BILL & MELINDA GATES foundation

Request for Information for Bright Spots in Middle Years Math

Responses due May 18, 2018, by 5:00pm PDT
Contact Email: **BrightSpotsMath@gatesfoundation.org**

Overview of Our K-12 Strategy

Guided by the belief that all lives have equal value, the Bill & Melinda Gates Foundation's K-12 Education program aims to significantly increase the number of Black, Latino, and low-income students who earn a high school diploma, enroll in a postsecondary institution, and are on track in their first year to earn a credential with labor-market value. We know that opportunity and support are particularly lacking for Black, Latino, and low-income students in the current public education system, and we believe that our communities and our economy will be strongest when all students have the opportunity to achieve their full potential. Learn more about our K-12 strategy here.

About Our Research & Development Math Strategy

As part of our ongoing effort to support innovation in K-12 education, we are developing a focused research and development (R&D) program to support Black, Latino, and low-income students. One of our first projects is aimed at the achievement of high levels of performance in middle years mathematics (approximately grades 3-9). This R&D program aims to develop, test, and create mechanisms to support the use of a set of specific teaching and learning approaches that drive faster and deeper learning in mathematics, enabling Black, Latino, and low-income students to be fully prepared to be successful by 9th grade.

We are looking for "breakthrough" approaches, which we believe can support students to consistently:

1. Gain substantially more than a year of learning growth in a single year, enabling those that are behind to accelerate their progress towards grade level standards
2. Demonstrate levels of student engagement and motivation in mathematics that show promise in driving significantly higher levels of knowledge and application, and/or
3. Achieve high levels of proficiency on summative grade-level assessments

Our ultimate goal is to dramatically improve middle years math instruction, so that every Black, Latino, and low-income student deeply knows, is able to use, and enjoys math by the time they are in high school.

To begin building our middle years math R&D program we are issuing a request for information ["RFI"] that seeks to identify approaches that already have begun to show significant promise in supporting Black, Latino, and low-income students to achieve high

performance in mathematics and/or approaches that support grades 3-12 teachers of mathematics.

Why We are Issuing an RFI

Math is everywhere. Ask any adult if they have ever needed math to make a decision or solve a problem, and most will confirm they regularly use math in their daily lives (evaluating car loans, consumer mortgages, cooking, etc.) and their jobs (analyzing data, designing and building products, managing their small businesses, etc). Becoming a high performer in mathematics, as a student, ultimately unlocks power. It opens up a world of opportunities for students to have access to colleges and careers where they can thrive. The Gates Foundation aims to improve student learning outcomes in math so that all students, particularly Black, Latino, and low-income students, thrive in life and their future careers. (Read our background page for additional insights into the state of middle years math).

We are issuing an RFI that seeks to identify existing breakthrough programs, models, platforms or tools, supporting Black, Latino, and low-income students[1] to achieve high performance in mathematics and/or approaches that support teachers to become highly effective in teaching math. We know that the best ideas come from the people doing the work in the field. We want to learn from organizations that have already developed highly effective approaches for serving Black, Latino, and low-income students (and their teachers) in middle years math that we may not have worked with or been aware of in the past. In addition to identifying outstanding programs, models, tools, platforms and practices, we also seek to understand approaches to community engagement and research used to create these breakthrough approaches, hear bold 10-year visions for the potential reach and impact of breakthrough approaches in math from leading program and model developers, and gain perspective on what is holding the field back from pursuing these bold visions.

We acknowledge that transforming instructional practices and student learning outcomes in middle years math is a complex undertaking, and we are under no illusion that a single approach can fully address these challenges. However, many in the field have been tackling teaching and learning challenges in mathematics for years. We are interested in better understanding the nature and progress of approaches that are showing dramatic improvements in a range of related student learning outcomes.

