

Cranbury Middle School Mathematics Program

2018- 2019

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Cranbury School Math Program Mission

The Cranbury School Math Program provides a curriculum that:

1. Ensures that all students gain mastery of foundational algorithms and concepts.
2. Allows parents to support their children.
3. Allows kids to be creative with math once they have the basic skills and vice versa.
4. Is accessible to all kids.
5. Prepares students to move on to a more advanced mathematics course in the middle and high schools.

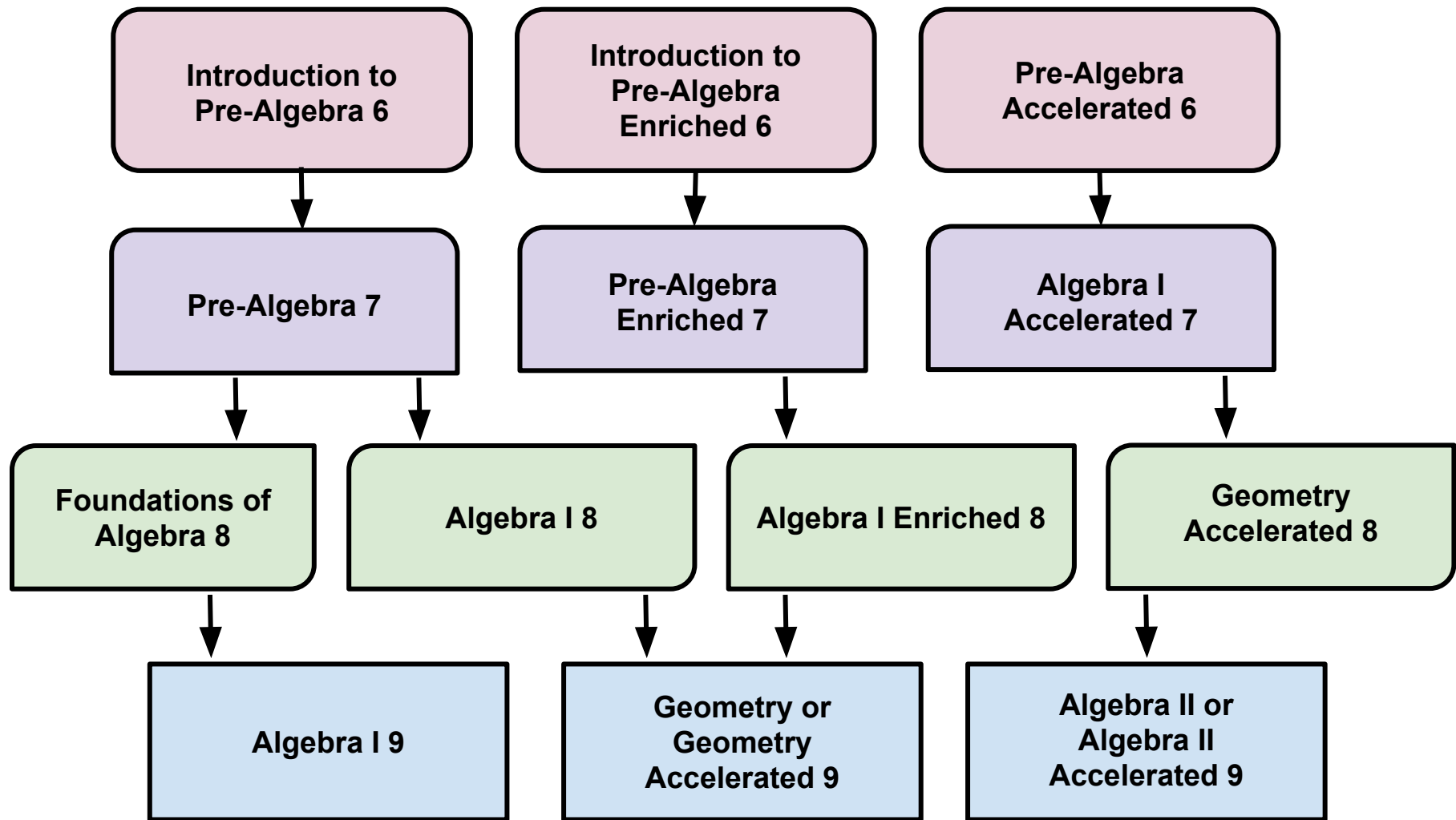
Cranbury School Math Program Beliefs

We believe that:

1. All students can learn math at high levels, and will reach these levels at their own pace.
2. Students should be provided the time needed to explore various mathematical models and real-world applications.
3. Multiple representations improves math understanding.
4. Students learn better when given high quality feedback and encouragement.
5. When students believe in themselves their brain works differently.
6. Mistakes grow the brain.
7. Automaticity and fluency are critical to the algebraic process.

