

**K-12 Mathematics Program External Review  
Final Report**

Weston Public Schools  
Weston, MA

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**Report of the K-12 Mathematics Program External Review**  
Weston Public Schools, Weston, MA

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## Executive Summary

The Weston Public Schools have a strong mathematics program that prepares many children well for college and career. During the site visit, the Committee visited classrooms at every grade level and observed teaching, learning, and assessments. In addition, we reviewed curriculum materials, which include a commercial textbook as a foundation in elementary, and home-grown curriculum in the middle and high schools. We met with stakeholders from across the district including teachers, administrators, school committee members, parents, and community members. In all of our observations and interactions we found there to be a positive tone to the feels expressed about the K-12 mathematics program.

The committee noted the strength of the curriculum, specifically the Math Journey curriculum documents at the elementary level and the home-grown curriculum materials at the secondary level. These are outstanding sets of materials. At all levels the curriculum demonstrates a deep and clear understanding of the Massachusetts Curriculum Frameworks for Mathematics (2017) as well as a deep understanding of the mathematics. The K-12 curriculum demonstrates a clear vision with regards to the developmental progression of concepts and a thoughtful sequence of courses. The district should continue to demonstrate a commitment to this curriculum and implement it with fidelity.

The Weston Public Schools have a very talented and dedicated group of teachers and instructional leaders. It is clear that teachers are experienced and skilled in their execution of the mathematics program. Administrators communicated their trust in the faculty as well as a commitment to supporting the mathematics program and working to meet the needs of all learners. The district needs to continue to support the faculty with professional development and resources to improve teaching and learning.

It was clear through the charge from the School Committee, our analysis of MCAS data, and discussions with parents, teachers, and administrators, that while the mathematics program is strong and meets the needs of the general population, it does not work for all students. There are achievement gaps that need to be addressed. There is work to be done to improve differentiation and meet learners where they are in order to help them be successful. With this ultimate goal in mind, the Committee makes the following recommendations:

1. ***Differentiation to meet the needs of all learners.*** The committee recommends a commitment to math workshop as a means of differentiating instruction at the elementary (and possibly the secondary) level. At the high school, courses need to include more opportunities for all learners to be engaged in real-world problems through the use of low-floor, high-ceiling tasks. In addition, the Committee suggests a commitment to professional development specifically geared to differentiation in mathematics. Finally, in order to meet the needs of all learners, specifically the sub-groups identified by achievement gaps, the district should commit to professional development and a plan to implement Culturally Relevant Pedagogy at all levels.

2. ***Math specific coaching and instructional support.*** The committee recommends that curriculum fidelity and differentiation be improved at the elementary level by increasing the number of math coaches and providing instructional support in the form of peer observations for high school teachers. A commitment to math coaching and math-specific instructional support at all levels would provide the individualized professional development teachers need to improve their practice and meet the needs of all learners.
3. ***Outside Professional Development Opportunities for Teachers.*** The mathematics program in Weston is strong and the faculty and staff have demonstrated their expertise and skill in both the design and delivery of instruction. There are good ideas, strong visions, and effective practices. But, there is always room to learn more. Teachers at every level, K-12, would benefit from engagement in the math community beyond Weston that brings in a new voice, a fresh perspective, and the opportunity to share their ideas and receive critical feedback to continue to make their ideas better.
4. ***Clear and Consistent Communication.*** Families and the community need accurate information about the mathematics program in the Weston Public Schools. The Committee observed that many stakeholders experience a communication breakdown between schools and families that is problematic for all parties involved. During the Committee’s visit, many parents and community members reported information that directly contradicted information presented by teachers and school staff as it related to the mathematics program. A strong program is rooted in clear and transparent goals and practices. All stakeholders need to make a commitment to clearer communication to ensure the continued success of the mathematics program in Weston for all students.

The Committee also notes the following suggestions for enhancements and exploration.

1. **Collaborative white boards for all math classrooms at all levels.**  
The committee believes that this resource should be available beyond the middle school, particularly in the high school classrooms. The benefits of this physical resource could have a significant impact on the teaching and learning at all levels, particularly in opening up spaces for collaboration, discussion, and data-driven instructional decisions.
2. **Time on Math**  
At all levels, the Committee suggests an investigation into whether the current schedules fit the needs for mathematics teaching and learning in the district. While the Committee recognizes that course schedules involve many moving parts, it is recommended that the district consider how the current schedules at the elementary, middle, and high schools are impacting mathematics instruction.
3. **Integration between STEM subjects**  
In the Committee’s visit, there were many district and community stakeholders who spoke to a need for a greater integration of mathematics and science topics. While this topic is not a main focus of this document, it is suggested that explorations into the integration of math and science continue.

## Introduction

### Purpose

The Weston Assistant Superintendent for Curriculum and Instruction, Dr. J. Kimo Carter, invited a committee of outside consultants to visit the Weston Public Schools on February 25 and 27, 2020 to review the K-12 mathematics program in the Weston Public Schools. The Committee was composed of college mathematics education and statistics faculty; K-12 faculty; mathematics coaches; and curriculum developers. The Committee was charged to address fourteen questions from the School Committee after their review of the 2019 Self-Study conducted by Weston Public Schools faculty and staff. This report provides the Committee's responses to the questions it was charged to address, as well as commendations and recommendations.

### Composition of External Review Committee

The External Review Committee was composed of five members who represent a cross-section of expertise in K-12 mathematics education. Committee members included K-12 mathematics teachers; college mathematics education and statistics faculty; mathematics curriculum developers; and mathematics coaches. This group brings decades of experience in mathematics education to this exercise.

The External Review Committee Members:

- Ellen Brezinksy, Math Teacher, Natick High School
- Kate Coleman, Senior Instructional Designer, Education Development Center
- Katherine Ariemma Marin, Ph.D. (Chair), Assistant Professor of Education Studies, Stonehill College
- John McKenzie, Ph.D., Professor Emeritus of Statistics, Babson College
- Rebecca Poulo, Math Curriculum Leader and Math Coach, Wayland Middle School

### Committee Charge

The Committee was charged with responding to the following questions:

#### *Curriculum*

*Question 1:* Should we investigate research-based elementary math programs to ensure continuity of content and practice across and within grade level?

*Question 2:* How do we better connect mathematical conceptual understanding with the real-world experiences of students, especially in the area of understanding, evaluating, and interpreting data?

*Question 3:* What are the strengths and weaknesses of our home-grown secondary math curriculum?

*Question 4:* Do the current high school course offerings support the needs of all students?

*Question 4a:* Given declining enrollment, should the high school weave in semester-based elective courses?

*Question 4b:* How does the trajectory of the math curriculum match that of the science department?

*Question 5:* How do we better integrate computer science content and skills into both the mathematics and overall curriculum?

### ***Instruction***

*Question 6:* How can we better differentiate instruction to meet the needs of all student readiness levels, interests, and learning styles?

*Question 6a:* While we recognize that external enrichment programs are a valued tool to challenge interested students, are we differentiating appropriately in honors/accelerated courses to meet the needs of students who have not received external math support/training?

*Question 6b:* Do we appropriately challenge students who move from honors to CP level in secondary courses?

*Question 7:* How do other communities/private schools differentiate instruction at the elementary level, including leveling in upper elementary?

*Question 8:* How do we support students and at the same time develop independence, advocacy, and agency in both college prep and honors courses?

### ***Assessment***

*Question 9:* Do our elementary and secondary curricula appropriately prepare students for MCAS?

*Question 10:* “We believe that assessments should not only provide the teacher with valuable feedback into student learning, but they should also serve as a learning opportunity for students. Assessments should also be a reflection of our belief in promoting a growth mindset.” How are we meeting this goal?

### ***Access and Equity***

*Question 11:* What recommendations can be made to make a significant impact on our achievement gap?

*Question 12:* What structures are in place for supporting fluidity between levels at the middle and high school?

### ***Professionalism***

*Question 13:* What recommendations might be made for enhancing and improving professional development opportunities?

### ***Community Outreach***

*Question 14:* How do we better partner with all families to support student engagement in mathematics?

### ***Methodology***

This report and its conclusions are based on a review of the following:

- 2019 Self-Study Report
- Meetings with parents, teachers, principals, administrators, and students
- Classroom observations
- K-12 curriculum materials (including assessments)

- Policies and protocols for K-12 mathematics teaching and learning
- MCAS reports (including both aggregate and sub-group data)

### **Committee Site Visit Activities**

In the late Fall of 2019, Jim McLaughlin, 6-12 Mathematics Department Head and Tracy Manousaridis, Elementary Mathematics Specialist, contacted the committee members in order to build an External Review Committee. In January 2020, Dr. J. Kimo Carter contacted committee members to invite them to participate in a review of the Mathematics Program in the Weston Public Schools and provided the list of External Review Committee members and charge from the school committee. On February 13, 2020 Dr. Carter, Jim McLaughlin, and Tracy Manousaridis met with the committee chair to discuss the review process, the charge from the school committee, and the schedule for the site visit.

The committee visited the Weston Public Schools on Tuesday, February 25 and Thursday, February 27, 2020. The February 25, 2020 visit began with a welcome breakfast and discussion of the self-study and charge from the school committee attended by: Dr. J. Kimo Carter, Tracy Manousaridis, Jim McLaughlin, and members of the External Review Committee. Committee members then met with parents and community members in a Parent and Community Forum in the Field School Café. This presentation was accessible to community members in person and via an electronic meeting option, Zoom. The remainder of the day focused on mathematics teaching and learning in the elementary schools. The community forum was followed by classroom visits at all three elementary schools. Committee members visited K-5 classrooms at Field School, Country School, and Woodland School. The committee was accompanied by Tracy Manousaridis on these visits, but given a list of classrooms to visit and the freedom to move in and out of classrooms at their discretion. Classroom visits were followed by lunch with district administration including: Superintendent Midge Connolly, Assistant Superintendent Kimo Carter, Director of District Advancement Amy Kelly, and Elementary Principals, Jen Faber, Erin Maguire, and Dan Green. Following lunch, the committee had time to review curriculum materials with Tracy Manousaridis available to answer questions and provide additional information as needed. The day concluded with an Elementary Teacher Forum in the Field School Library. Approximately 20 teachers from the three elementary schools attended the forum to discuss teaching and learning in elementary mathematics in Weston.