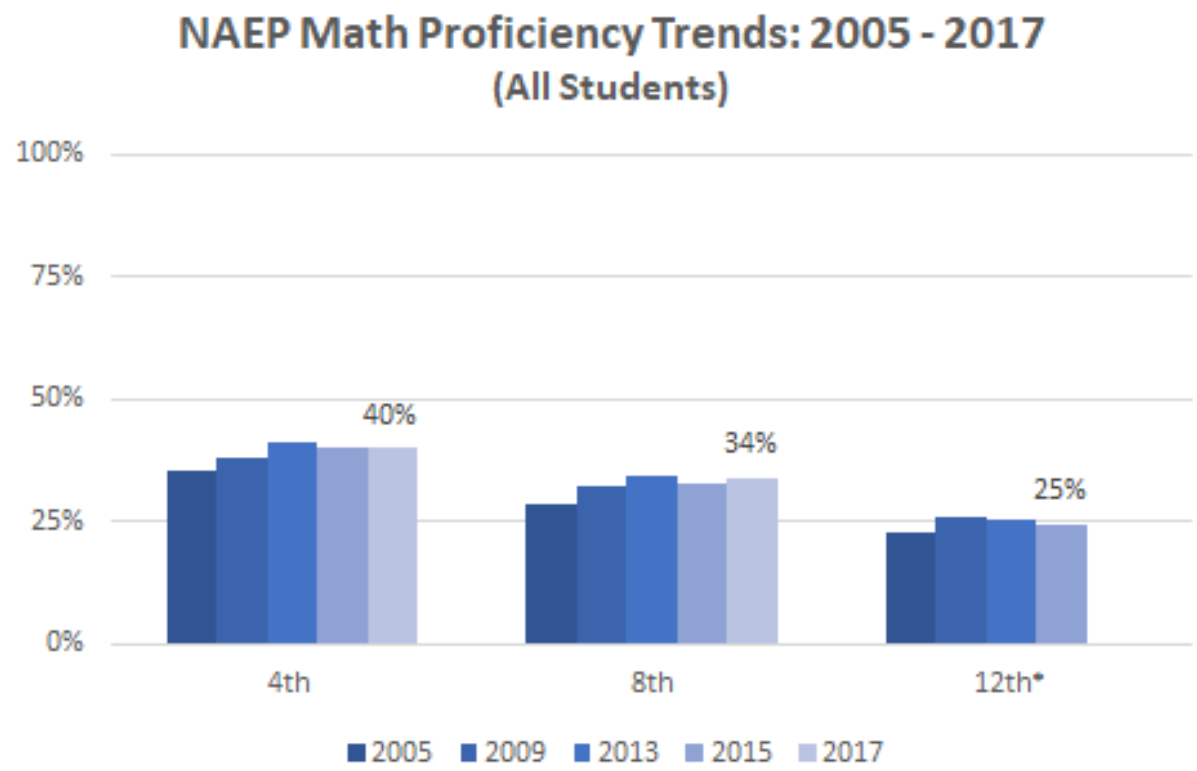
To respond to our RFI, please visit this link.

For further information, please consult the background information or visit the FAQs and Glossary pages. Join us on May 3rd 11 am-noon PDT (2-3 pm EDT) for an optional webinar. During the webinar you'll learn more about the math R&D program and you'll be able to ask questions about this RFI. Please register here.

[1] Low-income students can be from any race or ethnicity.

