Math Night responses

QUESTION: For a current 9th grader, what opportunities are there to get any of this new math curriculum before he graduates? Would love for him to be involved even in pilot classes etc

RESPONSE:

Hi XXX

Thank you so much for your question and for your interest in the work we're doing with the new math curriculum. We truly appreciate families wanting to stay engaged and informed.

For current high school students, including your 9th grader, there *will* be several opportunities to benefit from the work underway, even before the full PK–12 implementation is complete.

High School Pilot Work Already Underway
Both high schools are currently piloting two potential new math programs—CPM and Carnegie Learning—as part of our selection process for next year. We expect to make a decision in February. While we will begin using elements of the new program next fall, we will transition gradually to ensure high-quality professional learning for staff and a thoughtful scope and sequence for students. Full implementation is planned for the 2027–2028 school year, but high school students will begin experiencing updated units, tasks, and instructional practices well before then.

Updated Instructional Practices Your Student Will Experience
Even during the transition period, teachers will be integrating many of the high-leverage instructional routines and mathematical practices emphasized in the new curriculum.

Future Elective Opportunities
We also hope, through the budget process, to introduce new senior math electives over the next few years. These would focus on real-world applications and career-connected math and science learning—something current students may be able to access before graduation.

Additional Support Structures
We are also exploring summer bridge programs that would provide enrichment for students ready to advance or targeted support for those who need more time. These are dependent on budget approval, but they are a key part of our long-term vision.

Please feel free to reach out with any additional questions. Thank you again for your interest and support.

Warmly,

QUESTION: Is there a plan about how to support teachers in engaging the new materials or does that come later-and how much will teachers be involved in creating the supports?

How similar are these lessons across schools?

Do all teachers create their own mild/med /spicy

Are we allowed to know which schools are piloting the options?

RESPONSE

Hi XX,

Thank you for your question. Yes, we have a clear plan to support teachers with the new math pathways and curriculum.

• Professional learning begins before implementation and continues throughout the year so teachers feel prepared with the new materials.

• Teachers help shape the supports. Their feedback from the pilots, surveys, and team discussions directly informs the training and resources we create.

• Ongoing collaboration and coaching will be built into the school year so teachers can learn together, share strategies, and get the help they need.

In response to your other questions, teachers generally work as grade-level teams at a school, designing supports and extensions together. More coordination in this area by grade level and course is the vision for the future.

Please let me know if you have any other questions.

QUESTION: Is every student going to take placement exams at the end of each year to determine their placement for the next? What if they place out of Algebra 1 before officially taking it in middle school? Will they be forced to take it again?

RESPONSE:

Dear xxx

Thank you for your question and for attending Community Math Night. We are **not** planning for every student to take a high-stakes placement exam each year. We are currently developing placement criteria at all levels, which will rely on multiple data points we already use—such as STAR, MCAS, common assessments, and teacher recommendations. Over time, we may refine this process as we learn more from student and teacher experiences.

At the middle school level, assessment data will help identify students who may benefit from additional support or enrichment during the school day, as well as those who may be recommended for our summer bridge program. This data will also be used at the end of 7th grade to determine students' 8th grade pathway. The middle school math sequence will include pre-algebra skills in grades 6 and 7, followed by Algebra 1 or Integrated Math 1(at the grade level or accelerated level and will cover the equivalent of 9th grade material) in grade 8. Based on the above, students will have the opportunity to access advanced math coursework once they reach the high school level.

Please let me know if you have any additional questions.

QUESTION: What can a current 8th grader expect in terms of timeline? Maybe publish a clear chart, keeping it up to date, for each grade that gives the expected timeline given that grade's relationship with the phase-in procedure, budget, staffing, etc.

Thank you for the question and for attending Community Math Night. We are working to finalize a complete communication to the community with the information you have requested in the very near future. For now, we are developing a plan to implement a placement assessment for the current 8th graders that will allow them to be placed into Integrated Math II Honors during their freshman year based on multiple data points and teacher recommendations. This has not been the practice in the past. More details of this process will be coming in the new year.

This summer we will be working to develop plans for new 11th and 12th grade STEM related electives.

The new math curriculum will go into effect in the fall of 2027-28 to allow our teachers to be trained on this new curriculum.