The February 27, 2020 visit was focused on teaching and learning in middle and high school mathematics in the Weston Public Schools. The day began with breakfast and discussion with Assistant Superintendent Kimo Carter, Jim McLaughlin, Tracy Manousaridis, and the committee. Following breakfast, the committee met with members of the Weston School Committee: John Henry, School Committee Chair and Danielle Black, Vice Chair. Next, the committee met with the Weston High School Principal, Anthony Parker and Weston Middle School Principal, John Gibbons. Next, the committee had time to visit classrooms at Weston Middle School and Weston High School. A schedule of classes was provided at each school and committee members were able to visit classrooms at their discretion. The committee saw classes in all grades 6-12 and across levels (CP, Honors, AP). In classroom visits, committee members were able to talk with teachers, students, and support staff and observe mathematics teaching and learning. Following a classroom visits, the External Review Committee met with Jennifer Truslow, Director of Student Services. Then the Committee had a lunch discussion with middle

and high school mathematics teachers. In this meeting, teachers discussed teaching and learning, the home-grown mathematics curriculum, and professional development opportunities. The day concluded with the committee convened to review, discuss, and begin to write together. Jim McLaughlin and Tracy Manousaridis were available to provide context, information, and answer questions. Following the site visit, members of the external review committee compiled notes and detailed responses to the questions in the School Committee charge. Findings were compiled in shared documents and discussed with the committee chair via email and telephone. The members of the committee have been in communication with one another to share findings and collaborate on the production of this report. The chair provided drafts of this report to committee members to ensure that this report accurately represents their findings and conclusions. This is the final report of the External Curriculum Review Committee.

### **Limitations**

The External Curriculum Review Committee would like to acknowledge the difficulty that a two-day site visit provides a snap-shot of mathematics teaching and learning in general education settings in the Weston Public Schools. While we are confident that we saw an accurate cross-section of K-12 mathematics education in Weston, we know that we did not see everything and that generalizations will unintentionally leave some information out of our reporting. However, we present this report with confidence knowing that we have reviewed copious amounts of information, met with a wide array of stakeholders, and visited a diverse sample of classrooms.

## Findings

### *Common Themes*

The External Curriculum Review Committee identified several themes that emerged across the elementary, middle, and high school mathematics programs. These include:

- A strong curriculum featuring a completely home-grown program in middle and high school and a well curated set of instructional materials from a variety of well-chosen sources in the elementary schools. The programs at all levels demonstrate a deep and clear understanding of the Massachusetts Curriculum Frameworks for Mathematics (2017) as well as the mathematical content of school mathematics. The K-12 curriculum demonstrates a clear vision with regards to the developmental progression of concepts, thoughtful sequence of courses, a leveled set of courses at the middle and high school that demonstrate a belief in the abilities of all students, and robust offerings for all students at the high school level.
- A belief in and communication of the growth mindset model at all levels. In the elementary schools, lessons about growth mindset and its development are integrated throughout the year-long curriculum at each grade level. At the elementary and middle schools, there are classroom and hallway displays featuring growth mindset messaging. At the high school, the reboot lessons and quizzes as well as the test retake policy are clear indications of the department's belief in growth mindset and its importance for the teaching and learning of mathematics.
- Weston teachers are, as a group, skilled veterans and this shows in their instruction. At all levels, it is clear that the teachers are thoughtful, experienced, and hands on with regards to the curriculum and its delivery.
- The mathematical leadership at all levels is outstanding and plays a large part in the success of the K-12 mathematics program in Weston. The Elementary Math Specialist and 6-12 Department Head are outstanding curriculum and instructional leaders who are the backbone of the program's success. The teachers clearly respect and appreciate them and the work that they do. It is clear that the teachers trust them and this enables change and progress to happen with regard to curriculum and instruction.
- The use of technology is woven into the curriculum in thoughtful and effective ways. Students are not engaged in technology for technology's sake, but rather it is used in the classroom when it enhances and improves the learning opportunities for students.
- Weston has a successful math program for most students, however, there are significant achievement gaps for specific subgroups. The issue of achievement gaps is well known in the community and it needs to be addressed with a clear and robust plan to improve differentiation at all levels.
- The approach to leveling is developmentally appropriate and considers the known critiques of tracking and works to avoid those pitfalls. In grades K-5 students are not leveled, an approach that matches the current recommendations of math education

researchers. In middle school, there is a shift to leveled courses with only two levels. This is a well-balanced approach to leveling and demonstrates an understanding that traditional models of tracking can be oppressive and detrimental to some students' success, specifically students with disabilities and students of color. The ability to move between levels is available to all students, given a set of criteria and work, and students are not "stuck" in a particular level once they are placed within it.

## **Commendations K-12**

The Committee finds the mathematics program in the Weston Public Schools to be very strong and would like to highlight the following elements:

### **1. Curriculum**

The Curriculum developed by the Weston Public Schools is strong. In the elementary grades the Math Journey documents are exemplary. They feature a commercial curriculum, *Think Math!*, as a foundation and supplement it with a variety of well-chosen resources to create a robust mathematics program. The Math Journeys are constructed to support a math workshop model. Growth mindset lessons are infused into each unit of study throughout the year. At the middle and high school, the home-grown curriculum is strong and engages students in both the mathematical content and the standards for mathematical practice in all levels and courses. The course offerings at the high school are engaging, diverse, and appropriate for a variety of learners.

### **2. Teachers and Support Staff**

The faculty and staff of the Weston Public Schools are excellent. Teachers and staff in every classroom the committee visited were actively engaged with students at all levels. Teachers were involved in discussions with students, either in large or small groups, in every class we visited at every level. This discourse is an important element of a successful math program.

### **3. Mathematical Leadership**

The leadership provided by Tracy Manasouridis, Elementary Math Specialist and Jim McLaughlin, 6-12 Department Head is outstanding. The success of Weston's math program is a testament to the hard work and leadership of this team.

### **4. Resources**

The resources available to teachers and students in the Weston Public Schools are outstanding. Funding for materials and subscriptions is readily available. In the middle school, the Committee was impressed by the collaborative white boards in each classroom and the ways in which they were being utilized by teachers and students to enhance all students' learning. We highlight these white boards as an example of how a group of teachers had an idea, generated a request for resources, and then put them to outstanding use in the classroom.

### **5. Professional Time**

Weston Public Schools teachers get a significant amount of professional time in each school day and week. This time allows teachers to engage in important professional

activities that serve their math instruction well. Professional time allotments allow for common planning time, regular math department meetings for grade 6-12, team time, as well as ample planning time each week.

## **Suggestions for Enhancement and Exploration**

### **2. Collaborative white boards for all math classrooms at all levels.**

In the middle school, every classroom is equipped with white boards covering each wall. Funding for this project originally came from grant funding. The impact of these white board walls is the increased collaboration between students, the ability to physically highlight the work of students, increased discussion, ability to leave work visible for later discussions, and opportunities for teachers to clearly see the work of all students during class to inform next instructional steps. The committee believes that this resource should be available beyond the middle school, particularly in the high school classrooms. The benefits of this physical resource could have a significant impact on the teaching and learning at the high school level, particularly in opening up opportunities for collaboration, discussion, and data-driven instruction in the high school courses. At the elementary level, some classrooms had similar white board walls (e.g., in the Field School). Expanding the presence of this resource would positively impact the teaching and learning at all levels.

### **3. Time on Math**

The Committee notes that the time allotted for mathematics across grades K-12 in the Weston Public Schools is adequate. However, the Committee encourages the district to look at the effectiveness of the time allotted and consider whether more time is needed at each grade band. While the Committee recognizes that course schedules involve many moving parts, it is recommended that the district consider how the current schedules at the elementary, middle, and high schools are impacting mathematics instruction. At all levels, the Committee recommends an investigation into whether the current schedules fit the needs for mathematics teaching and learning in the district.

### **4. Integration between STEM subjects**

In the Committee's visit, there were many district and community stakeholders who spoke to a need for a greater integration of mathematics and science topics. While this topic is not a main focus of this document, it is suggested that explorations into the integration of math and science continue. The Committee noted opportunities for this work that are already in place and where this exploration has begun, such as J-Term at the Middle School and June Academy at the High School. The purpose of J-Term and June Academy is not explicitly math and science integration; however, the Committee notes many opportunities for such integration in these pre-existing programs. The Committee encourages district staff to consider other pre-existing programs that could explore opportunities for interdisciplinary learning, such as the Fractal Fair at the High School, which could be expanded to include students in the CP level courses as well as the Honors level courses.

## Recommendations

The Committee offers the following recommendations for opportunities to further strengthen the teaching and learning of mathematics in the Weston Public Schools:

### *1. Differentiation to meet the needs of all learners*

In meetings with all stakeholders, the Committee heard a clear concern about the district's current ability to meet the needs of all learners and address achievement gaps. It is clear in the MCAS data as well as in reports from administrators, teachers, and parents that while the math program in Weston is strong, it is not adequately meeting the needs of all learners. While, in the aggregate, students are meeting or exceeding grade level expectations, there are smaller sub-groups of students who are not meeting grade level expectations and therefore whose needs are not being met, specifically students with disabilities and African American/Black students (as reported in MCAS data). In order to meet the needs of all learners and address the achievement gaps for specific sub-groups, the Weston Public Schools need to make a commitment to improving their ability to deliver differentiated instruction. In addition to supporting students not meeting grade level expectations, differentiation is also needed to address the needs of students who are far exceeding grade level expectations. Differentiation is about meeting the needs of all learners at all levels. In addition, it is often found that when instruction is differentiated to better support the needs of specific groups of students, all students benefit. An investment in developing pedagogy and curriculum that is differentiated for all learners is a worthy investment on behalf of all students.