Overview of Cranbury Middle School Math Courses





Princeton High School and Math Graduation Requirements

- All current students will need **to take and pass** the Algebra I PARCC end of course assessment as a graduation requirement. See [High School Math Requirements](#)
- PARCC assessments are offered in the spring of each academic year and a student must be enrolled in the course of the PARCC assessment he/she is taking.
- *If the Algebra PARCC test is taken, but not passed, students will need to also take the Geometry PARCC and Algebra II PARCC in order to be eligible for the NJDOE Portfolio Appeal for Math.*

Math Course Placement Criteria

5th to 6th Grade



Assessment Measure	Purpose
Iowa Algebra Aptitude Test (IAAT)	Determines Algebra Readiness
NorthWest Evaluation Association Measures of Academic Progress <u>NWEA MAP</u>	Measures Proficiency with 6+ Math Standards Measures Growth in Math from Fall to Spring
(5) Classroom Performance Assessment Questions	Measures each Domain of Study and is another measure of some of the <u>Math Practices</u> Scored by Math Teachers
<u>UCARES Math</u>	Rates Proficiencies of Developing Mathematicians Completed by Math Teachers
5th grade Math Grade	Prior performance in Math
<u>CogAT</u>	Quantitative, Verbal and Non-Verbal Reasoning Linked to Success in Math

Iowa Algebra Readiness Assessment

Assesses how prepared a student is for the study of Algebra

The IAAT consists of 60 items administered over approximately 40 minutes

Friday, June 5, 2018-
5th Grade Administration

Handwritten algebraic work showing the solution to the equation $4x^2 - 22 = x^2 + 5$. The steps are as follows:

$$4x^2 - 22 = x^2 + 5$$
$$4x^2 = x^2 + 27$$
$$3x^2 = 27$$
$$x^2 = 9$$
$$x = 3$$

NorthWest Evaluation Association
Measures of Academic Progress
(NWEA MAP)

Computer-Based, Untimed

Adaptive- questions presented
increase or decrease in difficulty

Not limited to standards within a
grade level

Valid and reliable outside measure



Standards for Math Practices

1. Make sense of problems and persevere in solving them
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure
8. Look for and express regularity in repeated reasoning



Understanding

Comprehending concepts, operations, and relations

Computing

Carrying out procedures

Applying

Formulating and solving mathematical problems

Reasoning

Using logic to explain a solution or justify why the mathematics works

Engaging

Seeing math as useful, sensible, and doable

Study Habits

Class preparation, seeking out assistance when needed



Cognitive Abilities Test (CogAT)

Quantitative Battery

Three subtests:

1. Number Analogies
2. Number Puzzles
3. Number Series

Practice Questions for Cognitive Abilities Test® (CogAT®)

10. Look at the numbers in each row below. There is a rule that governs the order in which the numbers occur in the series. Figure out the rule and then choose the number that comes next from the answer choices below.

17 34 51 68 85 ___

- A. 100 B. 101 C. 102 D. 103 E. 104

11. Choose the word that best completes the sentence below.

The Democratic party elected a _____ in our state.

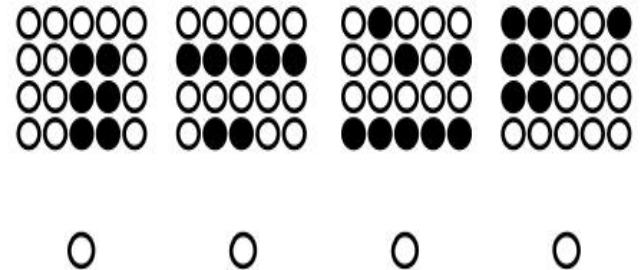
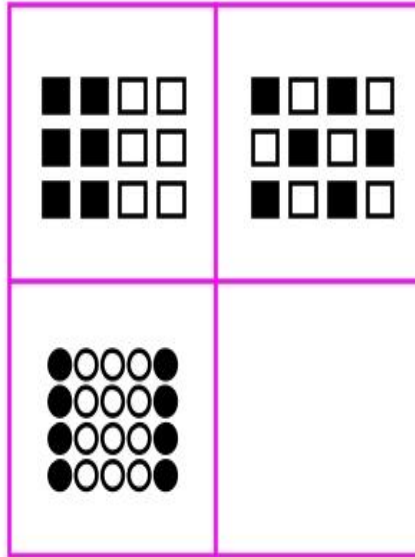
- A. doctor B. governor C. president D. chief E. commander

Click to continue to more questions 

Non-Verbal Battery

Three subtests:

1. Figure Matrices
2. Paper Folding
3. Figure Classification



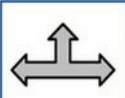


Verbal Battery

Three Subtests:





1. Sentence Completion
2. Picture/Verbal Classification
3. Picture/Verbal Analogies

Test Question Preview

The pictures in the boxes on the top belong together in a certain way. Choose the picture that belongs with the bottom picture in the same way the pictures on top belong together.

