SCIENCE

6 – 12
Proposed Curriculum

June 17, 2015

Board of Education Meeting

Primary Goals of Curriculum Revisions

Align with the Next Generation Science 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

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 NGSS 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

Avon's Curriculum Design

Understandings, essential questions & acquisition of knowledge & skills pull apart & define the standards for Avon

Focused on providing students with a greater depth of knowledge

Skills & understandings applied within the context of the theme

Application of skills in authentic, real world contexts

Next Generation Science Standards (NGSS)

Released in 2014

CT is in the process of adopting

New standards expand content beyond current CT standards

NGSS contains few standards which were not already part of AHS Science curriculum

Earth Science and Physics expanded the most

New science exam to eventually replace 10th grade CAPT exam

Disciplinary Core Ideas

- Physical Science
- Life Sciences
- Earth & Space Sciences
- Engineering Design

Revised Curriculum

Content spirals in depth

Greatly enhanced vertical alignment grades 6 through 12

Swap of 11th and 12th grade core courses

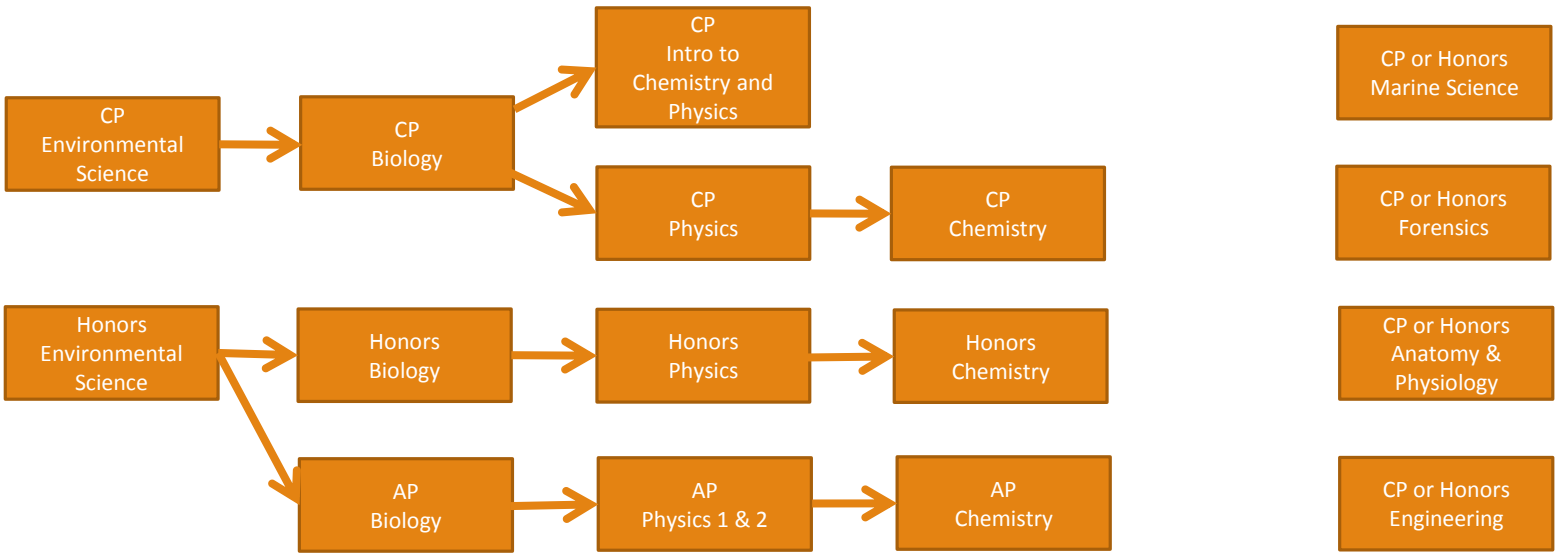
Integration of chemistry standards into other courses

At least 1 engineering project per year in grades 6-12 and several in physical science courses

Physics (11) and Chemistry (12) courses review content from earlier grade levels and then apply it to much more complicated situations using advanced math. Much of this work is beyond NGSS. Standards may refer to earlier grades.

Biology curriculum consists of 4 thematic units (1 per quarter) which are assessed as sub-units. The units are situation-oriented rather than topic-focused. (similar to approach used in AP Biology)

Typical Science Progressions



Next Steps

Review & revise the K-5 Science curriculum

Continue fine tuning lesson plans & assessments for grades 6-12

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

Place both content areas on next BOE agenda for approval

Student Placement

9th Grade – AMS science teacher recommends either CP or Honors environmental science based on grade 8 science test average

10th Grade – Placement test used for AP Biology only

Honors science for 10th, 11th and 12th grade – Based on teacher recommendation and math prerequisite

Typical Distribution of Levels

Honors Environmental Science – 37%

Honors Biology– 25%, AP Biology – 10%

Honors Physics – 20%, AP Physics – 10%

Honors Chemistry – 18%, AP Chemistry – 10%