The Weston Public Schools have made a series of steps in an attempt to support under-achieving groups of students and differentiate instruction. Among these are cohesive curricular materials at all levels (e.g., Math Journeys in elementary grades, cohesive connections across levels at each grade level in the middle school), the integration of RTI (Response to Intervention) into school schedules, and offering Relevant Classroom training to teachers throughout the district. These are strong first steps, but in order to truly impact teaching and learning for all students, more work needs to be done.

**Differentiation in Grades K-5.** In the elementary grades, a commitment to the math workshop model is recommended. A math workshop model (Newton, 2016) is data-driven and built around independent and small group learning opportunities tailored to individual student needs. In this pedagogical approach, teachers use data to form flexible groups, assign differentiated tasks, support students in the development of fact fluency, and provide students with scaffolded support individualized for their specific needs. Currently, the commitment to and implementation of math workshop is inconsistent across the elementary schools. Despite the structure of the Math Journey documents to support the use of a math workshop model, not all teachers are trained to implement it in their classrooms. It is imperative that all elementary school teachers receive professional development and scaffolded support to implement the math workshop model in their mathematics classes. The current curricular documents are designed with math workshop in mind, however, there are many elementary teachers who need support in using them in this way.

**Differentiation in Grades 6-8.** There is evidence at the middle school level that differentiated instruction is carefully planned and executed. The close alignment between levels at each grade level demonstrates an understanding of how the same mathematical objective can be achieved in a variety of different ways and these ways can be individualized to meet the needs of learners. The middle school can and should be used as a model for other grade levels about how to differentiate within and across levels to support all learners to meet the same mathematical objective.

**Differentiation in Grades 9-12.** There is concern in the community and by the Committee about a lack of differentiation in high school courses. Many community members discussed the Honors level as being very difficult and, in some cases, self-directed for students. While, in the CP level, it is reported that the work is “too easy” for many students, particularly those students who have moved into CP from the Honors level. It is clear that mathematics teachers are providing a lot of outside support to students with an open-door policy in the math office and students able to gain extra help and have questions answered by any math teacher who is available. This is a commendable level of service to provide, but this kind of support should be provided in the classroom through differentiated instruction. Within all levels of coursework, it was evident to the committee that there needs to be greater consideration of how to meet the needs of all students outside of coming for extra help.

Many stakeholders have addressed concern about the prevalence of extracurricular math programs (e.g., Russian Math) and tutors, which may widen the gaps in student achievement. Rather than disagree about the prevalence of this outside mathematics support, teachers need to find ways to accommodate all learners’ needs in the classroom and push students regardless of their achievement level. This means that teachers need to differentiate instruction for learners who are not meeting grade level expectations as well as those who are far exceeding grade level expectations (perhaps because of their work in a program like Russian Math). Increasing the frequency of open-ended, real world problems into math courses could be one way to approach this issue. A Three Act Task, for example, is a low floor, high ceiling task that is engaging for students at all levels and is easily differentiated. Direct instruction can be built into these tasks as a scaffolded support, as well as opportunities for the teacher to debunk student misconceptions and push students to think deeper, to ask a related question, or to extend an investigation further.

In order to address the achievement gap, teachers and administrators need to use pedagogical techniques that are appropriate for and specific to individual learners. The district’s investment in Responsive Classroom training is a good first step. However, in order to address the needs of sub-groups from specific racial groups, the district should consider a focus on Culturally Relevant Pedagogy. The elementary principals and Director of District Advancement noted that administrators had begun professional development around Culturally Relevant Leadership and hoped to bring Culturally Relevant Pedagogy training to the faculty as a phase two of this initiative. The Committee believes that the Weston Public Schools would benefit significantly from

professional development that would support the integration of Culturally Relevant Pedagogy into the teaching and learning of mathematics. If the district is truly committed to meeting the needs of all learners and closing achievement gaps, then they need to change their instruction to understand and fulfill the academic needs of all learners.

The Committee finds a commitment to differentiation to be a priority for the Weston Public Schools. This commitment could include the following: increased support and training in the use of math workshop in the elementary schools; significant work on the revision of high school courses to actively differentiate for learners at all levels; and training in Culturally Relevant Pedagogy with a goal to implement it at all levels. Each of the schools should have a math-related goal in its improvement plan to address this critical need.

2. ***Math specific coaching and instructional support***

The Committee observed that job-embedded professional development and instructional support specific to mathematics is limited in the Weston Public Schools. While there is exceptional leadership in mathematics provided by the Elementary Math Specialist and the 6-12 Department Head, there is limited job-embedded support for teachers. A commitment to math coaching and math-specific instructional support at all levels would provide the individualized professional development teachers need to improve their practice.

**Coaching for Grades K-5.** At the elementary level, teachers are supported in their mathematics teaching by the following individuals: Elementary Math Specialist, K-1 Math Interventionist, and Instructional coach. The teachers report, and the Committee concurs, that this is not enough. Currently, coaching is provided to elementary teachers by the Elementary Math Specialist (as part of her extensive job description), instructional coaches (not math specific) at each of the elementary schools, and a math coach assigned to grades 3-5. Instructional coaching that is not subject-specific will not improve teachers' ability to use the math curriculum with fidelity, to effectively use the math workshop model, to examine student strategies and determine next instructional steps, nor differentiate instruction and provide scaffolding to support students in meeting mathematical objectives. Math coaches have been proven to be a successful means of providing job-embedded, individualized professional development for teachers to improve mathematics instruction.

The Committee urges the Weston Public Schools to expand the current coaching model to include math coaches, with training and expertise in the teaching and learning of elementary mathematics, at each elementary school. These coaches would be able to provide the following supports to elementary teachers to improve the teaching of mathematics across grades K-5: mentoring and training for novice teachers and long-term substitutes; curriculum training and alignment of lessons to Math Journey documents; support with math workshop; model lessons; co-planning and/or co-teaching; student work/data analysis to inform differentiated instruction; and individualized support for teachers through the coaching cycle. Elementary teachers are not always (in fact they are most often not) extensively trained in teaching mathematics, nor do they feel that

teaching math is their strength. As a result, they often benefit from math-specific support from a colleague with expertise in mathematics like a math coach rather than generalized instructional support from a coach who may or may not have the relevant knowledge and experience in mathematics.

**Instructional Support for Grades 6-12.** The middle and high school faculty are supported by a strong instructional and curriculum leader: the 6-12 Department Head. As a member of the faculty with his own course load as well as a myriad of other leadership duties, the Department Head has limited capacity for coaching. At the secondary level, teachers have a demonstrated expertise in mathematics and often need less support than elementary teachers with the mathematical content. However, this does not make them immune to the need for instructional support and coaching. Math coaches are less prevalent in middle and high schools across the Commonwealth of Massachusetts than in elementary schools. However, many middle schools do have hybrid positions that include at least part time dedicated to math coaching. The Committee recommends the consideration of a dedicated, math-specific instructional support person at the middle school. This person could be a current middle school teacher who has a partial FTE allocated to the role of a middle school math coach or coordinator. This would provide building level support at the middle school and relieve some of the pressure on the Department Head. At both the middle and high school, peer observations could also be a way to provide instructional coaching specific to mathematics. Teachers who work together with a shared goal could observe one another, provide feedback, work together to solve a problem of practice, and support one another as they try new things in the classroom. This kind of peer support could go a long way in helping middle and high school faculty advance the goal of differentiation in the math classroom.

### 3. *Outside Professional Development Opportunities for Teachers*

It is clear that there is a strong curriculum and talented, dedicated faculty in the Weston Public schools. There are good ideas, strong visions, and effective practices. But, there is always room to learn more. There are great things happening in the mathematics program in Weston, but there is a need to look beyond the talent in the district to seek ideas, advice, and support from outside sources. There is a need for engagement in the math community beyond Weston. Teachers at every level, K-12, would benefit from professional development that brings in a new voice, a fresh perspective, and the opportunity to share ideas with the broader math education community.

The Committee recommends that the district supports opportunities for professional development at all levels through membership to professional organizations, engagement on social media groups, and attendance at professional development workshops and courses from experts in the field of mathematics education. This includes memberships to local and national professional organizations such as NCTM, which would feature access to journals, lesson and task materials, webinars, grants, and conferences. In addition to being members of organizations like NCTM and ATMIM, the Committee encourages Weston teachers to submit proposals to present their own work at local, regional, and national conferences. The work happening in Weston is outstanding. One way to make it better is to share it with others, receive critical feedback, and find colleagues with whom

to continue the conversation when changes are made. Engagement in the local, regional, and national conversations about math education can only serve to continue to improve the mathematics program in Weston.

The mathematics education community is highly engaged on social media with many research-based groups established on sites like Facebook and Twitter. The math education community on Twitter is so well-established, in fact, that it hosts an in-person math conference each summer. Teachers in Weston reported that they were not actively engaged on social media sites like Twitter for professional purposes. The Committee believes engagement on such sites could serve to support and improve teaching and learning through engagement in a community of professionals beyond Weston.

