MATHEMATICS

FOUNDATIONS OF NC MATH 1 (ELECTIVE CREDIT) - 20902X0 1 CREDIT
NOTE: This course should be paired with NC Math 1B (21092X0B)
The purpose of this course is to formalize and extend the mathematics that students learned in the middle grades. In conjunction with NC Math 1B, this course deepens and extends understanding of linear relationships, in part by contrasting them with exponential and quadratic phenomena, and in part by applying linear models to data that exhibit a linear trend. In addition to studying bivariate data, students also summarize, represent, and interpret data on a single count or measurement variable. The Geometry standards that appear in this course formalize and extend students' geometric experiences to explore more complex geometric situations and deepen their explanations of geometric relationships, moving towards formal mathematical arguments. The Standards for Mathematical Practice apply throughout each course and, together with the content standards, require that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.

NC MATH 1B - 21092X0B 1 CREDIT
Recommended prerequisite(s): Foundations of NC Math 1A
The purpose of this course is to formalize and extend the mathematics that students learned in the middle grades. This course deepens and extends understanding of linear relationships, in part by contrasting them with exponential and quadratic phenomena, and in part by applying linear models to data that exhibit a linear trend. In addition to studying bivariate data, students also summarize, represent, and interpret data on a single count or measurement variable. The Geometry standards that appear in this course formalize and extend students' geometric experiences to explore more complex geometric situations and deepen their explanations of geometric relationships, moving towards formal mathematical arguments. The Standards for Mathematical Practice apply throughout each course and, together with the content standards, require that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations. This course fulfills the North Carolina high school graduation requirement for NC Math 1. The final exam is the North Carolina End-of-Course Test based on the NC Math 1 Standards.

NC MATH 1 21092X0 - 1 CREDIT
Recommended prerequisite(s): Mastery of the middle school mathematics curriculum
The purpose of this course is to formalize and extend the mathematics that students learned in the middle grades. This course deepens and extends understanding of linear relationships, in part by contrasting them with exponential and quadratic phenomena, and in part by applying linear models to data that exhibit a linear trend. In addition to studying bivariate data, students also summarize, represent, and interpret data on a single count or measurement variable. The Geometry standards that appear in this course formalize and extend students' geometric experiences to explore more complex geometric situations and deepen their explanations of geometric relationships, moving towards formal mathematical arguments. The Standards for Mathematical Practice apply throughout each course and, together with the content standards, require that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations. This course fulfills the North Carolina high school graduation requirement for NC Math 1. The final exam is the North Carolina End-of-Course Test based on the NC Math 1 Standards.

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MATHEMATICS

MATH PLUS HONORS (ELECTIVE CREDIT) - 28005X0L 1 CREDIT
Recommended prerequisite(s): Marginal proficiency in NC Math 1 in 8th grade. This course will be paired with Honors Math 2
Math Plus deepens the understanding of mathematical concepts covered in NC Math 1 to ensure that students are successful in future math courses. Students will be exposed to the content of NC Math 1 to reinforce crucial skills needed for Honors level courses. Students will also preview content for Honors NC Math 2.

FOUNDATIONS OF NC MATH 2 (ELECTIVE CREDIT) - 20912X0 1 CREDIT
Recommended prerequisite(s): Marginal proficiency in NC Math 1
Foundations of NC Math 2 provides learners with an opportunity to review and study foundational topics for higher-level mathematics. The topics covered will be based on student needs and will be aligned with NC Math 2. Students will solve relevant and authentic problems using manipulatives and appropriate technology.

NC MATH 2 - 22092X0 1 CREDIT
Recommended prerequisite(s): NC Math 1
In NC Math 2, students continue to deepen their study of quadratic expressions, equations, and functions, comparing their characteristics and behavior to those of linear and exponential relationships from NC Math 1. The concept of quadratics is generalized with the introduction of higher degree polynomials. New methods for solving quadratic equations are developed. The characteristics of advanced types of functions are investigated (including inverse variation and square root functions). The link between probability and data is explored through conditional probability and counting methods. Students explore more complex geometric situations and deepen their explanations of geometric relationships, moving towards formal mathematical arguments. Important differences exist between NC Math 2 and the historical approach taken in Geometry classes. For example, transformations are explored early in the course and provide the framework for studying geometric concepts such as similarity and congruence. The study of similarity leads to an understanding of right triangle trigonometry and connects to quadratics through Pythagorean relationships. The Standards for Mathematical Practice apply throughout each course and, together with the content standards, require that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations. This course fulfills the North Carolina high school graduation requirement for NC Math 2.

