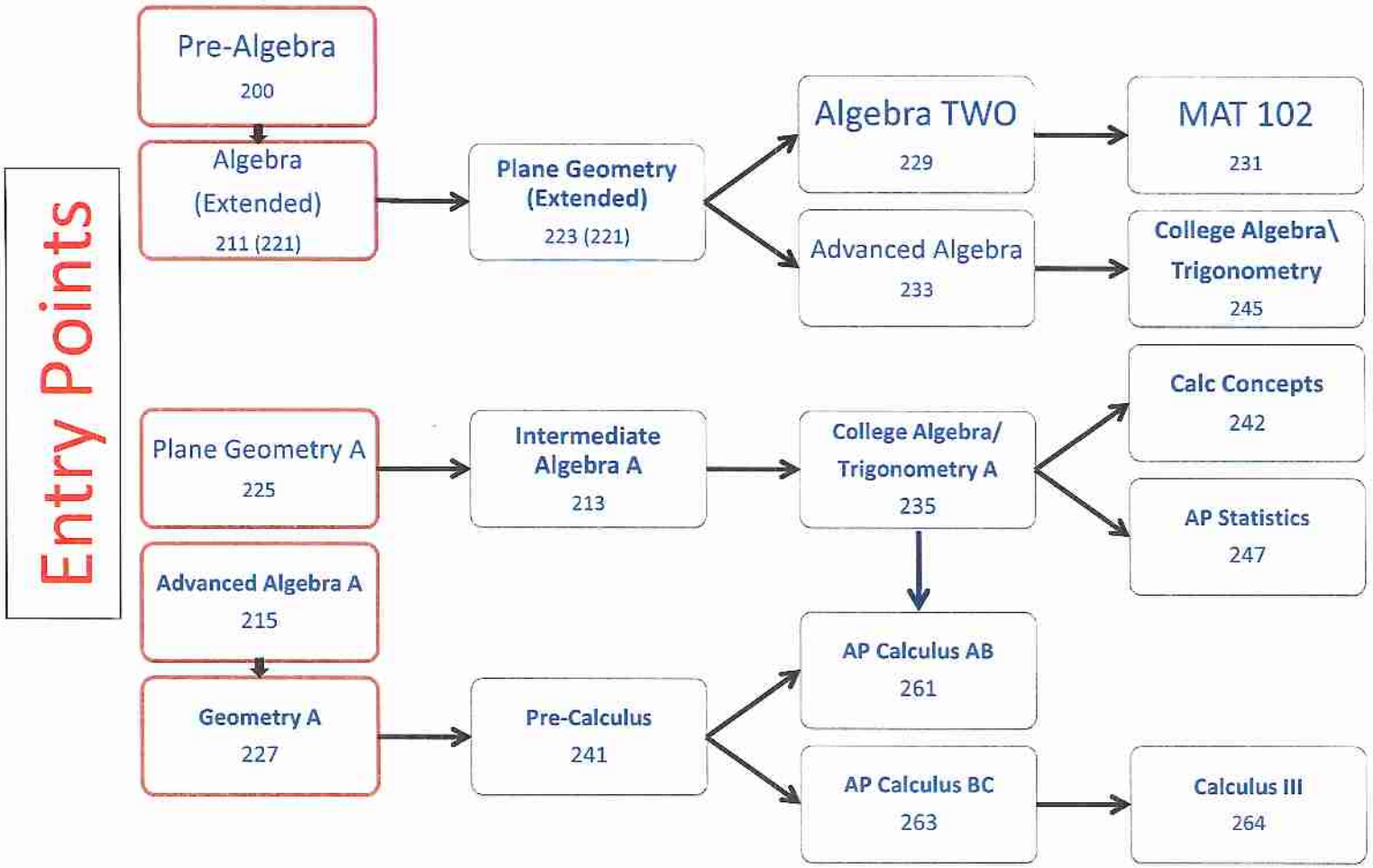
# OAK PARK AND RIVER FOREST HIGH SCHOOL

## OPPORTUNITIES IN MATHEMATICS

## TYPICAL SEQUENCES –2016-2017




**Computer Science Courses are usually taken during the Junior or Senior years. Advanced Algebra or eqivalent is the recommended pre-requisite.**