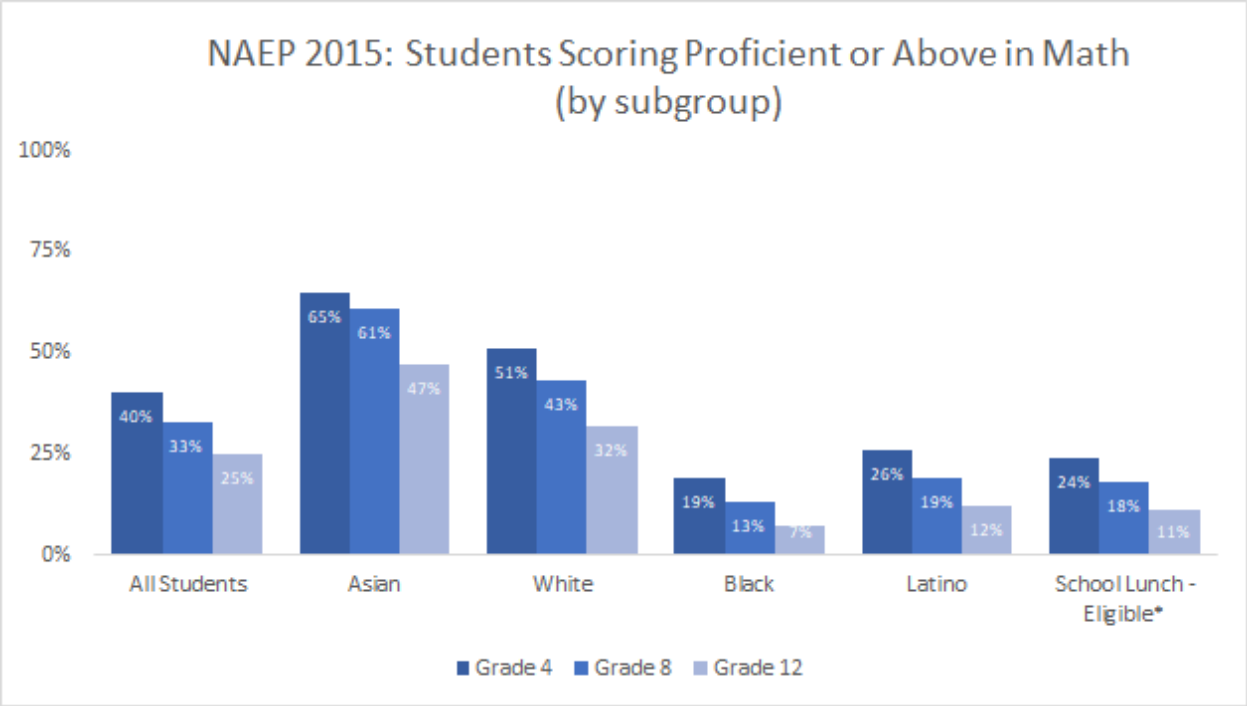
Background

Opportunity
Mathematical proficiency is not only a prerequisite for students to meet current high school graduation requirements, it also is critical in unlocking opportunity for students to pursue a wide range of post-secondary pathways and STEM careers. Currently, performance in mathematics is far below standards for all students. The percentage of students meeting grade-level standards continues to decrease through high school, creating barriers to graduation and postsecondary pathways early in life.



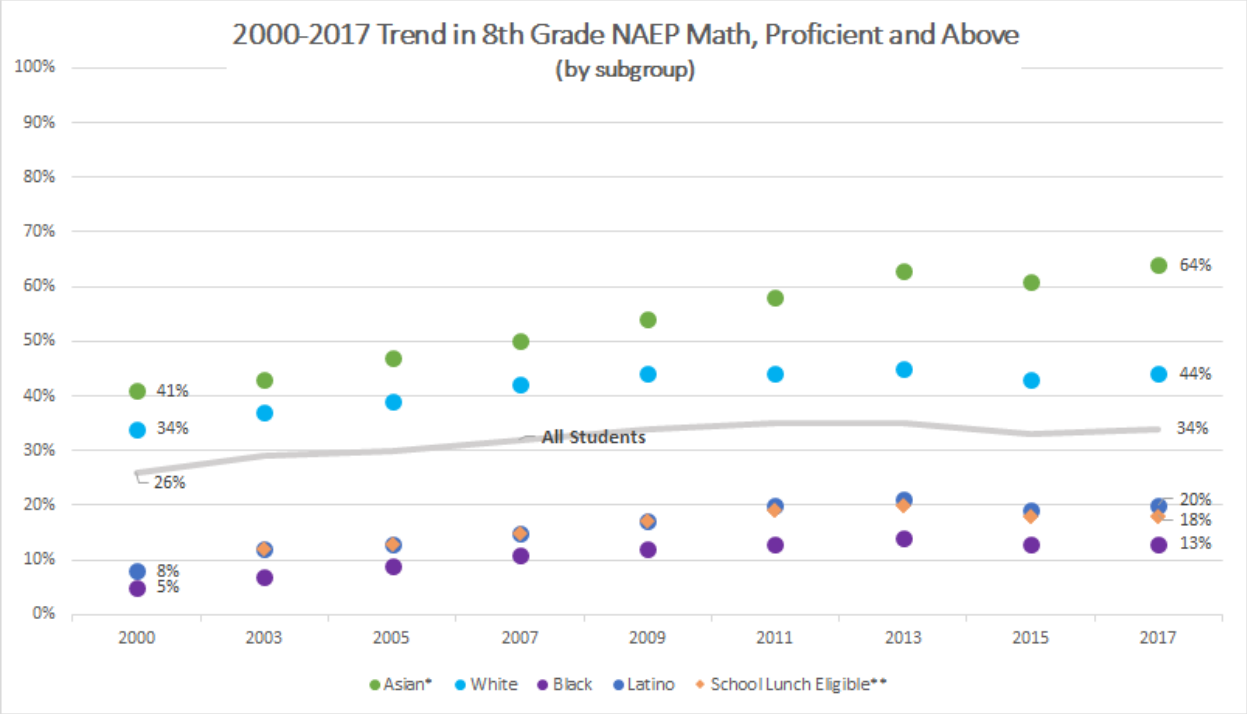
** 2017 12th Grade NAEP scores not yet available*