Professional development is important for the career-long learning trajectory of teachers. While it is noted that there is a great deal of professional, non-teaching, time embedded in the school year for Weston teachers, the Committee recommends that administration supports teachers in going outside of Weston for professional development. The district could support bringing a professional development provider to the district to provide PD in-house or sending teachers out to workshops, conferences, and courses happening outside of the district. The secondary teachers reported that they did not attend outside professional development for two reasons: they are uninformed about opportunities and there is no substitute coverage when they are out of the classroom and they do not want to leave students without a math class for a day. The district needs to show teachers their support of professional learning activities by sharing opportunities and inviting interested people to attend while pledging support for the classes they leave behind.

#### **4. *Clear and Consistent Communication***

A clear and consistent communication plan is needed in order to keep families and the greater community accurately informed about the mathematics program in the Weston Public Schools. It was clear to the Committee that many stakeholders experience a communication breakdown between schools and families that is problematic for all parties involved. During the Committee's visit, many parents and community members reported information that directly contradicted information presented by teachers and school staff as it related to the mathematics program. There were many issues that arose that are clearly buzzworthy in the community and those issues need to be addressed clearly and directly.

**Consistent Communication Plan.** The Committee recommends a clear and consistent communication platform and structure for information sharing that is used throughout the district. This platform likely looks different at the elementary, middle and high school levels, but it is important that it be clear and consistent throughout the entirety of a grade band. Parents expressed frustration at the inconsistency in communication from teachers with regard to the mathematics program. Parents with multiple students in the same school reported that each teacher shared homework, newsletters, and relevant mathematical information differently. There was also frustration at the lack of transparency within Google Classroom as students move to middle and high school and how, as a parent, this made it even more difficult to have an understanding of what was

happening in mathematics classrooms. These problems could be ameliorated through a clear and consistent communication plan used by all teachers.

At all levels, parents expressed concern about the content, pacing, and structure of mathematics courses. In the elementary grades, concerns were focused around understanding the content in ways that would help parents and caregivers support their children. In the middle and high school, concerns were focused on a lack of clarity on the ways in which courses are structured, how they are differentiated, and what supports are provided to students in their coursework. More proactive communication is needed in this area. Consistent use of newsletters, content overviews, and videos can be used to help elementary parents better support their children at home. Parent math nights, workshops, and webinars can also be leveraged to inform parents about what and how their children are engaged in mathematics class. Family math nights and math game nights can be offered to engage the community in mathematics together. The Committee also notes the need for differentiated offerings to include METCO families in these kinds of events. The Committee recommends hosting family math nights and informational parent sessions in Boston to accommodate the families of METCO students. In addition, web-based platforms like webinars can be used to be more inclusive.

**Communication with the Weston Community.** Improved communication is also needed with the greater Weston community. The Committee notes a need to be clear and consistent in communication about the mathematics program with the greater Weston community. Including a broader range of students in events such as the Fractal Fair would attract a wider audience of attendees from the larger community and broaden exposure about the excellent work being done within the schools. In addition, the district should provide a progress report on the goals outlined by this document to the community in the middle of the cycle, rather than waiting until the next review for a report.

Finally, there is a clear sense that the schools, families, and the community are not seeing key issues in the mathematics program through the same lens. There is incomplete information informing decisions and opinions on both sides and the debate seems to devolve into “he said/she said.” There are big and important issues at stake, such as parent concerns about the rigor of coursework, differentiation of courses to support students exceeding grade level expectations, and teachers’ concerns about the mental health of students and external pressures related to academic achievement. The Committee recommends the development of a school and community forum or task force to address these disparities head on. The two groups need to hear from one another in an organized and productive way to work together on these issues instead of separately. Bringing the groups together to truly hear one another and work collaboratively to develop a plan for next steps could build more trust between the groups and work in favor of the students.

## Response to Committee Charge Curriculum

*Question 1: Should we investigate research-based elementary math programs to ensure the continuity of content and practice across and within grade levels?*

The elementary math program incorporates the combination of a commercial curriculum, *Think Math!*, with other resources from a variety of sources. The Math Journey curriculum documents provide a clear overview of the scope and sequence for each grade level. The calendar in each Math Journey is built around the Big Ideas of each grade level, which are aligned to the Massachusetts Curriculum Frameworks for Mathematics (2017). There is explicit mapping of the standards onto the curriculum materials and other resources. An impressive number of additional resources are embedded into these Journey documents demonstrating the design of a curriculum aligned to the standards, rooted in best practices for mathematics teaching and learning, and not following a commercial program in lockstep. A clear expectation of 60 minutes of mathematics five days a week in every grade K-5 is set in these documents and it would be impossible to complete all elements outlined for a single lesson, if a teacher did not adhere to the time frame required.

Another strength of the Math Journey documents is the inclusion of instructional routines using embedded resources to support the teaching of each content standard and lesson. The infusion of routines such as *Number Talks* to promote number sense, *What's Happening in this Graph?* to support data and statistical reasoning skills, and *Estimation 180* to support number sense and estimation skills, demonstrate that these Journey documents ARE research-based and demonstrate the current trends in best practices for elementary mathematics. At the heart of the recommendations by professional organizations such as the National Council of Teachers of Mathematics (NCTM) are instructional routines rooted in number sense and engaging students in the Standards for Mathematical Practice.

The Committee does not suggest that the Weston Public Schools investigate research-based math programs to replace the current math curriculum. The combination of commercial curriculum and home-grown scope and sequence documents are well crafted and carefully thought out to engage students not only in the skills required at each grade level but in the investigation of Big Ideas with a heavy emphasis on developing conceptual understanding, engaging in concrete explorations, and supporting mathematical discourse during which students share and discuss ideas, solution strategies, and make generalizations that deepen their mathematical understanding. Any new program worth adopting will incorporate these same elements. There is no perfect curriculum. The financial and human capital expense of exploring, piloting, and implementing a new curriculum would not provide a benefit that would outweigh the cost. What is currently being used in Weston is research-based, clearly aligned to the standards, incorporating best practices, and working. Weston does not need a new curriculum, but rather a commitment to the current curriculum at the elementary level. The time, effort, and resistance to change that would be encountered in the switch to a new curriculum is not worthwhile given the strength of the program that already exists.

*Question 2: How do we better connect mathematical conceptual understanding with the real-world experiences of students, especially in the area of understanding, evaluating and interpreting data?*

Students understand mathematics best when it is used to solve problems in the world around them. Problem based learning allows students to ask their own questions, and use mathematics to answer those questions. There are already many real-world connections embedded in the curriculum in the Weston Public Schools. Some examples the Committee noted during the site visit include: the Fractal Fair, high school courses focused on application such as Applied Discrete Math, and open ended problems at the center of instruction in the middle and elementary schools. The Committee also observed instructional routines happening in the Weston Public Schools that engage students in considering how understanding, evaluating, and interpreting data could help them answer a question about their world. For example, “[What’s Going on in this Graph?](#)” is a weekly feature of The Learning Network in the New York Times. In this routine, students analyze a graph and relate it to a headline from the New York Times. In our visit to elementary classrooms, some members of the committee observed a 5<sup>th</sup> grade class discussing a graph illustrating the infection and fatality rates of different infectious diseases. These students were exploring the differences in infection and fatality rates of different diseases with coronavirus at the heart of their discussion. This activity, and others in the NY Times archives, engage students authentically in statistical reasoning and data analysis. Teachers in K-12 reported that they were offered professional development about the use of this resource at a recent professional development day, an indication that integrating real world experiences and data analysis is seen as a priority in the mathematics program.

Support for continued training and coaching in the use of this and other like resources should be provided. In addition, there is a need to consider the addition of the data sciences to the math and computer science curriculum. The world is seeing a significant growth in job creation in the data sciences and in the use of data sciences in existing industries. It is important that Weston consider the integration of data sciences into their current curriculum to better prepare students for college and career.

The Committee recommends that teachers continue to develop and evolve the inquiry approach to mathematics teaching and learning at the core of the mathematics curriculum. However, in order for this approach to be successful for all students, teachers need to see all students as mathematical thinkers and having mathematical knowledge. In addition, teachers cannot assume what students’ real-world experiences are, we need to learn about our students and their worlds, and then identify and incorporate real world problems that are truly representative of students’ lives outside of school. In order to make mathematics relevant and engaging for all learners, the Committee recommends that teachers employ Culturally Relevant Pedagogy in mathematics classrooms from K-12.

*Question 3: What are the strengths and weaknesses of our home-grown secondary math curriculum?*

Much like in the elementary program, the home-grown curriculum at the secondary level is masterfully designed and thoughtfully sequenced. The 6-12 Department Head for Mathematics and the mathematics teachers have invested a great deal of well spent time and energy in the development of this curriculum. It is clear that the MA Curriculum Frameworks (2017) are at the heart of this curriculum and students are being exposed to the big ideas needed for mastery of each course through engaging and cognitively demanding tasks.

The decision to implement Algebra for all in grade eight demonstrates the thoughtfulness of the secondary math curriculum. Students are all being held to a rigorous set of standards in the middle school and supported on a mathematics trajectory that makes it possible for all students to take upper level mathematics courses in their junior and senior years of high school. The variety of course offerings is impressive at the high school. Students have many different options for how they fulfill the four-year math requirement including courses in Statistics, Applied Discrete Math, and Intro to Calculus. These options allow students to engage deeply in mathematics, apply mathematical concepts to real world problems, and not be locked into a very traditional course sequence. In addition, these course offerings open up several options for math electives for students who desire them.

A weakness of the home-grown secondary math curriculum is the lack of differentiation built into the courses. There is concern about the differences in the rigor of CP and Honors courses. Honors courses appear to be very focused on independent learning while CP courses observed were traditional and teacher-centered. It appears that both levels could be improved by learning from the successes of the other. CP courses need more opportunities for rigorous explorations, while Honors courses could be improved by increased scaffolding to support the needs of all learners. The curriculum could be improved across all courses and levels through engagement in the broader conversation about mathematics education beyond Weston. Attending conferences, engaging in online professional development, and learning from math educators outside of Weston could infuse new ideas and support the evolution of the home-grown curriculum to better meet the needs of all students.