Introduction to Computer Science

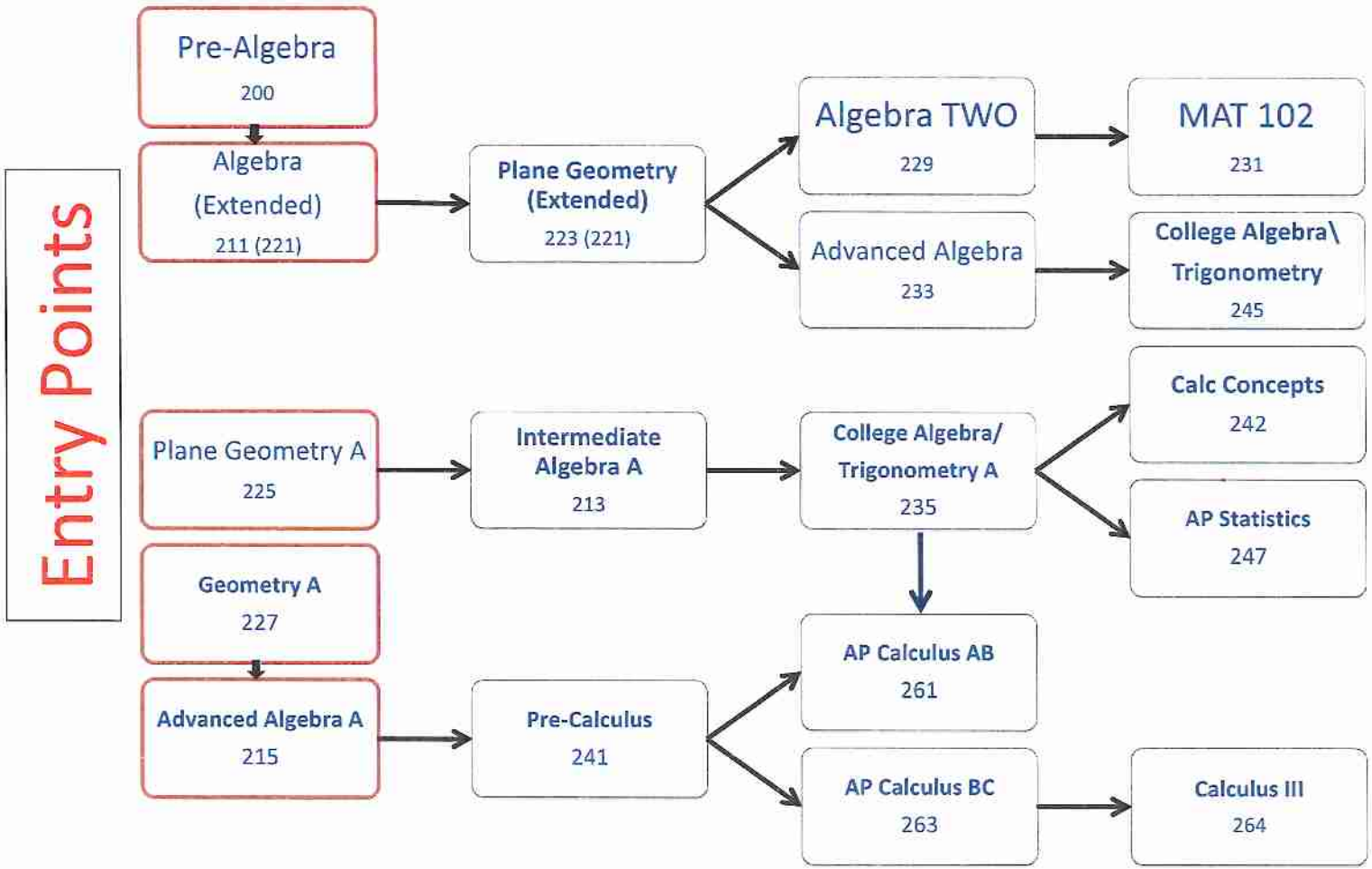
AP Computer Science

AP Computer Science Principals

# OAK PARK AND RIVER FOREST HIGH SCHOOL

## OPPORTUNITIES IN MATHEMATICS

## TYPICAL SEQUENCES –2017-2018

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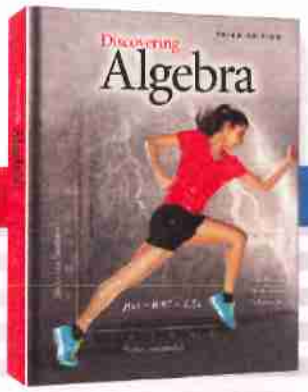
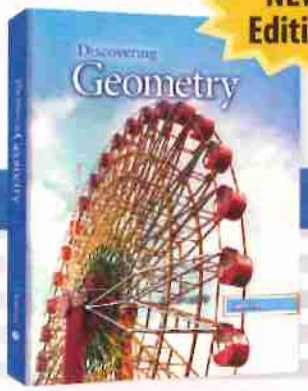
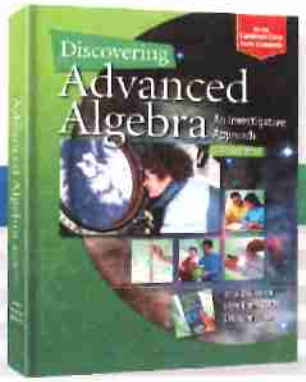
# Discovering Mathematics

## Discover Programs that Build Mathematical Proficiency



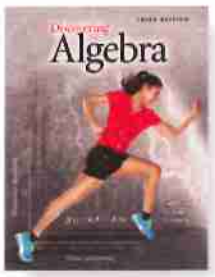




Kendall Hunt

# Built to Meet the Common Core

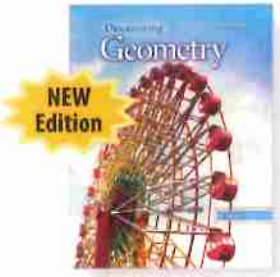
Throughout its history, Kendall Hunt has recognized the value of curriculum that incorporates problem solving, real-world applications, conceptual understanding, and mathematics as sense making. When students are given the opportunity to be actively involved in their own discovery of mathematics, they become better problem solvers and develop a deeper understanding of the concepts. Scientific research supports these pedagogical approaches, which are central to our **Discovering Mathematics** series and the **Common Core State Standards.**




## ALGEBRA I

### Balancing conceptual and procedural understanding

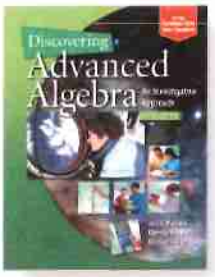
With *Discovering Algebra*, students solve problems, make sense of complex situations, and develop mathematical skills in a meaningful and retrievable way. Written to the CCSS, its strength lies in the way it connects mathematical content and practices. Students will not only learn a mathematical procedure, but will be able to justify why it works.




## GEOMETRY

### Building your students' reasoning and proof abilities

*Discovering Geometry* helps students develop inductive and deductive reasoning skills by creating conjectures, and reporting and justifying conclusions as they explore the principles of geometry. Congruence, similarity, and symmetry are studied from the perspective of geometric transformation to create connections within the mathematics.




