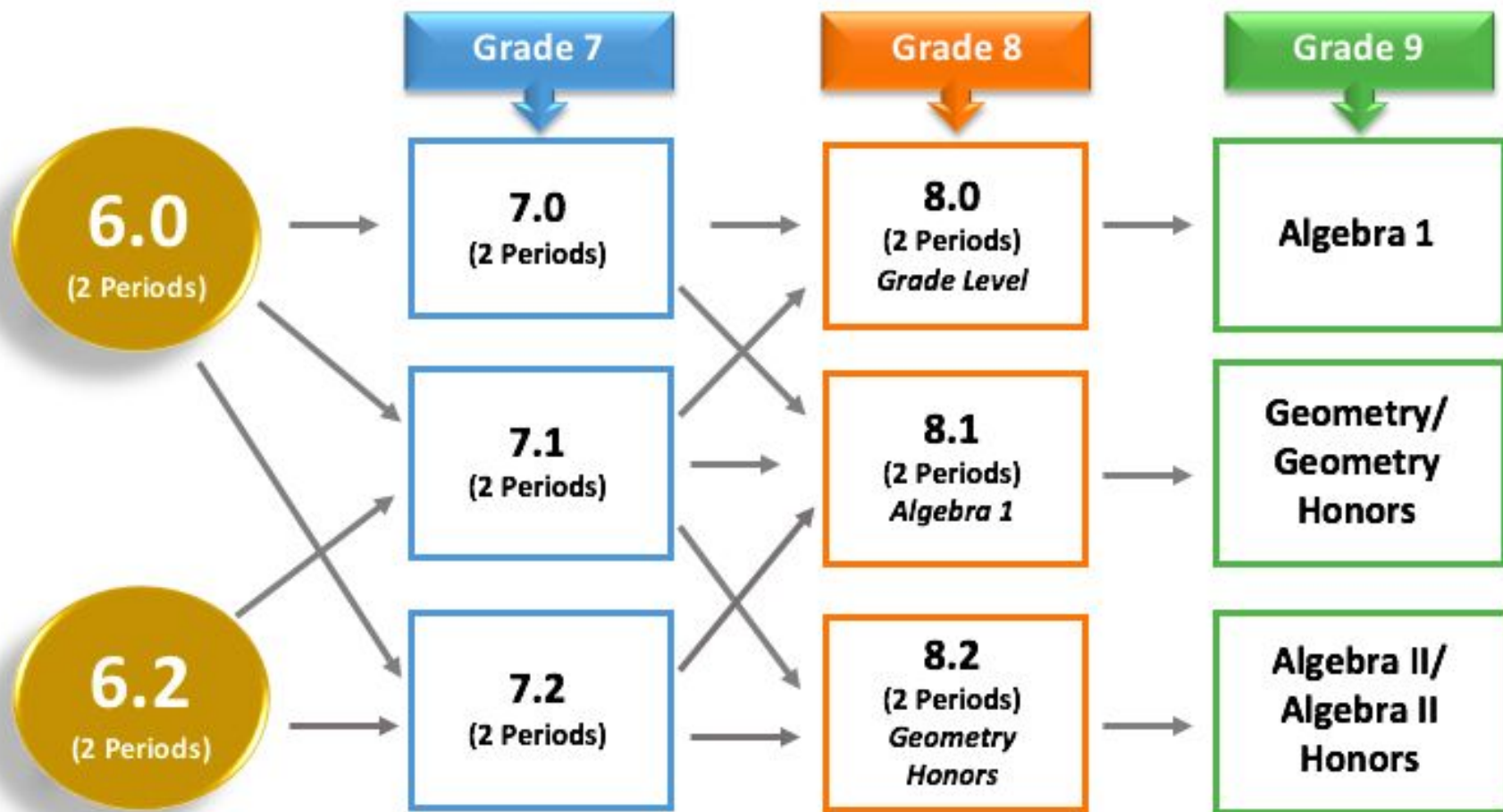
Middle School Assessments and Placement

Math Pathway Assessments

Grade Level	Assessments
5th Grade	5th Grade Math Placement Test, 2nd trimester benchmark score, and CAASPP
Math 6.0	6.0 end of course, 6.2 end of course, and CAASPP
Math 6.2	6.2 end of course and CAASPP
Math 7.0	7.0 and 7.1 end of course and CAASPP
Math 7.1	7.1 end of course, 7.2 end of course and CAASPP
Math 7.2	7.2 end of course and and CAASPP
Math 8.0	3 District - Common Final Assessment
Math 8.1	3 District - Common Final Assessment
Math 8.2	3 District - Common Final Assessment (in progress)