Please feel free to reach out with any additional questions.

QUESTION: I am curious about how the summer experience works. And what curriculum are you piloting.

Dear XXX

Thanks for your question and attending Community Math night. We are in the early stages of developing our summer bridge program and it will be contingent on budget approval.

This year, we are piloting several math curricula across the district as part of our PK–12 math review. At the elementary level, our staff are piloting Experience Math and Amplify Desmos. Our middle school teachers are piloting programs such as Amplify Desmos and Midschool Math. Our high school teachers are piloting, *Carnegie Learning*, and *CPM*. The goal is to gather teacher and student feedback to help us select the curriculum that best aligns with our standards and instructional priorities.

Our summer bridge program will be designed to give students additional time with key math concepts so they feel confident and ready for the next year's course. It's typically a short, focused program that blends review, skill-building, and problem-solving. The summer curriculum is currently being discussed as we identify the needs of our students. We would like to connect to share ideas and hear how you are structuring math in Arlington. We envision summer math classes to help students who are below grade level in skills and mastery to gain ground on grade level mastery and, for those who are on the cusp of moving up a level in math pathways, to help them be prepared to succeed in such a jump, hence you will hear the summer experienced discussed as "jump up" programming. It is not designed to help students accelerate beyond grade level material within a school year.

QUESTION: Would like to hear more about how this will be pulled through for elementary school - how do we make sure kids don't get bored and have enrichment oops without just using a virtual platform by themselves. How do we make sure it is fun and exciting , and help foster love of math and problem solving from a young age.

Additional question: I want to understand more about "personalized instruction" - and hear more about enrichment/extensions for students that are built into the curriculum. (Vs supplemental things like ST math) I want to hear how students at all levels will be challenged while still working with the class.

Hi XXX

Thank you for your thoughtful question and for attending Community Math Night. In the elementary grades, our goal is exactly what you described, building a love of math, keeping learning engaging, and ensuring students are challenged in meaningful, hands-on ways rather than through independent online tasks.

This year, we are piloting Amplify Desmos and Experience Math. Any curriculum we select will need to provide rich, interactive instruction and opportunities that foster creativity, collaboration, and problem-solving—fully aligned with our Portrait of a Learner.

Once a curriculum is chosen, we will focus on professional development so teachers can confidently implement engaging, effective instructional practices. Our math specialists will continue to provide embedded coaching and support throughout the year.

We are also reviewing the elementary schedule to identify ways to create more opportunities for both support and enrichment. Personalized instruction relies on strong data: we currently use STAR, and both pilot programs include high-quality unit assessments that give teachers real-time insight into student understanding. These data points help our teachers and math specialists plan targeted support and enrichment that keeps students motivated, confident, and appropriately challenged.

Please feel free to reach out with any other questions—I'm always happy to talk more.

QUESTION: What are the “gaps” you are seeing in students who are taking outside enrichment, like Russian math? This was referenced many times, referred to as a barrier to allowing a student to move into accelerated or higher level classes.

What are the new Starmath assessments telling us about student progress? Which 2 curricula are being piloted and at which schools/grades?

Hi XXX

Thank you for your questions and for attending Community Math Night. In response to your first question about gaps we sometimes see when students participate in outside math programs: many external programs take a different philosophical approach than NPS. We emphasize depth of understanding, reasoning, and the ability to explain and model mathematical ideas.

For example, a student may learn a procedure for dividing fractions in an outside program, but when asked *why* the algorithm works or to represent it with a visual model, they may struggle. Our goal is for students to develop conceptual understanding that allows them to apply their mathematical thinking flexibly and creatively in new situations.

Regarding your question about STAR data, the assessment provides growth measures that help us understand how students progress over time. Last year, 48% of K–8 students demonstrated high growth (above the 66th percentile) from fall to spring, and 28% demonstrated typical growth (35th–65th percentile). We have only completed one STAR administration so far this year and will have updated growth information after the winter assessment in January.

As for the curriculum pilots, here is what we are currently piloting:

K–5: Amplify Desmos Math and Experience Math (Savvas)
6–8: Amplify Desmos Math and MidSchoolMath
9–12: CPM and Carnegie Learning

Please feel free to reach out with any additional questions—I’m always happy to provide more information.

