



May 13, 2019

Dear Parents and/or Guardians of Fifth Grade Students:

As Princeton's K-12 Mathematics Supervisor, I would like to share some information with you about the mathematics program in our middle school and some positive changes to the placement process for students entering 6th grade.

Pre-Algebra Accelerated for All:

Currently in 6th grade, there are two courses available titled Pre-Algebra and Pre-Algebra Accelerated. Both courses use the same text, [Larson Pre-Algebra](#). The differences between the two courses are minimal. In fact, the only difference is that the accelerated course has been more aligned to the textbook with a few concepts addressed with more depth. Enrollment in the Pre-Algebra Accelerated course has been steadily increasing over the past ten years causing a demand for more sections of the course. Based on this year-long review, there is no reason to prevent any student from accessing the accelerated curriculum. Therefore, for the 2019-2020 school year, all incoming 6th grade students will receive the current Pre-Algebra Accelerated curriculum. Please note that the pathways to high school math courses will not change.

Equity and Academic Support:

Mr. Jason Burr, the Principal at John Witherspoon Middle School, and I are working to address the district goal of closing the achievement gap through the objective of enhancing equity and access to a quality high level mathematics curriculum for all students. Our goal is to provide access to academic opportunities to all students – without barriers and with support. Providing access to the Pre-Algebra Accelerated curriculum is an important step in that direction. We are removing a barrier by exposing all students to the accelerated curriculum. We are providing support for students through AIS Math classes scheduled in addition to their math course. We will also offer a new 8th grade course option, Geometry. This option is for 8th graders who complete Algebra I Accelerated but do not take Algebra II Accelerated.

Differentiation for All:

While teaching the Pre-Algebra Accelerated curriculum to all students, the 6th grade teachers will focus on instructional strategies that put students at the center of the classroom supporting their learning needs at all levels through differentiation. This includes both enrichment through challenging problem solving tasks and interventions through flexible small group instruction. In order to provide the 6th grade teachers with information on every student to plan for differentiated instruction, we will still complete the end of year testing for 5th grade students. That includes the administration of the Iowa Algebra Aptitude Test and a constructed problem solving response task. We will also be implementing a digital tool, [ixl.com](#) for mathematics, to support teachers in their efforts to differentiate, support, and enrich the learning experience for all students. To help you understand the changes happening we have enclosed the following: a fact sheet, a frequently asked questions document, a chart of math course sequences in grade 6 - 12, an overview of the Standards for Mathematical Practice, and a permission form for the administration of the Iowa Algebra Aptitude Test.

Please note that the Iowa Algebra Aptitude Test (IAAT) will be administered one day during the weeks of May 20, 2019 - June 10, 2019. The final date will be determined at each school by the administration and classroom teachers upon review of school activities. It is critical that you return the enclosed permission form to your child's teacher **no later than Friday May 17, 2019**. Thank you for your cooperation.

Respectfully,

Mrs. Kelly Curtiss, K-12 Supervisor of Mathematics & Business Education

Cc: Mr. Steven Cochrane, Superintendent, Ms. Anna Gonzalez Kosek, Assistant Superintendent of C & I, Building Principals
5th & 6th Grade Teachers

Enclosures (4)

6-8 Mathematics Course Sequencing

Grade	Curriculum				Support****
6th	Pre-Algebra Accelerated*				Pre-Algebra LAB (AIS 6)
7th	Algebra I Part 1	Algebra I Accelerated			Algebra I Part 1 LAB (AIS 7)
8th	Algebra I Part 2	Algebra I**	Geometry***	Algebra II Accelerated	Algebra I LAB (AIS 8)

*For the 2019-2020 school year, the 6th grade math curriculum will follow the Pre-Algebra Accelerated curriculum that is currently in place. Teachers will differentiate instruction as needed for all students.

**8th Grade Algebra I is a course option for new students transferring into JW that have not had a full Algebra 1 course. This is a rigorous full year course of study for 8th grade students.

***Geometry is being piloted as a new course offering for 8th grade students only. This course is offered to students that have completed Algebra I Accelerated in 7th grade, but do not want or need to take Algebra II Accelerated in 8th grade.

****Students, qualified through multiple measures of data, may be provided with extra math support and intervention in addition to their core math course. AIS Math will be scheduled during their exploratory period. This additional support and intervention program is tiered and tailored to the needs of each individual student.

9-12 Mathematics & Computer Science Course Sequencing

This chart represents typical course progressions.
Every student is scheduled according to their individual history using transcripts and other data.

