

Avon Public Schools

Curriculum Review & Revision

SEPTEMBER 29, 2014

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Past vs Present Curriculum Design

Past	Present
<ul style="list-style-type: none">• Created independently by small grade-level subgroups	<ul style="list-style-type: none">• K-12 committee• Variety of groups working across & within grades
<ul style="list-style-type: none">• Revision completed in 3-5 days	<ul style="list-style-type: none">• 5-year continuous review cycle
<ul style="list-style-type: none">• Used state & national standards	<ul style="list-style-type: none">• Uses state & national standards
<ul style="list-style-type: none">• Standards listed as learner outcomes for grade level	<ul style="list-style-type: none">• Specific standards identified in each unit for each grade level/course
<ul style="list-style-type: none">• Content & skills listed as sample indicators/assessments of learning for the year	<ul style="list-style-type: none">• Content & skills specified & required within each unit• Assessments directly aligned with content & skills within each unit

Past vs Present Curriculum Design

Past	Present
<ul style="list-style-type: none">• List of skills presented in isolation• Teachers created own context	<ul style="list-style-type: none">• Long-term transfer goals guide work• Skills & understandings developed & applied within the context of a theme
<ul style="list-style-type: none">• Core curriculum materials listed – wide range of specificity across grade levels• In some cases the textbook was the curriculum	<ul style="list-style-type: none">• Primary instructional materials (used by all teachers for that grade level/course) identified for each unit

Past vs Present Curriculum Design

Past	Present
<ul style="list-style-type: none">• Mile wide & an inch deep• Focus on knowledge, comprehension & some application	<ul style="list-style-type: none">• Fewer topics & going deeper• Focus on application, analysis, synthesis & evaluation
<ul style="list-style-type: none">• Very limited types of assessments• Assessed mastery of content• Few common assessments• Independently scored	<ul style="list-style-type: none">• Multiple types of assessments defined & utilized• Assesses mastery of content & independently transferring knowledge to new situations• Greater number of common assessments w/ rubrics• Collaborative analysis of student performance to better inform instruction

Avon's Curriculum Design Model

Common Curriculum Model – Understanding by Design (UbD)

Formal 5-Year Curriculum Review Process

K-12 Vertical & Horizontal Articulation

Primary Goals of Curriculum Reviews & Revisions

Ensure alignment with state or national standards

Create curriculum documents that provide clarity, detail & accountability

Ensure rigor & relevancy for all students

Standards vs. Curriculum

Standards

- Developed at the national or state level
- Expectations for learning written as statements
- Detail the concepts & skills students are expected to know & be able to do
- Do not define remediation or advanced work
- Do not specify what texts or instructional materials to use

Standards vs. Curriculum - continued

Curriculum

- Designed locally
- Specifies what students will learn at each grade level or course
- Specifies the units & pacing of instruction
- Details types of assessments used to determine mastery of the content
- Indicates what primary materials & resources will be used to support teaching & learning

Avon's Use of State & National Standards

Specify what students should know & be able to do at the end of each grade level or course

Are broken out among the units

Are all covered over the course of the year

Only those assessed are listed in the unit

Some are woven through all units

Curriculum Review & Revision Timeline

English Language Arts – Aug. 2012

Math – Jan. 2013

Science – June 2013

Social Studies – Jan. 2014

World Language – Jan. 2015

Curriculum Updates & Communications

- Board of Education Meetings
 - Formal Presentations
 - Assistant Superintendent Updates
- Superintendent's Weekly & Special Updates
- Public Presentations
- PTO Presentations

K – 8 ENGLISH LANGUAGE ARTS

English Language Arts Instructional Shifts

Reading, writing & speaking grounded in evidence from the text, both literary & informational

Intentional experiences and engagement with complex texts and their rich vocabulary

Move from anthology to primary texts

Anchor Standards for Reading

Key Ideas & Details

Craft & Structure

Integration of Knowledge & Ideas

Range of Reading & Level of Text Complexity

Anchor Standards for Writing

Text Types & Purposes

Production & Distribution of Writing

Research to Build & Present Knowledge

Range of Writing

Vision of College & Career Readiness in English Language Arts

Demonstrate independence

Build strong content knowledge

Respond to the varying demands of audience, task, purpose, and discipline

Comprehend as well as critique

Value evidence

Use technology and digital media strategically and capably

Come to understand other perspectives and cultures

K-8 Continuum of Big Ideas (Themes)