*Question 4: Do the current high school offerings support the needs of all students?*

The current high school offerings are robust in their scope and thoughtful in their sequence. Algebra for all eighth graders is a rigorous, yet attainable objective. By starting all ninth graders in Geometry, there is an opportunity for all students to enroll in upper level mathematics courses prior to graduation. While the vast majority of students at Weston High School are college bound upon graduation, the course sequence ending in AP Calculus is not best suited for everyone. The courses provided that offer alternatives to the Calculus track, such as Applied Discrete Mathematics, Statistics, and Intro to Calculus, give students mathematical opportunities that can be tailored to their interests and needs during their four years at Weston High School.

*Question 4a: Given declining enrollment, should the high school weave in semester-based elective courses?*

Given the popularity and success of the Applied Discrete Mathematics course, offering a wider array of semester-long elective courses could be attractive to students. But, the introduction of semester-based electives should not be done without careful consideration of the bandwidth of the faculty and their ability to offer more courses at the caliber needed to make them effective.

*Question 4b: How does the trajectory of the math curriculum match that of the science department?*

The Committee supports the scope and sequence of courses offered by the mathematics department with all students taking Algebra in grade eight and Geometry in grade nine. It is beyond the scope of this committee to comment on the scope and sequence of courses offered by the science department. While the committee understands concerns about the alignment of Physics and Geometry in grade nine, we feel this is not within our expertise to offer comment on the placement of Physics in the course trajectory for science. What we can comment upon is the reasonableness of the course sequence in mathematics and our endorsement of the course offerings as they relate to the order of the content taught. If this does not align with the content presented in science, then that is an issue for investigation by a science committee or an interdisciplinary committee that can speak to the interests of all stakeholders.

*Question 5: How do we better integrate computer science and skills into both the mathematics and the overall curriculum?*

Computer science is integrated into the curriculum at all levels in the Weston Public Schools. The committee observed elementary students engaged in computer programming using Scratch during the site visit - a regular occurrence in elementary classrooms. A family math and science night focused on coding is also offered for elementary families. The middle school also has coding integrated into their courses using CodeCombat, a game-based coding program. Two sections of AP Computer Science and two sections of Python Programming are offered at the high school.

Some suggestions for greater integration of Computer Science into the curriculum include teaching other number systems, integrating AP Computer Science Principles into the course offerings, and considering a follow up to the Intro to Python Course. The exploration of number systems beyond Base 10, such as binary or hexadecimal would put students at an advantage going into a computer science course in the future. In addition, including a broad approach to functions and variables would also provide a strong foundation for students who go on to study Computer Science further. The committee observed the Intro to Python course at the high school and was impressed by the offering. Adding another semester-long elective, such as web design, app writing, or a language of programming course could be a strong complement to the Intro to Python offering. In addition, students might benefit simply from Intro to Python Part II as another elective. The AP Computer Science principles could be more explicitly infused into existing course offerings in order to provide students with a more comprehensive program of

study that provides a stronger foundation in computer science and better prepares them for future exploration or study of the content.

## Instruction

*Question 6: How can we better differentiate instruction to meet the needs of all student readiness levels, interests and learning styles?*

Improved differentiation across all levels is needed. Teachers are working hard and making visible efforts to differentiate, but community members report that these efforts are falling short in many cases. There is a need for teachers and administrators to consider how teaching and learning is being differentiated for students who are struggling to meet grade level expectations as well as those who are far exceeding those expectations. A commitment to supporting all learners should be a priority.

The Committee recommends that the district consider focused professional development and structured coaching to support teachers in this work. Professional Development in two areas is recommended: differentiated mathematics instruction and Culturally Relevant Pedagogy. Generalized professional development about differentiation may not be effective. Math teachers need to consider and investigate ways to differentiate that are specific to mathematics (differentiated mathematics instruction) and specific to the students sitting in their classrooms (Culturally Relevant Pedagogy). This work would include critical examination of student work and curriculum materials, both of which require expertise in mathematics.

Math teachers need time and space to think deeply about differentiated mathematics instruction because this is different from differentiated instruction in other subjects and relies heavily on teachers' Mathematical Knowledge for Teaching (Hill & Ball, 2004). One of the best ways for teachers develop their Mathematical Knowledge for Teaching and learn to effectively differentiate is through structured coaching. In a recent Op/Ed in Education Week, Dr. Heather Hill (2020) identified two highly effective approaches to professional development for teachers: curriculum-focused programs and structured coaching. Hill identifies coaching as an effective PD model when it is "individualized, intensive, and sustained." She goes on to say that subject-specific coaching is more likely to be effective than generalized instructional coaching. Expanding the coaching model to include math-specific coaches at each elementary school and the middle school is a recommended approach to improving teachers' ability to effectively differentiate instruction. At the high school level, coaches are less prevalent. However, peer observations and coaching could be an effective means to provide similar opportunities to those provided by coaches in the elementary and middle schools.

Hiring an outside consultant to jumpstart this work and help the district construct a long-term improvement plan related to differentiation is recommended. The Math Specialist and 6-12 Department Head should be commended for the work they have done with their teachers. But, often an outsider can invigorate teachers to try something new and make a change, even if that change has been previously presented by leaders in the district. In Elementary grades, an outside professional development provider who could support teachers in their use of math workshop as a framework for differentiated instruction would be a wise investment. At the middle and high schools, a consultant with secondary math experience who can support teachers in critically examining curriculum and instructional practice is recommended. For all faculty, professional development and/or professional learning communities focused on Culturally Relevant Pedagogy

are also recommended in response to the noted achievement gaps. A sustained learning model featuring multiple visits over the course of one or more school years is recommended for the professional development described above.

*Question 6a: While we recognize that external enrichment programs are a valued tool to challenge interested students, are we differentiating appropriately in honors/accelerated courses to meet the needs of students who have not received external math support training?*

External enrichment programs are beyond the control of the district. Parents will always seek out these kinds of opportunities if they perceive them to be valuable as an extension or a support for remediation. In communities like Weston, these programs are popular because the community is privileged to be able to support them. A recent [Boston Magazine article](#) looked closely at the rise of one such program, Russian Math. Mathematics education experts quoted in the article noted that the instruction at these programs is not necessarily better than what they are getting in school. But, it is notable that Dr. Jon Star, Educational Psychologist at Harvard Graduate School of Education is quoted as saying that one way to combat the issue of programs like Russian Math having a stronghold in the community is to have a clearly communicated plan for attending to the need for more advanced mathematical instruction. It seems from our listening sessions with community members that clearer communication around mathematical objectives and differentiated instruction for students at all levels is needed in Weston.

Schools cannot prevent families from investing in extracurricular math programs like Russian Math. Participation in these programs does have a heavy influence on the mathematics students bring with them into the classroom and the knowledge and skills students bring in from Russian Math should be examined and explored in deep and meaningful ways in the classroom – this is differentiation for students at all levels. Teachers need to acknowledge these differences and commit to differentiating instruction for all students, including those who are exceeding grade level expectations. In conjunction with differentiation is a commitment to growth mindset and instilling growth mindset in students. Students performing above expectations need to have a growth mindset just as much, if not more than, students who are not yet meeting grade level expectations.

*Question 6b: Do we appropriately challenge students who move from honors to CP level in secondary courses?*

There is a need to address differentiation and rigor in CP level courses at the high school. Community members report that CP courses are much less rigorous than Honors courses and with no level between CP and Honors, and do not meet the needs of many students. The Committee notes that the same discrepancies between levels do not exist to this extent at the middle school and recommend that lessons from the success of the middle school curriculum be examined and possibly applied at the high school level. Where it is possible, there should be more overlap between the tasks and investigations done in Honors classes and CP classes. Opportunities for project-based learning, such as projects for the Fractal Fair should be included in the curriculum for CP courses.

When students request to move from a CP course to an Honors course, they are required to complete Extension Modules to give them exposure to the content of the Honors course and prepare them for the next course. Given that the modules are already built, why can they not be infused into the CP curriculum in order to give all students more exposure to this content. This would allow students to be challenged, but with the level of scaffolded support they need to be successful.

*Question 7: How do other communities/private schools differentiate instruction at the elementary level, including leveling in upper elementary?*

Currently one of the most popular and widely recommended models of differentiated instruction at the elementary level is the Math Workshop Model (Newton, 2016). This instructional model is designed to individualize instruction and support students in small groups rather than provide one-size-fits-all instruction to the whole class. Math Workshop mirrors the popular Writer's Workshop model, where students receive just-right small group instruction (Guided Math Instruction) alongside targeted individual and small group tasks and activities that are tailored to their individual needs based on data from formative assessments. When students are not meeting with the teacher for Guided Math Instruction they are working in small groups to complete a task or exploration, completing independent practice, playing fluency games, and/or working on a long-term project. The Math Workshop Model enables teachers to differentiate instruction through varied tasks and small group instruction. This model is widely used in peer communities to differentiate instruction throughout the elementary level.

Leveled classes are less prevalent in elementary schools, however, students are often ability grouped for instruction. Ability-grouping should be approached with caution. A commitment to growth mindset and ability-grouping run counter to one another. Data-driven flexible grouping is an approach that enables teachers to differentiate instruction based on evidence in students' work and meet students' needs in the moment.

*Question 8: How do we support students and at the same time develop independence, advocacy, and agency in both college prep and honors classes?*

Rigorous standards and a belief that all student can learn are the key to developing independence, advocacy, and agency for students at all levels. At the elementary and middle schools, there is a visible presence of growth mindset messaging throughout classrooms and hallways. Messages about the power of yet and the self-talk students need to see themselves positively as mathematicians. While the Committee commends the test retake policy and sees it as evidence of the math department's belief in growth mindset and the use of assessment as formative, it is suggested that the high school math courses address growth mindset more directly and formally with students.