## ALGEBRA 2

### Modeling with mathematics

*Discovering Advanced Algebra* builds upon the foundation of *Discovering Algebra* to help all learners further develop algebraic skills along with a strong, conceptual understanding of Algebra 2. The investigative approach keeps students engaged as they use mathematical functions to model real-world data, answer questions, and make predictions.

# We provide all of the support you need

## Bring all of your students to mastery.

Discovering Mathematics has a successful track record of helping teachers bring all students to mastery. Each lesson integrates a core principle that research supports and the Common Core State Standards embrace: Students learn new material by connecting it to what they already know and by developing their own understanding. Through discovery based investigations, students build mathematical proficiency and become active problem solvers and strategic thinkers.

## Discovering Mathematics eases and enhances classroom teaching.

Discovering Mathematics includes all of the resources you need for classroom success and for success in implementing the standards, so you can focus on learning, not logistics. With highly readable narratives, the wraparound-style Teacher's Edition offers comprehensive support for both new and experienced teachers and provides ideas to help you meet the needs of every student.

## You've got a partner at implementation and beyond.

When you adopt materials from Kendall Hunt, we offer support that ensures successful implementation of the standards. From convenient Webinars to customized on-site workshops, we'll partner with you to create a professional development program that's tailored to achieve your objectives.