NC MATH 2 (HONORS) 22095X0 1 CREDIT
Recommended prerequisite(s): NC Math 1
In NC Math 2, students continue to deepen their study of quadratic expressions, equations, and functions, comparing their characteristics and behavior to those of linear and exponential relationships from NC Math 1. The concept of quadratics is generalized with the introduction of more sophisticated polynomials. New methods for solving quadratic and exponential equations are developed. The characteristics of more advanced types of functions are investigated (including inverse variation and square root functions). The link between probability and data is explored through conditional probability and counting methods. Students explore more complex geometric situations and deepen their explanations of geometric relationships, moving towards formal mathematical arguments. Important differences exist between NC Math 2 and the historical approach taken in Geometry classes. For example, transformations are explored early in the course and provide the framework for studying geometric concepts such as similarity and congruence. The study of similarity leads to an understanding of right triangle trigonometry and connects to quadratics through Pythagorean relationships. Honors NC Math 2 explores content at a rigorous level to begin students' preparation for advanced math courses. The Standards for Mathematical Practice apply throughout each course and, together with the content standards, require that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations. This course fulfills the North Carolina high school graduation requirement for NC Math 2.

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MATHEMATICS

NC MATH 3 23092X0 - 1 CREDIT
Recommended prerequisite(s): NC Math 2
This course is designed so that students have the opportunity to pull together and apply the accumulation of mathematics concepts learned previously. They apply methods from probability and statistics to draw inferences and conclusions from data. Students expand their repertoire of functions to include logarithmic, polynomial, rational, absolute value, piecewise, and trigonometric functions, including an intense study of families of functions and the relationships therein. They expand their study of right triangle trigonometry to include the study of trigonometric functions to model simple periodic phenomena. Finally, students bring together all their experience with functions and geometry to create models and solve contextual problems. Appropriate technology and tools, including manipulatives and calculators, will be used regularly for instruction and assessment. The Standard for Mathematical Practice applies throughout each course and, together with the content standards, require that students experience mathematics as a coherent, useful, and logical subject that means use of their ability to make sense of problems and situations. This course fulfills the North Carolina high school graduation requirement for NC Math 3. The final exam is the North Carolina End-of-Course Test based on the NC Math 3 Standards.

NC MATH 3 HONORS - 23095X0 1 CREDIT
Recommended prerequisite(s): Honors NC Math 2
This course is designed so that students have the opportunity to pull together and apply the accumulation of mathematics concepts learned previously. They apply methods from probability and statistics to draw inferences and conclusions from data. Students expand their repertoire of functions to include logarithmic, polynomial, rational, absolute value, piecewise, and trigonometric functions, including an intense study of families of functions and the relationships therein. They expand their study of right triangle trigonometry to include the study of trigonometric functions to model simple periodic phenomena. Finally, students bring together all their experience with functions and geometry to create models and solve contextual problems. Honors NC Math 3 explores content at a rigorous level to prepare students for advanced math courses. Appropriate technology and tools, including manipulatives and calculators, will be used regularly for instruction and assessment. The Standard for Mathematical Practice applies throughout each course and, together with the content standards, require that students experience mathematics as a coherent, useful, and logical subject that means use of their ability to make sense of problems and situations. This course fulfills the North Carolina high school graduation requirement for NC Math 3. The final exam is the North Carolina End-of-Course Test based on the NC Math 3 Standards.

PRECALCULUS HONORS - 24035X0 1 CREDIT
Recommended prerequisite(s): Honors NC Math 3
The purpose of Precalculus is to build upon the study of algebra, functions, and trigonometry experienced in previous high school mathematics courses. This course will build on students' algebraic skills and understanding of functions to delve into real world phenomena and to deepen understanding of the functions in the course. This course is designed for students pursuing careers in STEM-related fields. Students will be prepared for Calculus, AP Calculus and any entry-level college course. This course is accepted as the fourth math for admission to UNC System institutions.

Continued

MATHEMATICS

ADVANCED PLACEMENT CALCULUS: AB - 2A007X0 1 CREDIT
Recommended prerequisite(s): Mastery of the Precalculus curriculum
The AP Calculus curriculum includes limits, continuity, derivatives with applications, and elementary integration with applications. This is a college-level course. Use of computers and graphing calculators play an important role in this course. For each session of classroom instruction the student is expected to spend, as a minimum, an equal amount of time outside the classroom for review, written assignments, and preparation. It is expected that students enrolled in this course will take the College Board Advanced Placement Exam. This course is accepted as the fourth math for admission to UNC System institutions.

ADVANCED PLACEMENT CALCULUS: BC - 2A017X0 1 CREDIT
Recommended prerequisite(s): AP Calculus AB
The BC level of AP Calculus revisits some topics introduced in the AB course. Topics include differentials, integrals, infinite series, and differential equations. In addition, the curriculum for this course includes convergence and divergence of sequences and series, parametric representation of curves, polar curves, and additional integration techniques. This is a college-level course. Use of computers and graphing calculators play an important role in this course. For each session of classroom instruction, the student is expected to spend, as a minimum, an equal amount of time outside the classroom for review, written assignments, and preparation. It is expected that students enrolled in this course will take the College Board Advanced Placement Exam. This course is accepted as the fourth math for admission to UNC System institutions.