In addition, again the Committee notes an issue that could be addressed in the study of Culturally Relevant Teaching. By getting to know students, their cultures, and how those cultures affect their work in the classroom, teachers can begin to determine how best to help students develop independence, advocacy, and agency for themselves.

## Assessment

*Question 9: Do our elementary and secondary curricula appropriately prepare students for MCAS?*

It should be noted that the MCAS is one measure of student achievement and cannot be directly correlated to the success of a curriculum. There are many reasons why students perform at the levels they do on MCAS and making the tie directly back to curriculum is not a fair assessment, however, the broadly defined “curriculum” certainly plays a key role in student performance on the test.

When the committee considers the MCAS scores for students in the Weston Public Schools in aggregate, there is evidence that the curriculum at the elementary and secondary levels prepares students for the MCAS. However, when the scores are examined at the sub-group level, there are significant gaps in achievement for specific sub-groups. For these groups, it appears that the existing curriculum is not appropriately preparing students for the MCAS.

The following table summarizes 2019 MCAS achievement levels for grades 3-8 on the Mathematics test. (Source: 2019 District Report Card)

### ***2019 MCAS Grades 3-8 Mathematics***

Sub-Group	Exceeding Expectations	Meeting Expectations	Partially Meeting Expectations	Not Meeting Expectations
All Students	31%	50%	16%	2%
High Needs Students	15%	41%	35%	8%
Economically Disadvantaged Students	15%	32%	46%	7%
English Learners	18%	45%	32%	5%
Students with Disabilities	6%	39%	43%	12%
African American/Black	3%	50%	45%	2%
Asian	60%	35%	3%	1%
Hispanic	15%	48%	34%	3%
Multi-Race non-Hispanic	36%	41%	20%	3%
White	28%	55%	14%	2%

In grades 3-8, while the aggregate group has 81% of students meeting or exceeding expectations and only 2% not meeting expectations, there are subgroups of students who are achieving at significantly lower levels. The sub-groups in concern are Economically Disadvantaged Students (47% meeting or exceeding expectations), Students with Disabilities (45% meeting or exceeding

expectations), and African American/Black Students (53% meeting or exceeding expectations). More than 50% of students with disabilities are partially or not meeting the expectations. For these sub-groups, the curriculum is not meeting the needs of the students in order to adequately prepare them for the MCAS. This is a problem that requires immediate attention. This is a problem that needs to involve several different stake-holders (e.g., mathematics teachers, special educators, administrators) in order to identify a solution.

The following table summarizes 2019 MCAS achievement levels for grade 10 on the Mathematics test. (Source: 2019 District Report Card)

***Mathematics Grade 10 2019***

Sub-Group	Exceeding Expectations	Meeting Expectations	Partially Meeting Expectations	Not Meeting Expectations
All Students	27%	60%	10%	3%
High Needs Students	16%	44%	28%	12%
Economically Disadvantaged Students	30%	40%	30%	0%
English Learners	No data	No data	No data	No data
Students with Disabilities	9%	39%	36%	15%
African American/Black	No data	No data	No data	No data
Asian	43%	54%	4%	0%
Hispanic	No data	No data	No data	No data
Multi-Race non-Hispanic	42%	50%	8%	0%
White	25%	61%	9%	4%

In grade 10 the aggregate group had 87% of students meeting or exceeding expectations in 2019. This is a strong success rate, 29% better than the state aggregate data. However, like in grades 3-8, upon investigation into the performance of sub-groups, it is clear that all groups are not performing at the same levels on the MCAS. Of particular concern is the High Needs sub-group, which is meeting or exceeding expectations 60% of the time; the Economically Disadvantaged Students, in which only 70% of students are meeting or exceeding expectations; and the Students with Disabilities sub-group, in which only 48% of students are meeting or exceeding expectations. Once again, the achievement levels of students with disabilities are alarming and need to be addressed immediately. It is reasonable to attribute some of the underperforming test scores back to the curricula and determine that it is not meeting the needs of all students.

It is clear that the curriculum needs to be examined and reconsidered in order to meet the needs of students with disabilities in regards to their performance on MCAS at all levels. Given that the majority of students with disabilities in Weston have their services provided in inclusive settings,

this means that there needs to be greater attention paid to differentiation for students at all levels in math classes across all grade levels.

The 2019 MCAS scores also indicate clear differences in the performances of high needs and economically disadvantaged students as well as students from specific racial subgroups, specifically, African American/Black students. In 2019, in grades 3-8 only 53% of African American/Black students met or exceeded expectations. No data was reported for this subgroup on the 2019 grade 10 test. Hispanic students are also underperforming in Weston with 63% of Hispanic students meeting or exceeding expectations in grades 3-5 and no data reported in grade 10 in 2019. Specific attention to the achievement gap present amongst different racial groups needs immediate attention. Given the significant differences in achievement between different racial groups, it is clear that the district needs to take swift action in identifying ways in which the curriculum can be changed in order to better prepare African American/Black and Hispanic students for success on the MCAS. Some of the African American/Black and Hispanic students in Weston are a part of the METCO program. In order to provide these students with the education promised by the METCO program, particular attention and resources need to be dedicated to redesigning instruction in order to best meet the needs of these sub-groups of students.

Administrators reported that the faculty had recently begun to be trained in Responsive Classroom. Responsive Classroom is an approach to teaching and classroom management focused on four key elements: engaging academics, positive community, effective management, and developmental awareness ([www.responsiveclassroom.org](http://www.responsiveclassroom.org)). Responsive Classroom explores the social-emotional needs of students as they relate to academic achievement and provides teachers with strategies for supporting the social and academic growth of all students. This is a good start in the work of meeting the needs of all learners. Certainly, attention to the social-emotional needs of students will benefit students in the aggregate. However, in order to address the achievement gap that is specifically evident in the performance of different sub-groups, the Weston Public Schools should consider professional development to inform their faculty about Culturally Relevant Pedagogy (Ladson-Billings). Culturally Relevant Pedagogy is a framework for teaching and learning that requires teachers to develop and demonstrate cultural competence - the ability to teach in a multicultural setting. Culturally Relevant Pedagogy requires teachers to see and understand the differences in students and design instruction specific to their cultural experiences, rather than a one-size-fits-all curriculum approach where everyone gets the same instruction.

The committee also questions whether students could be given practice MCAS tests as formative assessment opportunities. These practice tests could help teachers identify students who might struggle on the MCAS and be targeted for intervention or differentiated classroom experiences to better prepare them for success on the MCAS.

*Question 10: “We believe that assessments should not only provide the teacher with valuable feedback into student learning, but they should also serve as a learning opportunity for students. Assessments should also be a reflection of our belief in promoting a growth mindset.” How are we meeting this goal?*

A district commitment to growth mindset (Dweck) is apparent at all grade levels throughout the Weston Public Schools. There is evidence in curriculum materials, classroom displays, and the high school assessment policy that indicates that the commitment to a philosophy of growth mindset is not lip service in Weston. In the elementary school curriculum, lessons specific to the development of growth mindset are written into the Math Journeys at each grade level. In grades K-2, these take the form of the “[week of inspirational math](#)” from YouCubed (Boaler) and in grades 3-5, specific growth mindset lessons from Jo Boaler are a required part of the curriculum. These lessons come from YouCubed and the Math Mindsets book series featuring grade level-specific mathematical tasks designed to support the development of growth mindset. Throughout the units, other lessons and tasks focused on growth mindset are incorporated into the curriculum. Classroom displays in the elementary schools frequently featured growth mindset messaging. Some elementary classroom teachers discussed their use of growth mindset language with their students to committee members on their visits to classrooms. At the middle school, there is also evidence of a commitment to growth mindset. Jo Baoler’s series of Math Mindsets instructional materials is used throughout the sixth and seventh grade curriculum. The committee visited several classrooms where there were displays featuring growth mindset messaging and language.

While there were significantly fewer explicit references to growth mindset in the committee’s visit to the high school than in visits to the elementary and middle schools, the committee found that there is evidence of a growth mindset philosophy at the high school. There were classroom displays at the high school articulating that the math department is committed to fostering essential attributes of mathematicians including: persistence, communication, resilience, critical thinking, logic, curiosity, creativity, organization, and collaboration. While those characteristics relate more specifically to the Standards of Mathematical Practice (MA DESE, MA Curriculum Frameworks for Mathematics, 2016) than to the philosophy of growth mindset, it is a related approach to mathematics as an academic discipline with specific habits of mind rather than simply a set of skills acquired and knowledge obtained. The high school assessment policy, however, demonstrates a clear commitment to the growth mindset philosophy. Three elements of the “Second Chances Quiz & Test Policy” posted and used at the high school demonstrate the department’s belief in growth mindset and the power of yet: reboot quizzes, test retakes, and late homework policy. There are several “reboots”, mini-lessons to review and refresh algebra concepts, that are built into CP courses throughout the year. After 4 reboot lessons, a quiz is given. Reboot Quizzes are opportunities for review and are included in the final grade differently from regular tests and quizzes. The posted policy on reboot quizzes states that the lowest reboot quiz score is dropped when there are 4 reboot quizzes in a quarter and one reboot quiz may be retaken in each quarter. Students are given the opportunity to retake any regular test if their original score is less than 83%. The new score is capped at 83% and is calculated by adding  $\frac{1}{3}$  of the original score to  $\frac{2}{3}$  of the retake score. This policy allows students who did not demonstrate mastery of a concept to receive feedback on their work (original graded test), to have time to meet with a math teacher to discuss the concept and any questions they have, and then retake the

test in order to demonstrate their understanding of the concept. In this way, tests serve in both a formative and summative function. A test with no retake option is summative only - it provides a summary of what a student knows or does not know. The feedback is not followed by an opportunity to rework problems and demonstrate growth. A test with a retake option becomes formative assessment - informing the student's understanding of a concept and giving them an opportunity to deepen that understanding and demonstrate a new understanding. The committee finds this policy to be a clear demonstration of a growth mindset philosophy at the high school.