A deeper look at 2015 NAEP performance in mathematics reveals math performance varies widely for many student demographic groups in 4th, 8th, and 12th grades.



** This student subgroup is reported as "Eligibility for National School Lunch Program (NSLP)", abbreviated for space*
Source: https://www.nationsreportcard.gov/

Many worthy efforts are underway to improve the teaching and learning of mathematics, through higher standards, well-designed curricula, teacher professional development and targeted student interventions. Since 2000, Asian students have shown significant improvements in math; other student subgroups have achieved smaller improvements over the same period. While incremental improvements have been achieved in many states and districts over the last 15 years, Black, Latino, and low-income students often remain significantly underserved by today's approaches. Student performance in all subgroups remains well below NAEP proficiency standards by the middle grades.



** 2011-2017, this student subgroup as reported as Asian. 2000-2009, this student subgroup is reported as Asian/Pacific Islander.*
*** This student subgroup is reported as "Eligibility for National School Lunch Program (NSLP)", abbreviated for space. Data unavailable in 2000.*
Source: https://www.nationsreportcard.gov/reading_math_2015/#mathematics/acl?grade=8

We recognize we are leading with data that shows the need to better support Black, Latino, and low-income students in math. It is important to state a more complete story—not all Black, Latino, and low-income students are struggling academically. We recommend reading The Counter Narrative Full Report for more details.

Through this RFI, we seek to identify and understand existing “bright spots,” positive outlier programs, practices, instructional models, platforms or tools that are demonstrating significant improvement in the motivation, engagement, learning growth, and/or overall proficiency rates in mathematics with Black, Latino, and low-income students. We hypothesize that these bright spots may be found in community-based or after-school programs, summer programs, tutoring programs, within school systems or charter management organizations, in groups of schools, or by the developers of math products, professional development services, and teacher preparation services. For the purposes of this RFI we are looking to both understand the latest innovations and discover opportunities to further improve these approaches.

We are interested in hearing about existing approaches that may include: targeted student interventions, teacher professional development solutions, non-cognitive interventions (i.e. learning environments that develop students' learning mindsets, motivation, identity, sense of belonging, and relevancy of math), diagnostic approaches, rapid remediation approaches, community-developed approaches, and/or approaches that include: tech-enabled personalization, new learning modalities (i.e. virtual reality and augmented reality), artificial intelligence, and/or learning science. We are open to other areas or approaches we may not have listed, if you have already demonstrated success with Black, Latino, and/or low-income students in math. We look forward to hearing additional ideas as part of your submission.

We hypothesize a number of areas of research and development are needed to further validate and improve existing breakthrough approaches, through co-constructed R&D with developers, providers, educators, students, researchers, and communities. This RFI is a first step to identifying a set of potential partners from a range of backgrounds, operating in a range of contexts, who may be instrumental in driving specific research & development opportunities in the future.