Math Pathways

17/18

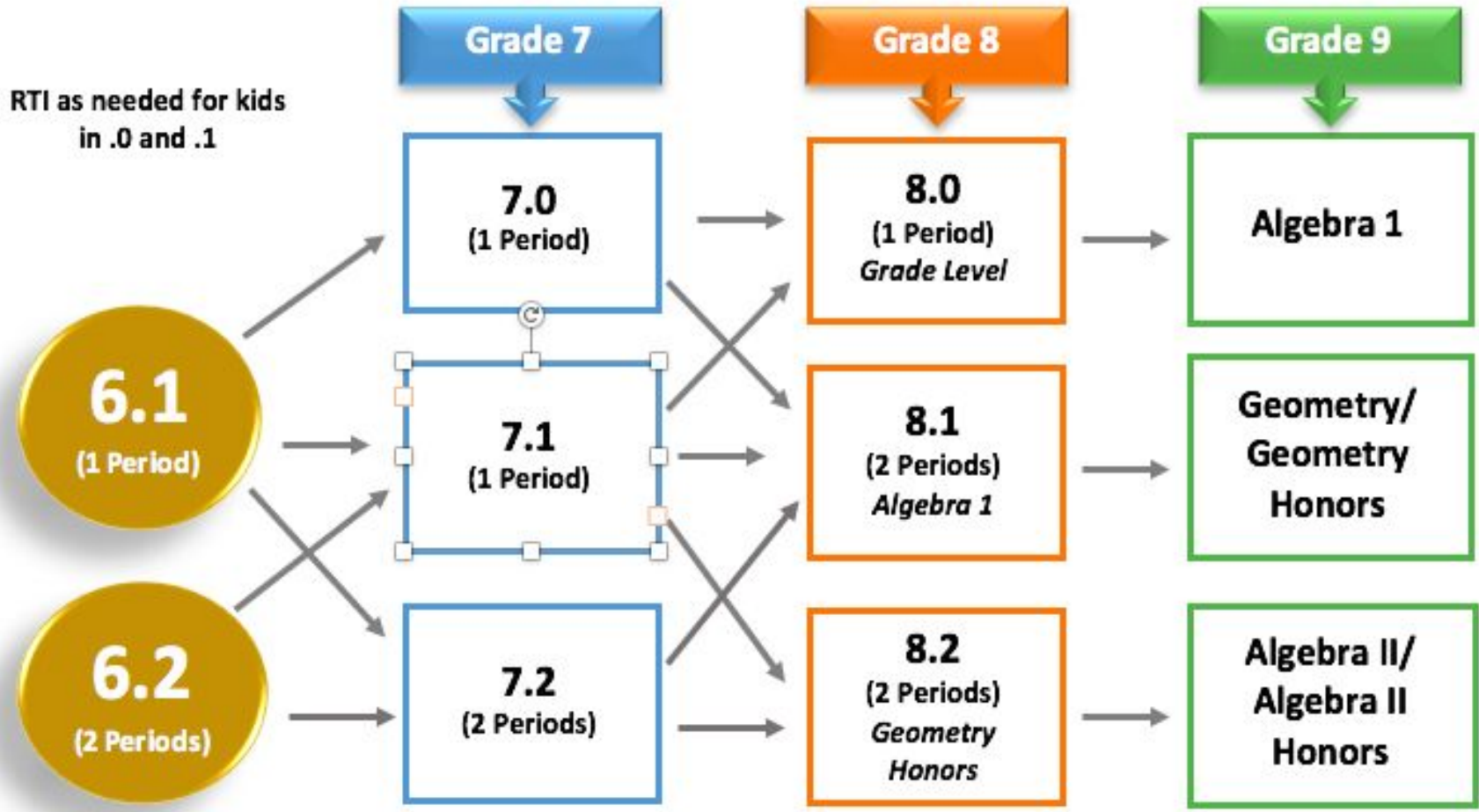


Math Pathways in the New Schedule

- New schedule provides opportunity to revise math pathways
- Feedback from staff, students and parents
 - Math teacher input
 - Thought Exchange results
- Held meetings in January/February with District and site administrators, math department chairs, and math coach to refine pathways
 - Reviewed pathways of surrounding Districts including:
 - Los Altos
 - Palo Alto
 - Cupertino
 - Sunnyvale
 - Saratoga
 - Santa Clara