## Access and Equity

*Question 11: What recommendations can be made to make a significant impact on our achievement gap?*

As addressed in the questions related to Assessment, there is a significant gap in the performance of certain sub-groups of students on the MCAS. This is problematic in that while the aggregate data shows a very strong district-wide performance on the MCAS, it is clear that there are specific groups of students who are performing at significantly lower levels and it can therefore be assumed that their academic needs are not being met by the current curriculum and models of instruction. The achievement gap is not unique to Weston. This is a problem that persists across the Commonwealth of Massachusetts and throughout the country. However, there are ways to approach this problem that could help Weston to close the achievement gap and better serve the individualized needs of all learners.

First, there is a difference between equality and equity. Equality is defined as equal opportunities and the same levels of supports for all students. Equity refers to offering varied levels of support in order to achieve greater fairness in outcomes. In many ways, an answer to the question of the achievement gap lies in this difference between equality and equity. Teaching and learning cannot be one-size-fits-all. While it may seem “fair” to give everyone the same opportunities and supports, this is actually counter-productive to goals of raising the achievement of students at all levels. Differentiation is the key to closing the achievement gap. Students need to be treated with equity, not equality. They do not all need the same supports, but rather, they need individualized supports tailored to their needs. This work is done in the planning of instruction with careful attention paid to student work and data at the individual student level. It requires flexible grouping practices and the use of formative assessment to collect information about students’ understanding and performance daily. This information must then be used to design future instruction. Another key aspect of formative assessment is clear, specific, and timely feedback to learners.

Weston Public Schools are using a Response to Intervention (RTI) model to meet the specific needs of students. RTI is a three-tiered model of support that is data-driven and provides specific instruction to target students’ needs. RTI is a model of differentiation that uses time outside of the regular math block to close gaps and increase achievement.

Administrators reported that the faculty had recently begun to be trained in Responsive Classroom. Responsive Classroom is an approach to teaching and classroom management focused on four key elements: engaging academics, positive community, effective management, and developmental awareness ([www.responsiveclassroom.org](http://www.responsiveclassroom.org)). Responsive Classroom explores the social-emotional needs of students as they relate to academic achievement and provides teachers with strategies for supporting the social and academic growth of all students. This is a good start in the work of meeting the needs of all learners. Certainly, attention to the social-emotional needs of students will benefit all students, however, in order to address the achievement gap, the Weston Public Schools should consider professional development to inform their faculty about Culturally Relevant Pedagogy (Ladson-Billings, 1995). Culturally Relevant Pedagogy is a framework for teaching and learning that requires teachers to develop

and demonstrate cultural competence - the ability to teach in a multicultural setting. Culturally Relevant Pedagogy requires teachers to see and understand the differences in students and design instruction specific to their cultural experiences, rather than a one-size-fits-all curriculum approach where everyone gets the same instruction.

Teachers at all levels, but particularly at the middle and high school levels, should consider the integration of curriculum elements that address societal issues and relate to the lived experiences of learners. This is an important part of Culturally Relevant Pedagogy in mathematics, the use of mathematics to understand and unpack issues of race, culture, and social justice. Mathematics tasks that take up social justice issues benefit all students while specifically addressing the needs of specific needs of smaller groups of students. Some districts in the United States have begun to make a clear commitment to addressing issues of equity in their mathematics. Seattle Public Schools (2020) for example, have this statement on their [district webpage](#):

Teachers in Seattle also attend to equity in their mathematics classrooms and make decisions that reflect the needs and cultures of their students. Seattle teachers go deep with mathematics, leverage multiple mathematical competencies, affirm mathematics learning identities, challenge spaces of marginality and draw on multiple resources of knowledge which will strengthen mathematical learning and cultivate positive student mathematical identities. Seattle teachers use these practices effectively to allow every student to develop a strong math identity and sense of agency in their mathematics learning.

Rochelle Gutiérrez (2018), a mathematics educator and researcher from the University of Illinois at Urbana Champaign, has presented a framework for equity in mathematics teaching and learning called Rehumanizing Mathematics. This framework goes beyond general calls for equity in mathematics and pushes educators to consider not just access and achievement but includes a focus on the politics in teaching and mathematics. Both the Seattle Public Schools philosophy of mathematics teaching and learning and Gutiérrez's framework of Rehumanizing Mathematics demonstrate the ways in which the math education community is calling for teachers and schools to address issues of equity in mathematics classrooms. It is about more than just attention to the achievement gap, but rather attention to the students and the ways they and their communities experience mathematics in and out of the classroom. Weston's commitment to training in Responsive Classroom is a good start in the exploration of this work. The administration's exploration of Culturally Relevant Pedagogy with a focus on, as it was described in a meeting with district leaders as, "culturally relevant leadership" is pertinent here and it should be expanded to include teachers in order for there to be real change in practices that perpetuate the achievement gaps.

The middle school staff has begun to do some of this work of infusing social justice issues, a key element in equitable mathematics instruction, into their curriculum. As a department, they explored the National Council of Teachers of Mathematics (NCTM) access and equity materials as part of a professional development session. Following the review of the materials, they did an activity about Food Deserts together as a staff. This shared experience by staff will hopefully lead to the inclusion of such tasks and approaches to seeing mathematics as a way to model solutions to societal problems, into the curriculum for students.

Attention to equity in the mathematics classroom is necessary in order to close achievement gaps. Many resources exist to support the district and its teachers in this endeavor. Below is a short list of examples that range from the theoretical to the practical:

- *Rehumanizing Mathematics for Black, Indigenous, and Latinx Students* by Imani Goffney, Rochelle Gutiérrez, and Melissa Boston
- Radical Math ([www.radicalmath.org](http://www.radicalmath.org))
- *The Impact of Identity in K-8 Mathematics: Rethinking Equity-Based Practices* by Julia Aguirre, Karen Mayfield-Ingram, Danny Martin
- *Access and Equity: Promoting High Quality Mathematics in Grades 9-12* edited by Dorothy Y. White, Anthony Fernandes, and Marta Civil
- *Mathematics Lessons to Explore, Understand, and Respond to Social Injustice* by Robert Q. Berry III, Basil M. Conway IV, Brian Lawler, and John W. Staley

*Question 12: What structures are in place for supporting fluidity between levels at the middle and high school?*

Leveling at the middle and high school was a topic of conversation with several different stakeholders during the committee’s visit. Parents and community members raised questions and concerns about leveling practices. School committee members specifically raised questions related to leveling. The lack of leveling at the elementary level is commended by the committee who believe that heterogeneous grouping and no levels in elementary school keep access and equity to high level mathematics available to all students, which is an important piece of closing the achievement gap.

Fluidity between levels is important at the middle and high schools in order to maintain access and equity for all students. In programs with leveled courses, it is important that students be able to move between levels and not be “tracked” into one level with no opportunity for upward movement. This “tracking” model severely limits access to students from specific sub-groups. Research shows that students of color and students with disabilities are often disadvantaged by tracked programs. Another promising policy change in Weston is a move away from weighted GPAs at the high school level. Weighted GPAs reward students in Honors level courses with a heavier weight, therefore making it impossible for students in CP courses to rank at the top of their class. This move away from weighted GPA demonstrates a commitment to leveled courses as a means of differentiation instead of elitism.

In Weston, there is leveling in middle and high school, however, there are pieces of the leveled program that demonstrate a consciousness of the perils of tracking. For example, having only two levels is a more equitable approach to leveling. Teachers work together in teams to ensure the sections of each course are aligned. This alignment between levels appears to be more successful at the middle school where students in each level have overlapping experiences throughout with extension opportunities for those in the upper level. This model should be replicated at the high school.

In the middle school, students are leveled in grades seven and eight but there is a commitment to all students taking Algebra in the eighth grade rather than just having students in the upper level in algebra, as is the practice in other peer districts. All eighth graders take a full course in algebra

and all ninth graders take a full course in Geometry. There are no eighth graders who are placed out of algebra and allowed to take Geometry early - another indication of a commitment to equity, even in a leveled system.

There are class size restrictions on Honors level courses and students must complete a series of additional work in order to move up a level. These practices limit opportunities for students who may not have time or support to do these extra modules. The system for moving between levels could be more equitable if it was not reliant on outside modules to “make up” for what was missed by being in the lower level. More differentiation in the CP level could eliminate or significantly reduce the need for this additional work. It is clear that there is a significant gap between the CP and Honors levels of courses and this gap likely prevents students from moving “up” a level because of the amount of “catching up” they need to do in order to advance to the Honors level after a year in CP.

The varied course offerings at the high school level provide rigor in a variety of different topics and provide options for students who may not want to progress along an Honors level track to Calculus, but instead get opportunities to take CP level courses such as the three-semester Applied Discrete Math course and the one-semester Statistics course. These are options that provide differentiation via course offerings and a clean slate for students who may or may not have been successful in Geometry and Algebra II. In our observations of the Applied Discrete Math course, some students disclosed that the course was so interesting to them that they chose to take it alongside Honors Pre-Calculus as an additional math elective. This is an indication of the depth and rigor of a course that was designed with the CP level student in mind.

The Committee recommends that the secondary mathematics faculty and administration engage with NCTM’s recent publication, *Catalyzing Change in High School Mathematics*. *Catalyzing Change* (2018) provides a framework for critical conversations about high school mathematics to address topics such as: “dismantling structural obstacles that stand in the way of mathematics working for each and every student; implementing equitable instructional practices; and organizing the high school curriculum around essential concepts to support students’ future personal and professional goals.”