Throughout this RFI, we define "middle years math" as the knowledge, skills and competencies defined by current commonly adopted mathematics standards for grades 3-9. We recognize that there is no common definition of "breakthrough" results that should qualify an approach as a positive outlier. The following are a set of proxy indicators that we are using to guide our exploration. We are interested in learning about instructional or professional development processes, practices, tools, services, models, programs, or products that achieve <u>any</u> of the high proficiency or high growth measures listed below for Black, Latino, and/or low-income students in math:

- Attainment of high levels of proficiency on grade level summative assessments for the majority of the target population
- Consistent year-on-year growth on benchmark/interim assessments, greater than 1.5 years of learning in a year (or equivalent in a summer program)
- Consistent year-on-year growth on summative assessments, greater than 1.5 years of learning in a year (or equivalent in a summer program)
- Measurable improvements in student engagement and attitudes towards math of at least 20% in one year
- Measurable improvements in teacher self-efficacy assessments and mindsets/beliefs about student learning in math

Thank you for your interest in responding to this RFI.

We are interested in learning about breakthrough approaches that meet three criteria. If you answer yes to *all* three questions, we want to hear from you. Please

read our Glossary for how we define these criteria. Please check that you meet each criteria before proceeding. If you still have questions, please check our FAQs page or contact us at **BrightSpotsMath@gatesfoundation.org.**

1. Have you already developed and tested a breakthrough approach in math?
2. Does your approach serve at least one grade between grades 3-12 in math?
3. Has this breakthrough approach demonstrated significant progress towards math performance for a minimum of 50 or more Black, Latino, and/or low-income students?

Eligibility:
Responses are welcome from all capable sources including, but not limited to, after-school program operators, nonprofit organizations, for-profit companies, communities, researchers, universities, not-for-profit research institutions, summer school program operators, whole school models, and public and private companies.

Deadline: May 18th, 5:00 pm PDT

Click here to respond to the RFI.

Disclaimer:
Responses to this RFI are not part of a screening or application process and will not result in funding. The foundation seeks this information solely for information and planning purposes, which may result in future programs and/or Requests for Proposals (RFP). This RFI is an opportunity for practitioners, developers and field leaders to inform and shape the potential focus of the foundation's middle years math R&D program. Aggregated learnings from the RFI will be anonymized and shared with respondents and the field in the form of a brief written summary on our K-12 website. The foundation may also follow up with some respondents to feature their work in a case study series.

Request for Information Questions:

A. CONTACT INFORMATION:

1. **Your First Name:**
2. **Your Last Name:**
3. **Your Email Address:**
4. **Your Organization:**
5. **Your Organization's Facebook Handle:**
6. **Your Organization's Twitter Handle:**
7. **Your Country:**
8. **Your Town or City:**

9. **Your State:**
10. **Your Organization Type:** Pick the closest choice from the drop-down box.
    - after-school program operator
    - charter management organization
    - department of education
    - edtech developer
    - for-profit company
    - nonprofit organization
    - publisher
    - research institution
    - school
    - school district
    - summer program operator
    - university
    - other (please specify)

11. **Your Breakthrough Approach Type:** You may select more than one.
    - after-school program
    - approach based on the science of learning
    - approach using augmented or virtual reality
    - approach using artificial intelligence
    - community-developed approach
    - curriculum
    - diagnostic approach
    - non-cognitive intervention (learning mindsets, motivation, identity, sense of belonging, etc.)
    - rapid remediation student intervention
    - teacher prep
    - teacher professional development
    - tech-enabled personalization approach,
    - whole school model
    - other (please specify)

12. **Is your organization minority-owned or led?**
    Yes | No

13. **Are you submitting this RFI in partnership with another organization?**
    Yes | No

14. **Has your organization been funded by the Gates Foundation in the past?**
    Yes | No

15. **How did you hear about this RFI?**

In your RFI response, we encourage you to be as concise as possible.

B. DESCRIPTION OF YOUR BREAKTHROUGH APPROACH:

1. **Approach Overview:** In 300 words or less, please describe your breakthrough approach.
    - What is it?
    - Who is the approach for?
    - How is it implemented?
    - When was this approach established?

