

## AAHS Mathematics Department

### Description of Honors classes in the Math Department

The emphasis of the Honors math classes taught at Air Academy is not on the material taught, or the speed that it is taught, but on the depth and methods that material is taught. In a non-Honors math class, the new topic will be presented, several examples will be discussed, and then students are given time for guided practice. In an Honors class, the new topic will be presented or a question posed, one or two examples may be presented, and, by this time, the students are already asking: “what about changing this variable?”, “what if we do this?”, “does this imply there is a relationship with ...” The direction of the discussion is guided by the teacher to the correct mathematical concepts, but students’ questions also motivate the learning experience. If a non-Honors thinker is put in an Honors math class, they may feel overwhelmed by these discussions thinking, “I would have never thought of that” or “what happened on step 2”. If an Honors thinker is put in a non-Honors class, they are sometimes bored or feel unchallenged.

#### Characteristics of an Honors Math Thinker

- Enjoys being challenged mathematically.
- Can apply a new concept without many repetitive examples in class.
- Wants to “try it themselves” before given the answer or solution.
- Asks “What if” questions.
- Persists when trying to solve a problem never before seen.
- Seeks additional information from outside resources when stuck on a problem.
- Intuitively generalizes about concepts being learned.
- Can easily and independently apply previously learned skills to new problems.

#### Characteristics of a Non-Honors Math Thinker

- Enjoys guided problem solving.
- Prefers a new concept be taught directly from the teacher with several examples of varying difficulty.
- Says “Tell me what I need to know”
- Doesn’t typically think “what if” questions.
- Briefly attempts new problems but may give up quickly or prefer to wait for guidance.
- First reaction when stuck on a problem may be to go directly to teacher for help.
- Generalizes about concepts being learned when guided by the teacher.
- Frequently needs to review previously taught skills before applying them.

### Considerations before taking Honors/Advanced Math Classes:

- Algebra 2 classes have time built into their course for reteaching of key prerequisite curriculum from Algebra and Geometry courses. Honors Algebra 2 and AP Precalculus classes expect mastery of prerequisite curriculum and only have time for a brief review of this information.
- Remember performance in Algebra 1 can be a better indicator of success in Algebra 2 than that of Geometry.
- Consider more than the grades you received; consider whether or not you understood and remember the curriculum (for example Algebra students should remember: solving linear equations, graphing lines, factoring quadratic expressions, operations with fractions, operations with polynomials, evaluating exponents, etc.)
- There are **many** different examples of “on-track” math sequence:
  - Algebra 1, Geometry, Algebra 2, Advanced Algebra with Financial Applications
  - Geometry, Algebra 2, Algebra 3, Pre-Calculus
  - Algebra 2, Algebra 3, Pre-Calculus, Calculus
  - Algebra 2, Algebra 3, Pre-Calculus, Statistics
- An Honors math class is different from Honors classes in other subjects. Students whose passion is math are generally more successful in Honors Algebra 2 than those students who just want to take an Honors class.
- Consider how many Honors/AP classes you may be planning on taking in addition to an Honors math class.
- Consider that several advanced science classes have a required mathematics component.
- ***Most importantly, a study hall is recommended for ALL freshman as they transition to high school for time to complete homework, make up work from absences, and access our math and English tutoring centers!***

\*\* Students NEW to AAHS will have the opportunity to placement test for Honors and Advanced Math classes through Student Services.

Discuss all questions and concerns with your current AAHS math teacher and parents. Direct any other questions to Tony Powell ([joseph.powell1@asd20.org](mailto:joseph.powell1@asd20.org)) or Amy Cofield ([amy.cofield@asd20.org](mailto:amy.cofield@asd20.org)).