## Get even more support with our Common Core Math app.

**Kendall Hunt's Common Core Math app** has been created to support educators and administrators who use Discovering Mathematics with the implementation of the CCSSM in their classrooms and districts. It provides educators with a guide to student and teacher behaviors that indicate understanding of specific content and mathematical practices as they are addressed throughout the curriculum.

The app's classroom observation tools may be used as a nonevaluative assessment resource and a peer-observation tool. These will help provide suggestions for planning and assessment for teachers, content leaders, and school-based administrators.

The app allows you to enter and capture observation data and provides easy access to all the Content Standards for Mathematics.

The Kendall Hunt Common Core Math app is available for free download through Apple iTunes and its App Store. Both iPad and iPhone versions of the app are available; enter Kendall Hunt in the store's search box to be taken to the version of your choice.

# Our core approach to the Standards

## 1 Make sense of problems and persevere in solving them.

Students using the Discovering Mathematics curriculum gain proficiency in analyzing problems, trying different solution methods, and evaluating their answers. Because rich, nonroutine problems are integral to the textbooks, students develop their own understanding and build solid problem-solving skills.

## 2 Reason abstractly and quantitatively.

The Discovering Mathematics series provides relatable, real-world exercises that deepen students' understanding of concepts. Students become proficient at expressing abstract ideas by graphing relationships, making and verifying conjectures, and solving equations. They become equally adept at drawing larger themes from the lessons.

## 3 Construct viable arguments and critique the reasoning of others.

The lessons in Discovering Mathematics help students develop higher-order thinking and communication skills. Students gather data, make conjectures, explain the reasoning behind their conjectures, and share their ideas verbally and in writing. Through collaboration and group work, they both consider and critique the perspectives of their classmates.

## 4 Model concepts with mathematics.

Discovering Mathematics students create models using technology that dynamically represents math concepts, and solve real-world problems using abstract representations such as algebraic equations and graphs. They may also use optional software to build and investigate mathematical models, objects, figures, diagrams, and graphs.

# for Mathematical Practice

Discovering Mathematics

## 5 Use appropriate tools strategically.

Discovering Mathematics fully integrates a wide variety of hands-on and technology tools—more than any other textbook series—including compass-and-straightedge, patty paper, graphing calculators, motion sensors, and software. These tools help to clearly illustrate key mathematical concepts, engage students, and bring mathematics to life in the classroom.

## 6 Attend to precision and detail.

Discovering Mathematics cultivates students' precision and attention to detail. Students learn the importance of giving accurate definitions by exploring counter examples. They write definitions, test their predictions, and check the reasonableness of their answers by asking themselves, "Does this make sense?" They then clearly communicate their reasoning using precise terms.

## 7 Look for and make use of structure.

Discovering Mathematics students tackle complex problems by observing similar patterns in problems of varying difficulty. They learn to extend their knowledge of simple properties to more advanced applications, and they apply reasoning strategies to break complex problems into manageable parts—skills they will use throughout their lives.

## 8 Look for and express regularity in repeated reasoning.

The investigative approach used within Discovering Mathematics leads students to look for patterns and structure in mathematics. Students use repeated addition to begin their investigation of linear growth and repeated multiplication to extend to geometric growth. Drawing on their observations of geometric properties, students make and test conjectures, develop generalizations, and write formulas.

# Discovering Geometry

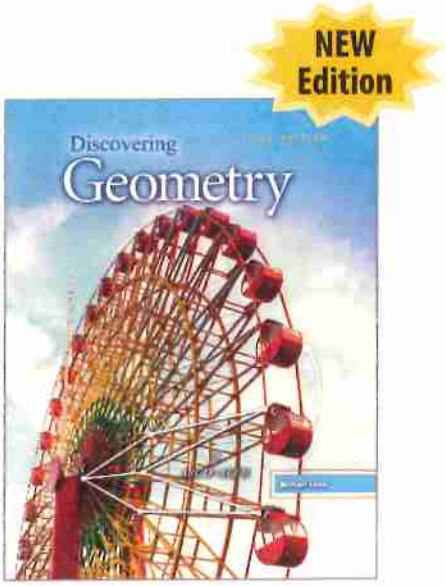
## Help your students build reasoning and proof skills and address the Standards for Mathematical Practice

With the new edition of *Discovering Geometry* and its investigative approach, students will create conjectures through investigations and use inductive and deductive reasoning to justify their response.