8th Grade Start Pt	Math 8 or Integrated Math		Algebra I Part 2 or Algebra I	Geometry	Algebra II Accelerated	NA	NA	
9th grade	Algebra I & Algebra I Plus [†]		Geometry & Geometry Plus [†]	Algebra II	Geometry Accelerated*	Python	CS Principles**	
10th grade	Geometry & Geometry Plus [†]		Algebra II & Algebra II Plus [†]	Precalc	Precalculus Accelerated*	JAVA Obj. Oriented Programming: JAVA		
11th grade	Algebra II & Algebra II Plus [†]		Precalc & Precalc Plus [†]	Calculus or AP Calc AB*	AP Stats*	AP Calc. BC*		AP CS
12th grade	App. and Modeling of Math	Intro to Stats & Discrete Math	Precalc & Precalc Plus [†]	Calculus	AP Stats*	Multivariable Calculus & Linear Algebra*		Algorithms & Data Structures

[†]Plus classes are offered as optional, extra supplementary courses for students in need of extra support for success in class. These courses take the place of an elective and do not fulfill graduation requirements. Algebra I, Geometry, & Algebra II are required courses for high school graduation

*Refer to the PHS Program of Studies for qualifying pre-requisite criteria for accelerated math courses.

**CS Principles can be taken in any grade 9-12.

Students interested in taking courses concurrently may only do so with Algebra II and Geometry or AP Stats and Calculus with the approval of the Math Supervisor. Student must meet the prerequisite criteria for both courses.

Frequently Asked Questions

1. **What is the Iowa Algebra Aptitude Test (IAAT)?** This standardized assessment is being used in school districts across the country to predict success in Algebra and Pre-Algebra. Since this is a test of aptitude, no preparation is required or suggested. Children are simply encouraged to have a good night's sleep the evening before and to have a nutritious breakfast on the day of the test. This 50-minute test will be administered to fifth-graders on one day during the weeks of May 20, 2019 - June 10, 2019 in a similar fashion as the NJSLA. This test is difficult and may be stressful for some students. **As a parent, you must decide if it is appropriate for your child to take this test. Please complete and return the enclosed form by May 17, 2019 to your child's fifth grade teacher.**
2. **What is a constructed task?** Each 5th grade student will receive one open-ended (constructed task) to complete showing their mathematical thinking and understanding as focused in the eight mathematical standards found in the NJ Student Learning Math Standards. The work will be scored using a rubric that addresses both the correct answer as well as the child's articulation of the answer.
3. **Will the new 6th grade structure for math prevent or delay my child's ability to enter future accelerated courses?**
 - a. No. All students will still have the opportunity to complete Algebra II Accelerated in 8th grade. In fact, this will increase access to higher level mathematics courses by delaying the decision to divide students into leveled sections.
4. **If my student struggles in math, how will s/he be provided with support?**
 - a. Extra support will be provided through AIS Math according to the following tiers:
 - i. **Tier 1** students are all students in the General Education setting that receive instruction based on district curriculum.
 - ii. **Tier 2** students are identified as in need of extra support by the classroom teacher through differentiation & small group instruction through a workshop/station model.
 - iii. **Tier 3** students are identified as in need of intervention by the AIS teacher according to data collected through multiple measures. These students will receive math instruction in addition to their regular classroom experience during the Exploratory Program (EP) period 1-5 times a week.
5. **What does AIS mean?**
 - a. Accelerated Intervention Services means additional instruction which supplements the instruction provided in the core curriculum and assists students in meeting performance expectations. Accelerated intervention services are intended to assist students who are at risk of not achieving learning standards in mathematics or who are at risk of not gaining the knowledge and skills needed to meet or exceed designated performance levels. This will include both additional instruction that supports the core curriculum, filling gaps, and addressing basic skills needs.
6. **How is AIS Math different from Math PLUS?**
 - a. In past years and currently at JW, students that needed extra support in math were enrolled in PLUS classes at JW. PLUS classes were scheduled only twice a week during the exploratory period. These classes were taught by the same teacher students had for their core math course. AIS is similar in the fact that it will be scheduled during the exploration period. AIS is different from PLUS, because there will be one certified math teacher dedicated to all AIS instruction. This teacher will be different from the teacher in their core math course. Additionally, AIS can and will be able to offer an increased level of support for students that need it. Based on student need and qualifying criteria, AIS can be scheduled anywhere from 1 to 5 times a week for students.

7. What enrichment/extension opportunities will my child have in math?

- a. JW offers many STEM related after school clubs and activities including the following:
 - i. Mathletes
 - ii. Science Olympiad
 - iii. Robotics Club
 - iv. Engineering Club
 - v. Chess Club
 - vi. For more information regarding extracurricular opportunities at JW please click the following link:
<https://www.princetonk12.org/john-witherspoon-middle-school/activities/phs-clubs>
- b. The core curriculum at JW middle school is very challenging and already well advanced when compared to the State and the Nation. Additionally, advanced students will be provided with differentiated enrichment opportunities within the classroom with a focus on challenging problem solving tasks.

8. What will the criteria be for 6th graders to qualify for Algebra I Accelerated in 7th grade?

- a. Students must complete their 6th grade math course with a final average of an A, 94%. This is the same criteria currently in place. Initial placement decisions for 7th grade will be made in January/February. Final placement decisions will be reviewed and determined in June/July. Additionally, a matrix of data will be collected and evaluated throughout the school year.

9. If my child earns an A in 6th grade, but as a parent decide that I do not want him/her to be placed in accelerated math for various reasons, what should I do?

- a. All you need to do is communicate this with both your child's teacher and guidance counselor. You do not have to enroll in accelerated courses.