Grade	Theme
Kindergarten	All About Me
Grade 1	Seasons and Change
Grade 2	Communities
Grade 3	Connecticut: Past, Present , Future
Grade 4	Regions of the United States
Grade 5	Early History of United States
Grade 6	Exploring the World Through Literature & Life
Grade 7	Growing Up and Surviving
Grade 8	Prejudice and the Understanding of Others

MATHEMATICS



Mathematics Instructional Shifts

Focus: on both procedural skills & fluency as well as conceptual understanding

Coherence: link to major topics within and across grades

Rigor: complex problems that require students to think & revise their models & procedures & persevere

Mathematics Instructional Shifts

K- 5 “unspiraled”

Concepts & skills prioritized by grade level/course

Shift from exposure to mastery

Greater focus on fewer topics

7th grade – Pre-Algebra for all students

8th grade - Algebra I for all students

Standards for Mathematical Practice

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

Mathematical Domains

Learning Progressions across Mathematical Domains

K	1	2	3	4	5	6	7	8	HS	
Counting and Cardinality									Number and Quantity	
Number and Operations in Base Ten						The Number System				Number and Quantity
			Number and Operations: Fractions			Ratios and Proportional Relationships (6 and 7)				
Operations and Algebraic Thinking						Expressions and Equations			Algebra	
								Functions	Functions	
Geometry						Geometry			Geometry	
Measurement and Data						Statistics and Probability			Statistics and Probability	

Areas of Focus

Grade	Key concepts instructed
K – 2	Addition and subtraction, measurement using whole number quantities
3 – 5	Multiplication and division of whole numbers and fractions
6	Ratios and proportional reasoning; early expressions and equations
7	Ratios and proportional reasoning; arithmetic of rational numbers
8	Linear algebra

Flexible Grouping – Grade 6

Students may be moved within & between classes based on performance

Groups have a range of abilities

Students provided with choices to allow them to go as deep as they are willing & capable of doing independently

Grade: 6

Domain: Number System

Cluster Heading: Compute fluently with multi-digit numbers and find common factors and multiples.

Standard: CCSS.MATH.CONTENT.6.NS.B.4

Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor. *For example, express $36 + 8$ as $4(9 + 2)$.*

Problem 1

Find the greatest common factor (GCF) of 24 and 36.

1, 2, 3, 4, 6, 8, 12, 24

1, 2, 3, 4, 6, 9, 12, 18, 36

Answer: GCF= 12

Problem 2

Judith is planning a party for her younger brother. She has **36** prizes and **24** balloons. How many children can she have at the party so that each child gets an equal number of prizes and an equal number of balloons? (*Tip: Which concept are you going to use: factors or multiples?*) **Show all your work below!**

Answer: Judith can have 1, 2, 3, 4, 6, or 12 children at the party if each has to get an equal numbers of prizes and an equal number of balloons. For example, if she has 4 children at the party, each child will get 9 prizes and 6 balloons. ($4 \times 9 = 36$ prizes and $4 \times 6 = 24$ balloons)

24: 1, 2, 3, 4, 6, 8, 12, 24

36: 1, 2, 3, 4, 6, 9, 12, 18, 36

Problem 3

The cast of a play had a party to celebrate opening night of the new production. There were 20 cookies and 40 carrot sticks served as refreshments. Each cast member had the same number of whole cookies and the same number of carrot sticks. Nothing was left over. The drama teacher did not eat. How many cast members *might* have been at the party? **Explain your thinking.**

Answer: There could have been 20, 10, 5, 4, 2, or 1 members that the party.

20: each gets 1 cookie and 2 carrot sticks

10: each gets 2 cookies and 4 carrot sticks

5: each gets 4 cookies and 8 carrot sticks

4: each gets 5 cookies and 10 carrot sticks

2: each gets 10 cookies and 20 carrot sticks

1: gets it all: 20 cookies and 40 carrot sticks

Problem 4

An orchestra conductor divides 48 violinists, 24 violists, and 36 cellists into ensembles. Each ensemble has the same number of each instrument. What is the greatest number of ensembles that can be formed? How many violinists, violists, and cellists will be in each ensemble? Design a schedule for the orchestra conductor so that she can see each ensemble twice a week for 30 minutes each session.