QUESTION: Can you clarify the relationship between the statistics on 30% of students not meeting grade level standards vs. 70% of 4th and 5th graders ready for skills 3 levels above what they are being taught? Is this a major bifurcation? A grade level fluke? I would normally expect a smoother continuum, closer to a bell curve. Or is what they are being taught not actually grade level standards and so it is not apples-to-apples?

Hi XXXX

Thank you for your questions and for attending math night. The two data points you're referencing come from different assessments that measure different things, which is why they don't line up as neatly as a single bell curve.

Here's what's happening:

1. The "30% not meeting grade-level standards" data comes from MCAS.

MCAS measures whether students meet the *full set* of Massachusetts grade-level standards — including conceptual understanding, application, communication, and multi-step problem solving. It is a high-rigor, standards-based assessment.

2. The "70% ready for skills three levels above" data comes from STAR.

STAR is a norm-referenced adaptive test. It shows how students perform compared to a national sample and the level of skills they are *ready* to learn next, not necessarily whether they demonstrate full mastery of the Massachusetts standards.

STAR's "grade level" bands map onto typical national progressions, which sometimes differ from the depth and complexity required in the MA frameworks.

3. So why do the numbers look so far apart?

- MCAS measures depth of mastery of MA standards.
- STAR measures readiness on a national skill progression.

A student can show readiness for higher-level procedural or skill-based items on STAR while still needing deeper conceptual work, modeling skills, or multi-step reasoning to meet the expectations of grade-level MCAS standards.

This is *not* evidence of a major bifurcation in our students, it's simply two different tools giving two different types of information.

4. Are students being taught below grade-level standards?

No — the curriculum is aligned to the Massachusetts frameworks. The difference comes from the nature of the assessments, not from students being taught below grade level.

5. What we use the data for:

- MCAS helps us analyze curriculum alignment and conceptual understanding.
- STAR helps us identify readiness, growth, and targeted support needs throughout the year.
- Together, they help teachers plan instruction that both fills gaps and stretches students who are ready for more.

QUESTION: What is the pathway for a current 6th grade student to take alg 1 in 8th grade and bc calculus prior to senior year.

Will there be lottering for the AP classes or how will you determine who is able to take the class? How and when will you get rid of lottering if it does exist? Will it be removed for all AP core classes? (E.g. math, science, english, etc)

What classes beyond bc calc will be provided? What applied math, engineering, and science courses will be offered?

Additional question:

Why does newton North AP Calc have a much higher failure rate than newton south in AP Calc?

(2023 AB: 67% at NN vs 33% at NS has a 2 or less).

(2024 BC: 25% at NN vs 3% at NS)

What is being done to resolve this?

Is the same curriculum and pace being taught in the same classes at both schools?

Hello,

Thank you for your questions and for attending math night.

Here are the responses to your questions.

1. Pathway for a typical current 6th grader to reach Algebra 1 in 8th grade and BC Calculus before senior year

Current 6th graders will have access to a pathway that allows students who demonstrate readiness to take Algebra 1 in 8th grade. Students who follow this pathway typically take:

- Grade 8:
    - Algebra 1 or IM 1 (still being decided)
    - Accelerated Algebra I or IM 1
- Grade 9:
    - Algebra I or IM 1
    - Geometry or Integrated Math 2

    - Integrated Math 2 Honors or Geometry Honors

- Grade 10:
    - Algebra 2 or Integrated Math 2
    - Algebra 2 or Integrated Math 2 Honors
    - Precalculus
    -
- Grade 11:
    - Precalculus
    - Honors Precalculus
    - Calculus
    - Statistics
    - AP courses

- Grade 12:
    - Financial Literacy
    - Statistics
    - Precalculus
    - Honors Precalculus
    - AP Calculus AB or BC (or higher-level math electives depending on interest)
    -

Students who show aptitude to move ahead will be identified through a pathway placement process that is currently being developed by the high schools.

2. Lottery for AP classes

At this time, there is no lottery for AP math courses, and we do not anticipate using a lottery for AP Calculus. Students enroll based on their course performance, readiness, and conversations with teachers and counselors.