The program embraces the CCSS and the Standards for Mathematical Practice. Lessons do not simply address a standard and move on, but revisit them in various contexts to show connections within the mathematics.

*Discovering Geometry* encourages students to learn by doing, working both individually and in cooperative groups. Students will reason abstractly to justify and prove geometric properties by performing constructions, measuring figures, relating patterns and properties, and discussing their findings.

The *Discovering Geometry* curriculum asks students to create models using technology that dynamically represents math concepts, algebraic equations, and graphs. They also learn to solve real-world problems by investigating mathematical models, objects, figures, and diagrams.



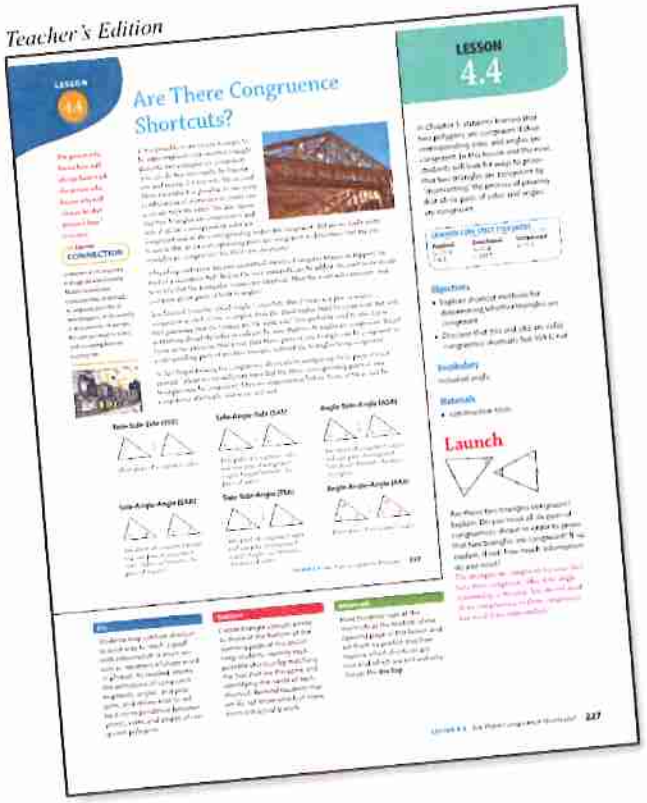

Available in print and digital formats, the program includes a new student eBook that's accessible from iPads, tablets, and most Internet-enabled devices. It provides point-of-use access to interactive tools and more.

A fully interactive teacher eBook puts resources such as lesson suggestions and problem answers right at educators' fingertips.

*Discovering Geometry* and its focus on the CCSS and Standards for Mathematical Practice helps educators cultivate a classroom of students who inquire about relevant ideas and issues beyond the bounds of the course.

## Meet the needs of all students with a CCSS-aligned curriculum

*Teacher's Edition*




*Teacher eBook*


**NOW WITH**

**CAS** Kendall Hunt Cohesive Assessment System

### *Discovering Geometry* provides:

- A balanced approach to conceptual and procedural understanding of geometric ideas
- Lessons that help develop higher-order thinking and communication skills and reinforce the importance of deductive arguments
- Dynamic Explorations that provide students and teachers with interactive models that illustrate key geometry concepts
- Investigations that provide a blend of guidance and discovery that stimulate learning
- New student and teacher eBooks that provide point-of-use access to program resources

# Discover what educators across the nation have learned about Discovering Mathematics

*Discovering Algebra* teaches the concepts behind the mathematics and makes students think. It's wonderful. I absolutely love it.

***—High School Teacher, Marietta, GA***

With *Discovering Geometry*, I have students come back and say, even 10 years after graduating, that they still remember 'seeing math in everything.'

***—Junior High Teacher, Newhall, CA***

Our faculty believes that, with *Discovering Advanced Algebra*, our students have learned mathematics in a deeper and broader way than before.

***—High School Teacher, Weaverville, NC***

- Build a solid foundation in high school math
- Develop your students' reasoning skills
- Model with mathematics
- Transform mathematics

***Discovering Mathematics helps you align to the Standards!***


**Get an online preview at kendallhunt.com/freeflourishtrial**

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