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Explanation Next

TestPrep-Online

Introduction to Pre-Algebra		Introduction to Pre-Algebra <i>Enriched</i>		Pre-Algebra Accelerated	
Criteria	Score/Level	Criteria	Score/Level	Criteria	Score/Level
CogAT	Below a 90	CogAT	90 or above	CogAT	97 or above
IARA	5 or below	IARA	6 or above	IARA	7 or above
NWEA MAP	RIT range (TBD)	NWEA MAP	RIT range (TBD)	NWEA MAP	RIT range (TBD)
Benchmark OE	Below 10	Benchmark OE	10 or above	Benchmark OE	13 or above
UCARES	Below 16	UCARES	16-19	UCARES	20 or above
Prior Math Performance	Confirming Measure	Prior Math Performance	Confirming Measure	Prior Math Performance	Confirming Measure

Six Placement Criteria

Math Course Placement Criteria

7th to 8th Grade

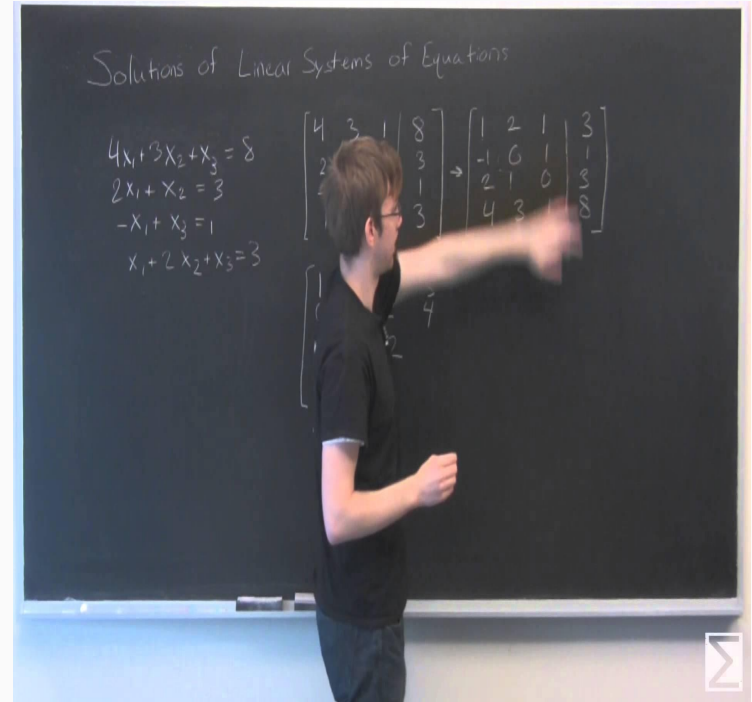


Foundations of Algebra		Algebra I	
Criteria	Score/Level	Criteria	Score/Level
NWEA MAP	RIT range (TBD)	NWEA MAP	RIT range (TBD)
End of 7th Grade Test	89 or below	End of 7th Grade Test	90 or above
Prior Math Performance	Confirming Measure	Prior Math Performance	Confirming Measure
PARCC7	Overall: 4 or below Algebra domain: Approached Expectations	PARCC7	Overall: High 4 or above Algebra domain: Met or exceeded Expectations

Four Placement Criteria

Algebraic Procedures - Fluency Expectations for Algebra I

1. Substituting a value into a variable expression and evaluating
2. Solving linear equations and inequalities
3. Solving a proportion
4. Solving a system of linear equations or inequalities through linear combinations or substitution
5. Iterating recursive functions
6. Finding equivalent expressions by distributing, combining like terms, etc.
7. Performing arithmetic with polynomial and rational expressions
8. Solving quadratic equations by factoring, completing the square, applying the quadratic formula, etc.



Middle School Math Enrichment Opportunities

Contests

- Christian Brother's Academy Math Contest
- Continental Math League
- Math Olympiad
- New Jersey Math League
- American Mathematics Competitions 8 and 10
- MathCounts

Before School Clubs

- MathCounts Prep Club
- Math Club





TIME FOR QUESTIONS