If there are capacity issues in a particular year, schools work to increase sections before limiting enrollment. Our goal is to remove barriers to AP access, not add them.

3. Courses beyond BC Calculus

Both high schools are currently looking to offer a range of courses beyond BC Calculus, and as we redesign pathways, we anticipate expanding opportunities. These typically include:

- Post-Calculus mathematics (e.g., Multivariable Calculus, Linear Algebra, or advanced electives depending on staffing)

- Statistics pathways (AP Statistics, data science electives)

- Applied math and engineering electives (e.g., engineering, computer science, coding, robotics, advanced STEM electives)

Specific offerings vary year to year based on staffing, enrollment, and student interest, but both schools are committed to broadening advanced STEM options.

4. Differences in AP Calculus outcomes between Newton North and Newton South

AP Calculus classes must teach the mandated concepts and skills outlined in the College Board's course framework for either AB or BC. Schools are checked through a mandatory AP Course Audit where they submit their syllabus for approval to ensure it meets College Board standards and aligns with the course's requirements.

Differences in AP outcomes can come from many factors, including:

- the number of students taking the test

- the range of readiness levels in each section

- differences in course pathways or prior preparation

As part of the curriculum review work, we will be looking to increase collaborations between NNHS and NSHS to focus on alignment and teacher professional development for these courses.

Our goal is to ensure that students at both high schools experience aligned curriculum, pacing, rigor, and support structures, so outcomes are strong regardless of which school they attend.

QUESTION: If we have a 7th grader in NPS what will math look like for him in 8th grade next school year in preparation for high school? He in math but has not been talking extracurricular math like some of his peers and we are concerned that he not underestimate his own math ability.

Hi XXX

Thank you for your question and for attending Community Math night. We want to reassure you that he is on a strong pathway, and not having taken extracurricular math will *not* limit his opportunities in middle or high school.

In 8th grade, all students will participate in a coherent, rigorous math course designed to build the key knowledge and skills needed for high school. The course is intentionally structured so that every student, regardless of outside math experiences, receives the support and challenge needed to be fully prepared for the high-school math sequence.

Many students enter high school without having taken any additional or extracurricular math. Your child will still have access to all high-school pathways, including the option to take advanced math courses if and when he is ready.

We also pay close attention to students' confidence in math. Sometimes students underestimate their own abilities, and part of our work is helping them build confidence, engage deeply in challenging tasks, and recognize themselves as capable math learners. Your son will have opportunities next year to stretch his thinking, demonstrate his strengths, and grow his skills within the classroom.

Please feel free to reach out with any additional questions.

QUESTION: Are the elementary schools meeting expectations for curriculum and core math skills? My daughter says that most kids are in private math lessons and she is lagging behind because she is not in one of those programs. How augmented is the math instruction at each level?

For the kids transitioning from elementary to middle school, how far are the -30% lagging and in what skills are they lagging (ie multiplication)?

Dear XXX

Thank you for reaching out with these thoughtful questions and for attending math night. We want to reassure you that our elementary schools are meeting expectations for curriculum and core math instruction, and students are being taught the full Massachusetts grade-level standards.

1. Are elementary students receiving adequate core math instruction?

Yes. All elementary schools follow the MA Frameworks for Mathematics, which are rigorous and conceptually focused. While some students participate in outside tutoring programs, this is not necessary to be successful in our curriculum. We focus on helping students develop:

- strong number sense
- conceptual understanding
- problem-solving and reasoning
- the ability to explain and model their thinking

These are skills that procedural, fast-paced outside programs do not always emphasize.

2. Is your child “behind” because others are in private math programs?

In most cases, no. Students who attend outside programs often learn procedures before concepts, which can make them appear “ahead” temporarily but lead to gaps in deeper understanding later.

Our teachers regularly monitor student progress using classroom work, unit assessments, and STAR data to ensure that each child is getting the right level of challenge and support.

3. How augmented is instruction at each level?

We use several layers of support and enrichment:

- Differentiated instruction embedded in daily lessons

- Small-group instruction based on ongoing assessment data
- Math specialist support in classrooms
- Enrichment through problem-solving, games, and extension tasks
- Targeted support during intervention blocks (if needed)

Augmentation does not rely on students working independently on digital programs.