10. Will my child be able to skip over a math course at JW?

- a. No. The Princeton High School policy for advancing over a course applies for rising 9th-12th grade students only. To learn more about this option please read through the following document: [Advancing a Course Packet](#)

11. Will students be able to take 2 math courses concurrently at JW?

- a. No. This is an option for high school students only, and has never been offered at JW. The middle school schedule does not provide the ability to do this.

12. Where can I access the math curriculum for JW middle school courses?

- a. You can view the curriculum on the district webpage by clicking the following link:
<https://www.princetonk12.org/princeton-high-school/academics/curriculum-overview/middle-school-curriculum>

13. What are the textbooks used for each math course at JW?

- a. 6th Grade Pre-Algebra courses use the [Larson Pre-Algebra](#) text. New for the 2019-2020 school year, 7th Grade Algebra I Part I, 7th Grade Algebra I Accelerated, 8th Grade Algebra I Part II, and 8th Grade Algebra I courses all use the [enVision Algebra I Blended Print and Digital Interactive Text](#). The 8th Grade Geometry and Algebra II Accelerated courses also use the [enVision Blended Print and Digital Interactive Text](#) for Geometry and Algebra II.

14. Will incoming 6th grade students be able to be placed in Algebra I Accelerated if they meet the criteria? What is the criteria?

- a. This will be determined on an individual bases by the evaluation process that includes additional testing and be limited to only the most advanced students. This will be by invitation only.

15. How will students new to the district be placed into math classes at JW?

- a. All new students will be required to take a placement test. Upon registration, the guidance counselor and math supervisor will use information from transcripts and results from the placement test to determine the best course placement for each student.

Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them.

- Interpret and make meaning of the problem looking for starting points. Analyze what is given to explain to themselves the meaning of the problem.
- Plan a solution pathway instead of jumping to a solution.
- Can monitor their progress and change the approach if necessary.
- See relationships between various representations.
- Relate current situations to concepts or skills previously learned and connect mathematical ideas to one another.
- Continually ask themselves, "Does this make sense?" Can understand various approaches to solutions.

5. Use appropriate tools strategically.

- Use available tools recognizing the strengths and limitations of each.
- Use estimation and other mathematical knowledge to detect possible errors.
- Identify relevant external mathematical resources to pose and solve problems.
- Use technological tools to deepen their understanding of mathematics.

2. Reason abstractly and quantitatively.

- Make sense of quantities and their relationships.
- Are able to decontextualize (represent a situation symbolically and manipulate the symbols) and contextualize (make meaning of the symbols in a problem) quantitative relationships.
- Understand the meaning of quantities and are flexible in the use of operations and their properties.
- Create a logical representation of the problem.
- Attends to the meaning of quantities, not just how to compute them.

6. Attend to precision.

- Communicate precisely with others and try to use clear mathematical language when discussing their reasoning.
- Understand meanings of symbols used in mathematics and can label quantities appropriately.
- Express numerical answers with a degree of precision appropriate for the problem context.
- Calculate efficiently and accurately.

3. Construct viable arguments and critique the reasoning of others.

- Analyze problems and use stated mathematical assumptions, definitions, and established results in constructing arguments.
- Justify conclusions with mathematical ideas.
- Listen to the arguments of others and ask useful questions to determine if an argument makes sense.
- Ask clarifying questions or suggest ideas to improve/revise the argument.
- Compare two arguments and determine correct or flawed logic.

7. Look for and make use of structure.

- Apply general mathematical rules to specific situations.
- Look for the overall structure and patterns in mathematics.
- See complicated things as single objects or as being composed of several objects.

4. Model with mathematics.

- Understand this is a way to reason quantitatively and abstractly (able to decontextualize and contextualize).
- Apply the math they know to solve problems in everyday life.
- Are able to simplify a complex problem and identify important quantities to look at relationships.
- Represent mathematics to describe a situation either with an equation or a diagram and interpret the results of a mathematical situation.
- Reflect on whether the results make sense, possibly improving/revising the model.
- Ask themselves, "How can I represent this mathematically?"

8. Look for and express regularity in repeated reasoning.

- See repeated calculations and look for generalizations and shortcuts.
- See the overall process of the problem and still attend to the details.
- Understand the broader application of patterns and see the structure in similar situations.
- Continually evaluate the reasonableness of their intermediate results



Dear Parents/Guardians:

Please select one of the choices below, complete the form and return it to your child's fifth grade teacher no later than **May 17, 2019.**

Thank you,

Kelly Curtiss
Supervisor of Mathematics

Parent Permission Form

Iowa Algebra Aptitude Test

Please check only one of the following:

_____ YES, my child (please print) _____
IS permitted to take the Iowa Algebra Aptitude Test (IAAT) one day during the weeks of **May 20, 2019 - June 10, 2019.**

_____ NO, my child (please print) _____
IS NOT permitted to take the Iowa Algebra Aptitude Test (IAAT) during the weeks of **May 20, 2019 - June 10, 2019.**

I have read the process overview and understand that this test will be one of several measures used to understand my child's academic abilities and needs in mathematics for the sixth grade.

Parent/guardian name (please print): _____

Parent/guardian signature: _____

School: _____