Answer:

Factors of 48: 1, 2, 3, 4, 6, 8, 12, 16, 24, 48

Factors of 24: 1, 2, 3, 4, 6, 8, 12, 24

Factors of 36: 1, 2, 3, 4, 6, 9, 12, 18, 36

The greatest common factor of 48, 24, and 36 is 12. So, the greatest number of ensembles that can be formed is 12. Then each ensemble will have 4 violinists, 2 violists, and 3 cellists.

Honors – Grades 7 & 8

Large percentage of grade level content & skills is similar between both levels

Honors level:

- Problems use more difficult numbers & applications
- A few additional topics are introduced

Problem Examples

Sample Problem #1 – Justin was in his car for 3 hours, traveling at a speed of 65 mi/h. How far did he travel?

Sample Problem #2 – If Justin leaves now and drives at 66 km/hr, he will reach Alton just in time for his appointment. On the other hand, if he has lunch first and leaves in 40 minutes, he will have to drive at 90 km/h to make his appointment. How far away is Alton?

Additional Honors Topics

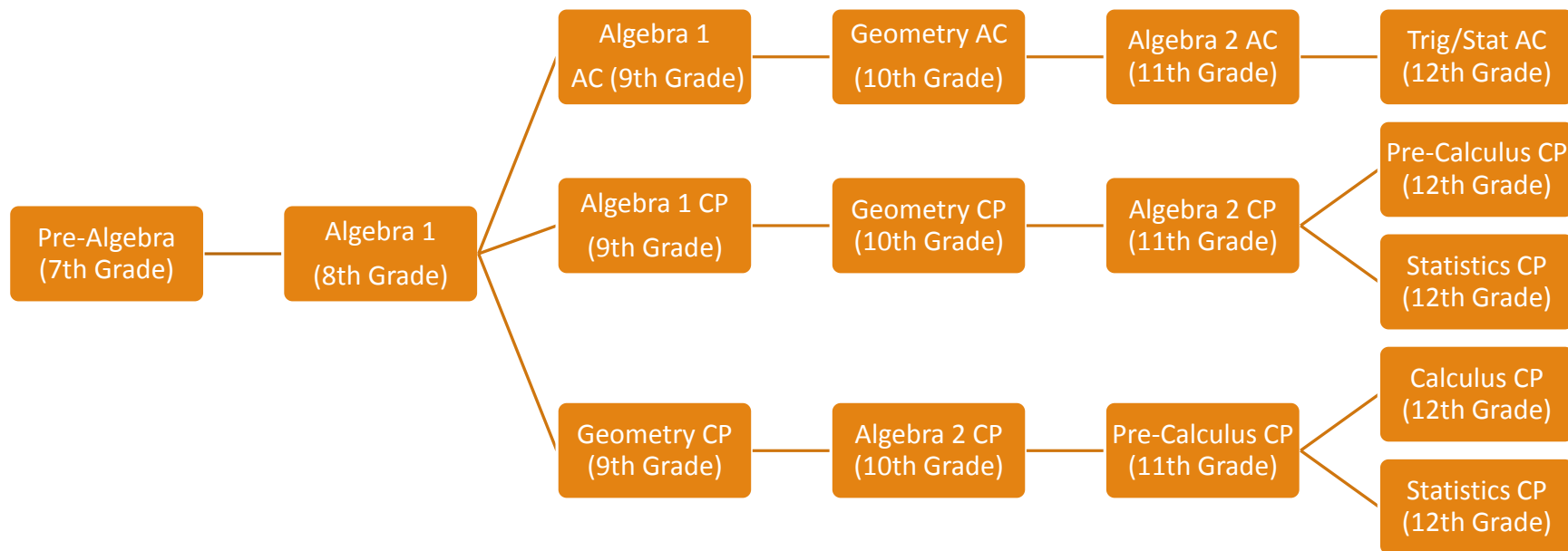
Gr 7:

- Pythagorean theorem and its converse
- transformations
- square numbers

Gr 8:

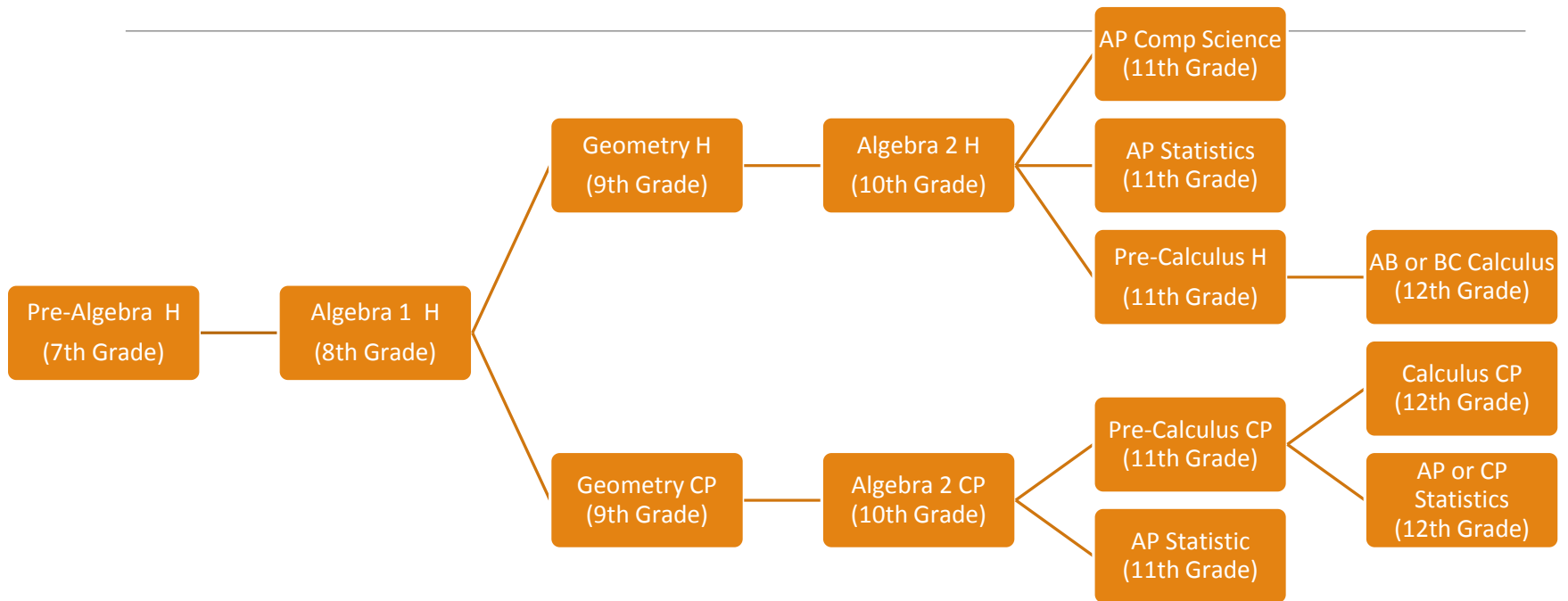
- absolute value equations
- compound inequalities
- absolute value inequalities
- rationalizing the denominator using the conjugate

Typical Math Progression 1 - Standard



****Statistics may be taken in conjunction with a Pre-Calculus or Calculus Course.**

Typical Math Progression 2 - Honors



****Statistics and AP Computer Science may be taken in conjunction with a Pre-Calculus or Calculus Course.**

K-12 Science & Social Studies

Science

- K-12 long-term transfer goals, standards, understandings, essential questions & performance task categories drafted
- Finalized draft 6-12 course sequence map
- Initial unit development for grades 6 & 8

Social Studies

- K-12 long-term transfer goals, standards, understandings, essential questions & performance tasks categories drafted
- Finalizing 6-12 course sequence map

Next Steps

Finalize 9-12 ELA & mathematics curriculums

Fine tuning lesson plans & assessments for K-8 ELA & mathematics curriculums

Draft 6-12 Science curriculum

Draft 6-12 Social Studies curriculum

Adjust a few units over next couple of years to address overlaps & gaps resulting from previous curriculum