4. For students approaching middle school, how far behind are the ~30% who are not meeting expectations?

The “30%” figure refers to MCAS performance statewide—not a single specific skill deficit. Students who do not meet expectations typically need strengthening in:

- multi-step problem solving
- applying concepts in new situations
- explaining or modeling their thinking
- operational fluency (for a smaller subset—e.g., multiplication facts)

Some students may need reinforcement with foundational skills (like multiplication), but most are not 2–3 grade levels behind. Instead, they may need more support with depth, reasoning, and stamina on complex tasks.

How we address these gaps

As students move into middle school, we use:

- STAR growth data
- Common assessments
- Teacher input
- Small-group support structures

- Summer bridge programs (when appropriate)

These help ensure students enter the middle school pathways prepared and confident.

QUESTION: As a parent, i would like to be more empowered to be part of my son's support system. When he asks questions, i would love to have a resource when i can look up what he has been taught and the mechanics of how to solve certain problems. For example how should he approach long division? Is he supposed to have an approach to long division?

Dear XXX

Thank you for your question and for attending math night. We absolutely want parents to feel empowered to support their children, and you are naming something we hear from many families, a desire for clear, accessible information about the strategies students are learning in class.

For a topic like long division, for example, students are taught a progression of models and strategies, such as area models, place-value reasoning, and partial quotients, before moving into the traditional algorithm. This helps them understand *why* the procedure works, not just how to execute steps.

Families *will* have access to clear guidance with the new curriculum adoption.

One of the benefits of the curriculum options we are piloting (Amplify Desmos Math and Experience Math) is that they offer:

- Parent-friendly unit overviews
- Examples of strategies students are using
- Step-by-step problem explanations
- Videos or visuals that show exactly how a concept is taught

Our goal is that when the new curriculum is adopted, families will have a single, consistent resource where you can quickly look up:

- What is being taught this unit
- The strategies your child is learning
- Sample problems and models
- How to support at home without needing a tutor

In the meantime, if your son is struggling with a particular method or if you'd like to understand how a concept is being taught right now, please don't hesitate to reach out to his teacher or our math specialists. They are always happy to share examples, clarify strategies, or offer guidance.

We want parents to feel confident and included, and building clear, accessible family resources is an important part of our math review and curriculum selection process.

QUESTION: Glad that the curriculum is being revised to stay current and meet the needs of students. I would like to learn more about high school pathways in math. For example, is there an honors math or more accelerated math class for student who are performing at a higher level? Can they place into higher level by taking a placement test? For example, my public school district placed me one grade higher in math stating in 7th grade.

Hello,

Thank you for your question and for your interest in the future high school math pathways. As part of our math curriculum review, we are working to ensure that our high school offerings meet the needs of *all* learners — including students who are ready for greater challenge and acceleration.

1. Are there honors or accelerated options in high school?

Yes. Both high schools offer multiple levels of math, including honors and advanced pathways. Students who are ready for faster-paced or more rigorous coursework can choose to take:

- Honors Algebra 2 / Honors Geometry (or their Integrated Math equivalents)
- Precalculus (Honors and standard)
- AP Statistics
- AP Calculus AB and BC
- Additional advanced STEM electives depending on the year (e.g., Multivariable Calculus, Linear Algebra, Data Science, Engineering, Computer Science)

Our goal is to maintain **rigorous choices at multiple entry points**, so students can accelerate when they are ready.

2. Can students place into higher levels with a placement test?

We do **not** use a single high-stakes placement test. Instead, placement decisions are based on **multiple measures**, including:

- Student performance in their current course

- Teacher recommendations
- Common assessments
- STAR data (in middle school)
- Evidence of conceptual understanding and readiness for the pace/rigor of the next course

This approach helps ensure that students are placed into courses where they can be successful, not just accelerated procedurally.

3. Can students accelerate earlier, similar to your experience?

Acceleration *is* possible, but it is done thoughtfully and with support. Currently:

- Students can accelerate by taking the equivalent of **Algebra 1 in 8th grade** if they demonstrate readiness.
- In high school, students may accelerate by **skipping a course** (e.g., moving directly from IM2 to Precalculus) if their performance data and teacher input support that placement.
- We anticipate that the new curriculum will include clearer **pathway guidance** for families so acceleration is transparent, predictable, and equitable.