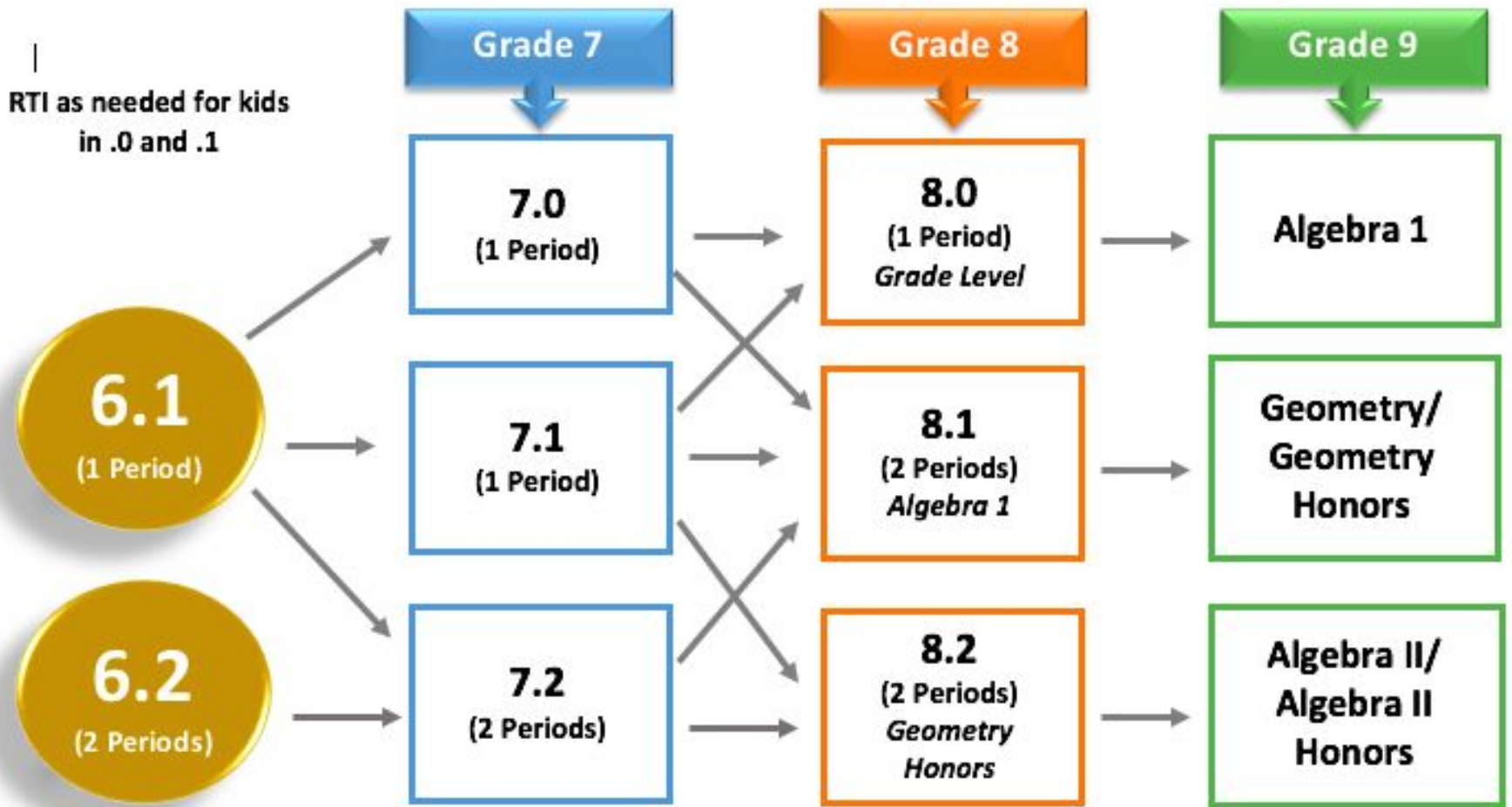
Math Pathways

18/19



Math Pathways

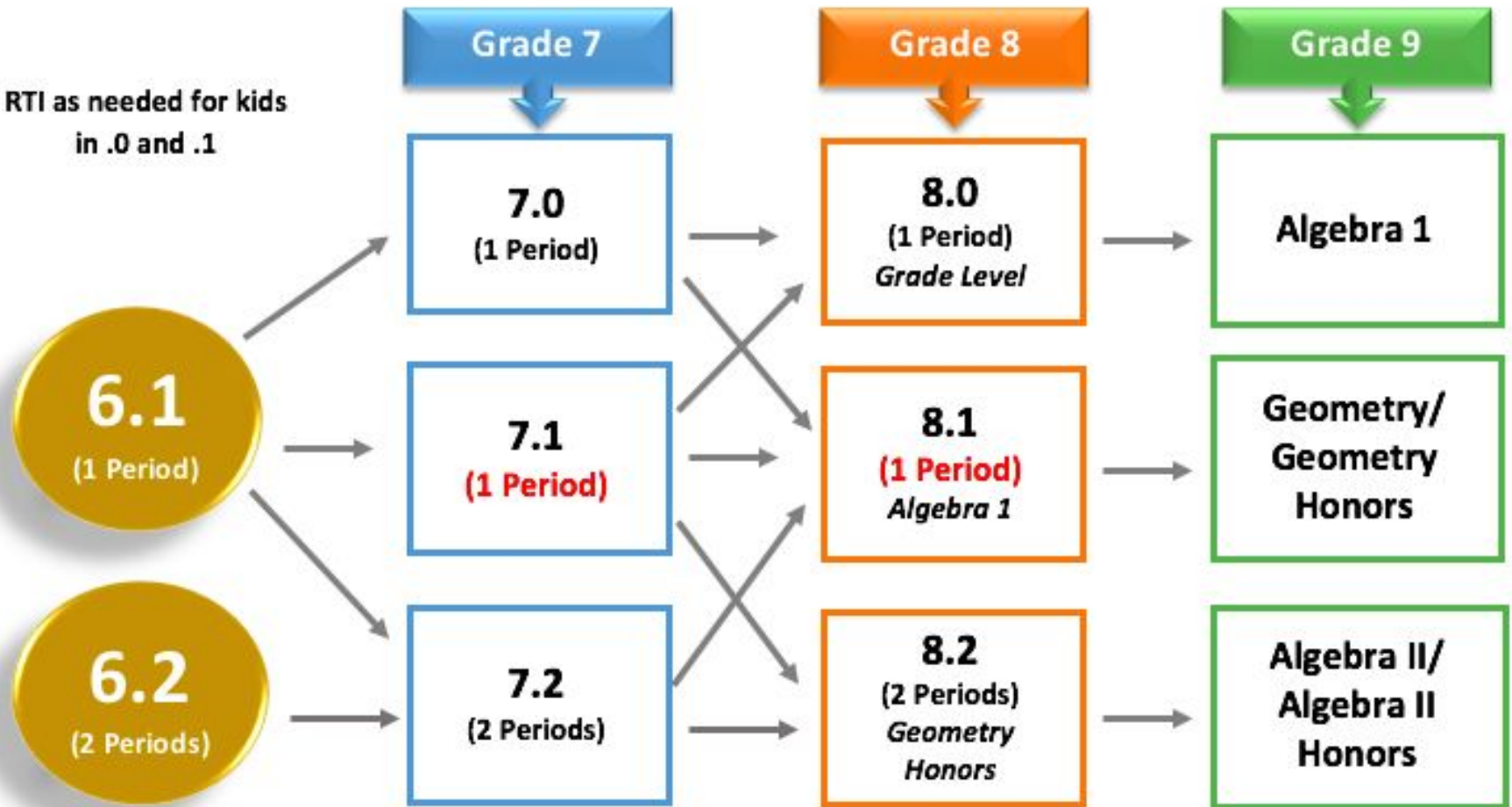
19/20



Math Pathways

20/21

RTI as needed for kids
in .0 and .1



New Pathways - Highlights

- Keeps three math pathways to meet needs of all students
- All students enter 6th grade on track to completing Algebra 1 in 8th grade
- Keeps flexibility for students to move into or out of pathways based on data
- Reduces double math for 6.0 and for 6.1 over the course of 3 years
- Keeps double math for students in most accelerated track to Geometry (5 years of math in 3)
- Response to Intervention can be provided for students and used to fill gaps in knowledge instead of just re-teaching same content



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Things to Consider

Things to Consider

- Continued professional development is needed for teachers at all levels, but especially elementary teachers
 - Elementary teachers must be experts in English Language Arts, Math, Science, History-Social Science, English Language Development while middle school teachers are content experts in one subject
 - Elementary math lays a foundation for success in higher levels of math
 - The District has 6 dedicated days for professional development each year
 - The District is in year 1 of a 3 year implementation of the Sheltered Instruction Observation Protocol

Things to Consider

- There will be an adjustment period for the new middle school pathways
- One school has a different curriculum and there is an adjustment for students transitioning to the middle school
- In 2020, the cycle starts over again as the state will update the mathematics framework and new curriculum will be available for possible adoption



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Next Steps

Next Steps

- Continue to provide professional development to all teachers
- Hire an elementary math coach in 2018-19 to:
 - develop and provide professional development
 - train the District elementary coaches
 - work with teachers to continue to improve instruction
- Implement the new math pathways at middle school
- Review and purchase supplemental intervention materials for the response to instruction math classes
- Continue to work with the Los Altos and the high school district to align instruction and course assessments
- Consider writing a District math policy