## Professionalism

*Question 13: What recommendations might be made for enhancing and improving professional development opportunities?*

It is clear to the committee that the Weston Public Schools provides a great deal of professional time to teachers for non-teaching tasks. This time is allotted to enable teachers to engage in a variety of different professional activities including: faculty meetings, department meetings, common planning time, coaching, workshops, and special projects. There is a lot of professional time allotted to teachers with specific purposes attached to most/all of that time.

All teachers attend a district-wide full day professional development day each year. In 2020, this full day PD was a series of sharing sessions where teachers and other staff shared best practices with one another in formal sessions. This is a popular format for professional development in districts around the Commonwealth of Massachusetts. It allows for choice of topic, gives teachers the opportunity to present the work they are doing in their own classrooms, and highlights the strengths that are present in the district. It is a great structure for staff morale and can ignite excitement and collaboration.

At the elementary level, teachers' professional development time is school-based and mostly organized by grade level. Teachers attend monthly faculty meetings for school-based interdisciplinary professional development. An early release Wednesday is scheduled each month with a rotating set of objectives, which mostly revolve around school and grade-level based activities. Sometimes this time involves professional development works from the elementary math specialist on a specific topic or instructional routine. These workshops are sometimes driven by requests from teachers. Teachers have team time two times per week at all levels. The focus of this team time is instructional planning, assessments, data, and student work analysis. Coaching, an individualized professional development format, is job embedded. Teachers in grades K-1 have a dedicated math interventionist who works between the two K-2 schools. The math interventionist supports students in and out of the classroom. In the 2019-2020 school year, an instructional coach was hired for the Field School, to support teachers in grades 3-5. While this role is not math specific, the coach has been focusing on math support this year. The teachers report that having the coaches/specialists is a great resource, but only when they have the time to support you in their schedule. The Elementary Mathematics Specialist works with grade levels on a rotating schedule, so they do not receive targeted support from her each year. In addition, her role involved direct service for students, so the time she has for job-embedded professional development for teachers is limited. Elementary teachers indicated that professional development is subject specific by year and rotates. So, a grade level will receive a year of professional development focused on one subject and then move onto a different subject the next year. While this allows for deep dives into specific subjects, it can often leave teachers without professional development specific to math for long stretches of time.

At the middle and high school level, teachers' professional development time is school and department-based. Teachers attend monthly school-based faculty meetings for interdisciplinary professional development. They have an early release one Wednesday per month with rotating objectives focused around the 6-12 math department. They have team time once per week and

common planning time with other teachers teaching the same course(s). When asked about outside professional development opportunities for middle and high school teachers they reported that they did not have time for them. Teachers indicated that they do not seek out time to attend conferences because classes are canceled in their absence and they feel they cannot afford the time lost in their courses. Teachers indicated that they do not engage in virtual professional development opportunities such as engagement in the math education communities on Twitter and Facebook.

All teachers have opportunities for stipended summer professional development activities. Teachers can apply for a summer stipend to complete a project such as major course changes or building common assessments. Teachers indicated frustration that these requests for stipended projects are not always approved despite a justified need for the work to be completed.

It was reported by teachers and administration that there have been outside professional development providers brought in to do mathematics-specific professional development, but no such opportunities in the recent past. For example, despite an interest in seeing the math workshop model used more consistently across the elementary grade levels, there has been inconsistent professional development to support it. The training teachers have received on math workshop has varied by school and grade level. For example, the Country School brought in a consultant specifically to do professional development on math workshop, but this was not extended to the other elementary schools.

While the teachers in the Weston Public Schools are, for the most part, veteran teachers, they need professional development opportunities. The work they are doing is good work. But, they should be pushed to think differently about their practice, to explore new ideas, to try new things. Two recommendations for the improvement of professional development are: increased coaching and outside professional development.

Coaching provides opportunities for individualized professional development that is job-embedded. Math-specific coaches could support the district goal of making the math workshop model more widespread and improving teachers' ability to differentiate in the math classroom. Currently, coaching is provided to elementary teachers by the Elementary Math Specialist, instructional coaches, and in grades 3-5 only, a math coach. Math coaches have been proven to be a successful means of providing job-embedded, individualized professional development for teachers to improve mathematics instruction.

The Committee urges the Weston Public Schools to expand the current coaching model to include math coaches, with training and expertise in the teaching and learning of elementary mathematics. Elementary teachers are not always (in fact they are most often not) extensively trained in teaching mathematics, nor do they feel that teaching math is their strength. As a result, they often benefit from math-specific support from a colleague with expertise in mathematics like a math coach rather than generalized instructional support from a coach who may or may not have the relevant knowledge and experience in mathematics.

Support and encouragement of teachers to attend professional development outside the district is needed. Weston teachers, while experienced and talented, could learn much from sharing their ideas with others at local or national math education conferences and attending workshops to gain new perspectives and bring back fresh ideas. Many of these conferences and workshops are now being shared virtually, with options to watch sessions live or download a recording at a time convenient for the viewer. Some examples of virtual professional development options include [NCTM's 100 Days of Professional Learning](#), [Build Math Minds Virtual Summit](#), [YouCubed](#), and Robert Kaplinsky's [Empowered Problem Solving Online Workshop](#). Teachers at the secondary level indicated a resistance to attending outside professional development because of the time commitment and a lack of substitute coverage for their classes. Teachers need to feel supported in their efforts to advance their professional learning and the district should support them with the time, resources, and supports needed for a day away from the classroom to better their practice.

The work of the Weston teachers and math specialists to develop the home-grown curricula at the middle and high school levels and the incredibly detailed Math Journeys at the elementary level is truly impressive. There are a lot of great ideas infused into the curricula, which, as noted earlier in the report, are working well for many students. But, there is always something new to learn or a new idea to investigate. With limited teacher turnover, this work is very insular and lacks a perspective beyond Weston. In addition to attending professional development outside of the district or bringing outside PD into the district, I strongly encourage a district wide commitment to engagement in the math education community both in the Commonwealth of Massachusetts and nationally. School based memberships to professional organizations such as the National Council of Teachers of Mathematics (NCTM) and the Association of Teachers of Mathematics in Massachusetts (ATMIM) would broaden the scope of the faculty in Weston. It would provide access to professional journals and resources as well as opportunities to attend and present at conferences. Currently, Weston High School mathematics and computer science teacher Alison Langdorf sits on the editorial board of NCTM's newest journal, *Mathematics Teacher: Learning and Teaching PreK-12*. Having Alison on the faculty and such close proximity to NCTM and its signature publication through her work is a huge asset for Weston High School. The faculty at all levels in Weston should be more engaged with professional organizations like NCTM, and at a minimum have building memberships at all levels. NCTM and other organizations also bring professional development to your phone or tablet through forums like Twitter and Facebook. There are weekly Twitter chats as well as a robust math education community (#mtbos and #iteachmath) having daily conversations on Twitter. Weston teachers should be a part of these local and national conversations sharing their ideas and work and learning from the work of others.

## Community Outreach

*Question 14: How do we better partner with all families to support student engagement in mathematics?*

Parents expressed frustration at the inconsistency in communication from teachers with regard to the mathematics program. Parents with multiple students in the same school reported that each teacher shared homework, newsletters, and relevant mathematical information differently. There was also frustration at the lack of transparency within Google Classroom as students move to middle and high school and how, as a parent, this made it even more difficult to have an understanding of what was happening in mathematics classrooms. These problems could be ameliorated through a clear and consistent communication plan used by all teachers. The Committee recommends a clear and consistent communication platform and structure for information sharing that is used throughout the district. This platform likely looks different at the elementary, middle and high school levels, but it is important that it be clear and consistent throughout the entirety of a grade band.

At all levels, parents expressed concern about the content, pacing, and structure of mathematics courses. In the elementary grades, concerns were focused around understanding the content in ways that would help parents and caregivers support their children. In the middle and high school, concerns were focused on a lack of clarity on the ways in which courses are structured, how they are differentiated, and what supports are provided to students in their coursework. More proactive communication is needed in this area. Consistent use of newsletters, content overviews, and videos can be used to help elementary parents better support their children at home. Parent math nights, workshops, and webinars can also be leveraged to inform parents about what and how their children are engaged in mathematics class. Family math nights and math game nights can be offered to engage the community in mathematics together. The Committee also notes the need for differentiated offerings to include METCO families in these kinds of events. The Committee recommends hosting family math nights and informational parent sessions in Boston to accommodate the families of METCO students. In addition, web-based platforms like webinars can be used to be more inclusive.

There is a clear sense that the schools, families, and the community are not seeing key issues in the mathematics program through the same lens. There is incomplete information informing decisions and opinions on both sides and the debate seems to devolve into “he said/she said.” There are big and important issues at stake, such as parent concerns about the rigor of coursework, differentiation of courses to support students exceeding grade level expectations, and teachers’ concerns about the mental health of students and external pressures related to academic achievement. The Committee recommends the development of a school and community forum or task force to address these disparities head on. The two groups need to hear from one another in an organized and productive way to work together on these issues instead of separately. Bringing the groups together to truly hear one another and work collaboratively to develop a plan for next steps could build more trust between the groups and work in favor of the students.

## **Conclusion**

Weston is a well-resourced district with an experienced and dedicated faculty and administration. The mathematics program in Weston is solid and meeting the needs of most learners, as indicated by high performance on the MCAS. The home-grown curriculum is well-designed. But, there is always room for improvement. While the aggregate group continues to succeed, there are growing gaps for small sub-groups of students. These gaps should be considered at the forefront of every curricular decision. It is clear that the district is committed to closing achievement gaps and working to ensure that all students are adequately supported and challenged in mathematics from K-12. The preceding report is intended to suggest ways in which the district may work to meet this important goal.

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