2. **Stage of Approach:** Would you describe this approach as early stage, growth stage, or mature stage? (Select one).
    - **Early Stage:** Your approach is a prototype undergoing field testing, but the approach is not yet ready to for widespread use.
    - **Growth Stage:** Your approach is in use in a range of educational settings with teachers and students, you have validated its impact, and you are focused on expanding its reach.
    - **Mature Stage:** Your approach is already in widespread use and you are focused on continuous improvement and steady growth in usage.

3. **User Focus:** Who are your target users. You may select more than one:
    - Students
    - Teachers
    - Families
    - Other

    Note: For each user group you select, you'll be asked how many users you are serving. For students, you will be asked to estimate the percentage of Black, Latino, and low-income students your approach is serving. For example, if you are serving 100 students, you might have 20% are Black, 25% are Latino, and 35% are low-income. (The percentage does not need to add up to 100%, as we recognize your approach may be serving other student groups not listed. In addition, there may be overlap between the race demographics and economic status).

4. Based on your data, which subgroups are you serving exceptionally well? You make select more than one:
    - Black
    - Latino
    - Low-Income
    - Other

5. **Community Engagement:** In 300 words or less, please describe your community engagement.
    - Which stakeholders were engaged in the design, development and implementation of this breakthrough approach?
    - How do you continue to engage your target community?

6. **Evidence/Research Base:** In 300 words or less, what evidence or research base did you leverage when you established this approach? (Please highlight any evidence or research related to users, math, science of learning, and/or social emotional learning).

7. **Measurement and Improvement:** In 500 words or less, please describe your measurement and improvement plan.
    - What are the results of your breakthrough approach, as measured in student outcomes?
    - How else are you measuring the success of your approach?
    - How are you able to attribute learner outcomes to your approach?
    - Are you able to track your success over multiple years with the same users (students, teachers, families, etc.)?
    - What is your process for ensuring your approach continues to improve?

8. **Pricing:** In 300 words or less, please describe your pricing.
    - What is the pricing structure of your approach?
    - Who generally pays for this approach (i.e. district, schools, families, etc.)?

9. **Organization:** In 300 words or less, please describe your organization.
    - Please provide an overview of your organization (organizational structure, size, governance, key capacities).
    - How would you describe the diversity of your leadership team?
    - How does the diversity of talent in your organization strengthen your ability to work in communities that serve low income, Black or Latino youth?

Thank you!
We really appreciate the time you've taken to respond to questions 1-9. Thank you! Questions 10-13 are all **optional** questions. We want to be conscious of the time it takes to respond to RFIs. If you are satisfied with your RFI responses, feel free to scroll down and click the "Save" button. If you have more to share, please proceed and answer any **optional** questions that resonate with your team. Please do not feel obligated to answer every optional question.

OPTIONAL QUESTIONS

10. **Student Voice (optional):** Please collect a few student testimonials in written form for students who have used your breakthrough approach. Be sure that the students are not identifiable and the appropriate consent has been secured (in compliance with FERPA and any other privacy laws). Ideally, we'd like to hear from students who have gone from struggling in mathematics to now proficient or above proficient in their grade level of mathematics. Please share their responses to the questions below, without editing (we want to honor and understand the voice of students). Ask them to respond to these questions:
    - What do you like about math?
    - What advice would you give a friend who is struggling at math? Specifically, what helped you get better at math?
    - How can adults help students get better at math?

    Please share the grade of the student (i.e. 8th grade student) but do not share student names or personally identifiable information.