4. What's next?

As we complete the pilot and select a new curriculum, we will publish:

- A clearer **PK–12 math pathway chart**
- Guidance for acceleration and honors placement
- Resources for families about course sequencing and expectations

Our goal is to provide students who are ready for more challenge with **strong, well-supported pathways** — without relying on private tutoring or outside programs to make that possible.

Would like a response but no name and no email entered

QUESTION: Please resist the temptation to turn math into a qualitative subject. Students don't like 'guess what's in my head' style questions. Math problems should have clearly defensible quantitative solutions. Students gain confidence in their math skills when they find *the* solution to a problem, too often their only opportunity is to provide opinion-based arguments that resemble an essay they might write in an English or History class.

QUESTION: I appreciate the work behind the new math pathways and the goal of combining rigor, equity, and access. The district's vision is for math to be a gateway rather than a gatekeeper.

My request is simple: create an explicit in-district pathway beginning with Algebra I in 7th grade that leads to AP Calculus BC in 11th and multivariable calculus in 12th, without relying on Russian School, AoPS, private tutors, or early college courses. We already have many students at or above grade level by 4th grade, and some are two or more years ahead by middle school. They need a supported pathway inside the system.

I also urge the district to offer discrete, traditional math classes rather than integrated courses. Integrated sequencing makes external advancement difficult and forces families into a shadow system that not all can access.

Answer: At this time, we will offer the combination of the capacity for students to accelerate starting in grade 8 and moving through grade 12, and we will begin the equivalent of Algebra I in grade 8–a year before it is currently offered. We will gauge the new changes in the coming years and see if additional supports and acceleration is warranted based on student achievement needs.

QUESTION: Hello, and thank you for inviting families to share feedback.

I am a parent of an English Learner (ELL) student who also has an IEP, and I would like to share some questions and concerns regarding the future math pathways and curriculum.

Thank you for all of the work being done to improve math instruction in Newton.

As a parent, I hope to better understand how these changes will support students like my child and open more opportunities for their future success.

➡️ If possible, I would appreciate a personal follow-up by email.

You can reach me at: xxxxx

Thank you again for your time and support.

QUESTION: Can you clarify what you mean by more students can access AP. Does that mean they do not need the courses listed as prereq to register to AP classes since students cannot get an opportunity to skip earlier math classes

In general, when students have access to accelerated/honors courses early in their high school experience, they are more likely to enroll in advanced courses (such as AP) later in their high school experience. We are encouraging students to enroll in courses that may feel like a stretch for them and to set high expectations for themselves. The prerequisite skills and understandings are the same for all students in AP courses.

It is our responsibility to support students as needed, both with the content of the course and their belief that they can achieve at high levels. We offer self-paced opportunities such as summer work or academic year courses through Schoology that make prerequisite skills for AP courses explicit to the students. At both high schools, interventions are provided during WIN blocks in order to support student success in these additional courses.

QUESTION: What is being done to challenge students who don't show obvious interest and talent in math?

Hi Ms. xxx

Thank you for attending math night and for your question about how we challenge students who may not yet show a strong interest in math. This is an important part of our work, and I want to share how we support *all* learners, especially those who may have hidden strengths or need experiences that build confidence.

In NPS, we design our math program so that meaningful challenge is part of everyday instruction. Teachers use open-ended, high-cognitive-demand tasks that allow every student to think deeply and extend their reasoning.

We also use a variety of ways to understand students' mathematical thinking. Many students who are quiet or hesitant in whole-group settings show strong reasoning in small groups or written work. Teachers use these insights to offer targeted extension tasks and opportunities for enrichment.

Our curriculum includes activities which allow all students to engage meaningfully while also offering room for students to stretch and explore more advanced ideas when they are ready. This approach ensures that students who may not self-identify as "math kids" still have access to rich, challenging mathematics.

Finally, we are intentional about supporting students' confidence and sense of identity in math. We help students understand that mathematical ability grows with effort, strategies, and support. Often, once students see themselves succeed in new ways, their interest and motivation increase as well.

Please feel free to reach out with any additional questions.