11. **Defining Breakthrough Approach Results (optional):** At the top of this RFI we shared proxy measures of how we are defining breakthrough results (see below). What additional proxy measures should we consider, that your organization already uses and for which it has already developed rigorous instruments to measure those results?
    - Attainment of high levels of proficiency on grade-level summative assessments for the majority of the target population
    - Consistent year-on-year growth on benchmark/interim assessments, greater than 1.5 years of learning in a year (or equivalent in a summer program)
    - Consistent year-on-year growth on summative assessments, greater than 1.5 years of learning in a year (or equivalent in a summer program)
    - Measurable improvements in student engagement and attitudes towards math of at least 20% in one year
    - Measurable improvements in teacher self-efficacy assessments and mindsets/beliefs about student learning in math

C. VISION FOR LONG TERM TRANSFORMATIVE IMPACT

12. **Responding to this section is optional.**
    - **Future Vision:** What impact might your breakthrough approach achieve over a 10-year timeframe? What additional development or capacity would be needed by you or others to achieve this level of impact?
    - **Obstacles and Risks:** What are the barriers that are getting in the way of achieving your vision?

- **Collaboration Opportunities**: What types of collaborators or partnerships could significantly enhance your ability to pursue your vision?

D. WHAT ELSE SHOULD WE KNOW?

13. Please share any other comments here. (optional)

Thank you for your participation in this RFI.

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Glossary

Black, Latino, and/or Low-Income Students: Throughout this RFI you may notice a reference to "Black, Latino, and/or low-income" students. The "and/or" in this phrase is critical for two reasons for prospective RFI respondents:

1. Low-income is not tied to any race or ethnicity. For example, a breakthrough approach achieving exceptional math results with low-income students who are Asian, White, Native American, etc. should respond to this RFI.

2. Breakthrough approaches that are achieving exceptional math results with at least one of these student groups (Black, Latino, or low-income) should respond. It is not necessary for an approach to be achieving exceptional results in all three student demographic groups.

Breakthrough Approaches: Highly successful programs, practices, instructional models, platforms or tools, supporting Black, Latino, and low-income students (and their teachers) to achieve high performance in mathematics (grades 3-12). See breakthrough results for more details.

Breakthrough Results: We recognize that there is no common definition of "breakthrough" results that should qualify an approach as a positive outlier. The following are a set of proxy indicators that we are using to guide our exploration. We are interested in learning about instructional or professional development processes, practices, tools, services, models, programs, or products that achieve any of the high proficiency or high growth measures listed below for Black, Latino, and/or low-income students in math:

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Bright Spots: Positive outlier programs, practices, instructional models, platforms or tools that are demonstrating significant improvement in the motivation, engagement, learning growth, and/or overall proficiency rates in mathematics with Black, Latino, and low-income students and their teachers. We think that these bright spots may be found in community-based or after-school programs, summer programs, tutoring programs, within school systems or charter management organizations, in groups of schools, or by the developers of math products, professional development services, and teacher preparation services.

Middle Years Math: Through this RFI we define "middle years math" as the knowledge, skills and competencies defined by current commonly adopted mathematics standards for grades 3-9. We acknowledge this is a large grade-range. Our overarching math goal for this investment portfolio is: to ensure every Black, Latino, and low-income student deeply knows, is able to use, and enjoys math by 9th grade. Since 9th grade is the goal for this portfolio, the team believes we cannot start addressing math in 9th grade, but will have to begin work in earlier grades to increase the likelihood of improving math outcomes for students by 9th grade. In speaking with several subject matter experts (researchers, educators, solution developers), we concluded that beginning in upper elementary would be critical to the success of this work. For the purposes of this RFI we are looking for breakthrough approaches in math, grades 3-12. We hypothesize some high school breakthrough approaches could be transferable in the lower grades.

Teachers Serving Black, Latino, and/or Low-Income Students: Approaches serving math teachers between grades 3-12, are encouraged to respond to this RFI. The phrase "Black, Latino, and/or low-income" is not about a teacher's demographic, but in reference to looking for approaches that have demonstrated success with teachers who are working with Black, Latino, and/or low-income students.

For general questions about the RFI process, consult our FAQs page. For questions not on our FAQs page, please send an email to BrightSpotsMath@gatesfoundation.org. While we won't be able to respond to individual questions, we will frequently update our

FAQs pages with questions and answers emailed in to BrightSpotsMath@gatesfoundation.org. We also invite you to our optional webinar on May 3rd from 11 am-noon PDT (2-3 pm EDT). You'll get the opportunity to learn more about our math R&D program and ask questions about the RFI. Register here.