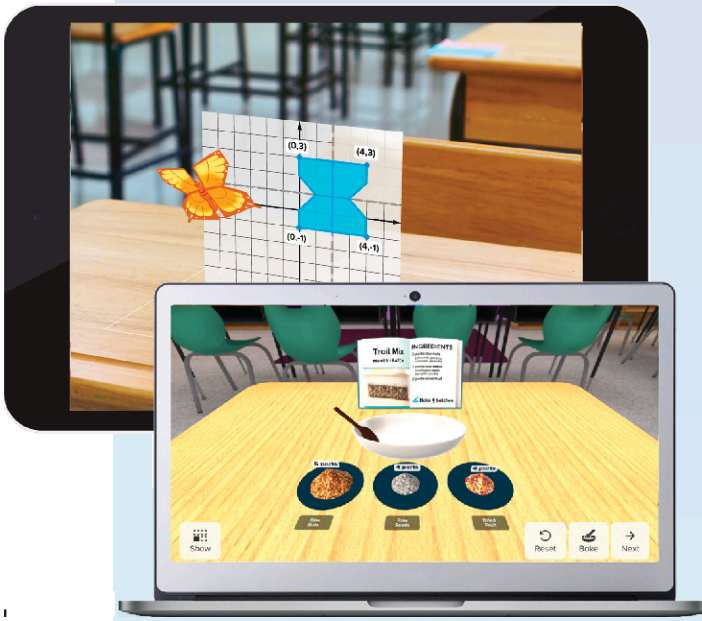
Mc Graw Hill AR

Reveal MATH®




## See. Touch. Learn.

# BRING MATH TO LIFE WITH AUGMENTED REALITY

McGraw Hill, in partnership with Verizon, created McGraw Hill AR, a FREE augmented reality app that blends trusted educational content with innovative technology to make learning more engaging and meaningful across subjects.

With math, McGraw Hill AR help students visualize abstract concepts and see math in the world around them. From ski slopes to fireworks, from race cars to desert islands, students can experience the fun in learning math and realize it's not just about numbers and equations.

These engaging, bite-size experiences provide a great complement to your Reveal Math curriculum. Each activity is standards-aligned and offers a consistent approach:

- **Observe**: Watch a narrated animation that introduces the concept
- **Explore**: Interact with 3D objects to deepen understanding
- **Evaluate**: Apply knowledge via interactive questions

### Lesson Plans & Worksheets

Create a free account on Verizon Innovative Learning HQ to access the lesson plans (**verizon.com/learning**). There are also student worksheets that correlate to the activities, as well as enrichment and extension activities.

### How to Access McGraw Hill AR

McGraw Hill AR offers two FREE experiences. The **augmented reality app** is available for tablets and smartphones and can be downloaded from the **App Store**, **Google Play** or by scanning the QR code here.

The **3D web-based experience** is available for Chromebooks, laptops, and desktops at **mharonline.com**.

### Math Topics in McGraw Hill AR

- 1-Step Equations
- 2-Step Equations
- Add & Subtract Fractions
- Coordinate Plane
- Cross Sections
- Divide with Remainders
- Equivalent Fractions*
- Game Theory
- Graph Theory
- Growth Functions
- LCM
- Nets
- Parallel and Skew Lines
- Pythagorean Theorem in 3D
- Quadratic Functions
- Ratios
- Reflections
- Rotations
- Slope

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# McGraw Hill AR Correlations to Reveal Math

McGraw Hill AR can be used in direct support of lessons noted below. However, please see the Content Progression Chart for an exploration of how to use the app for other grade levels with modifications.

| McGraw Hill AR | Reveal Math Lesson |
|---|---|
| **Divide with Remainders** | **G3:** Unit 3: Multiplication and Division, Lesson 4: Understand Equal Sharing<br>**G4**: Unit 7: Division Strategies with Multi-Digit Dividends and 1-Digit Divisors, Lesson 3: Find Equal Shares<br>**G4**: Unit 7: Division Strategies with Multi-Digit Dividends and 1-Digit Divisors, Lesson 7: Make Sense of a Remainder |
| **Equivalent Fractions** | **G4:** Unit 8: Fraction Equivalence, Lesson 1: Equivalent Fractions |
| **Add & Subtract Fractions** | **G5**: Unit 9: Add and Subtract Fractions, Lesson 3: Add Fractions with Unlike Denominators<br>**G5**: Unit 9: Add and Subtract Fractions, Lesson 5: Subtract Fractions with Unlike Denominators |
| **Coordinate Plane** | **G5**: Unit 13: Geometry, Lesson 3: Rep. Problems on a Coordinate Plane |
| **Ratios** | **G6**: Unit 3: Ratios and Rates, Lesson 1: Understand Ratios |
| **LCM** | **G6:** Unit 6: Numerical & Algebraic Expressions, Lesson 7: Find Factors & Multiples |
| **One-Step Equations** | **G6**: Unit 8: Equations and Inequalities, Lesson 1: Understand Equations and Their Solutions<br>**Alg 1**: Module 2: Equations in One Variable, Lesson 2: Solving One-Step Equations |
| **Two-Step Equations** | **G7** Unit 8 Solve Problems Involving Equations and Inequalities, Lesson 1: Solve Equations: $px + q = r$<br>***Can be used to prepare for Multi-Step Equations in* Alg 1**: Module 2: Equations in One Variable, Lesson 3: Solve Multi-Step Equations |
| **Slope** | **G8**: Unit 3: Linear Relationships and Equations, Lesson 1: Describe the Slope of a Line<br>***Can be used to prepare for* Alg 1:** Module 4: Linear and Nonlinear Functions, Lesson 2: Rate of Change and Slope |
| **Pythagorean Theorem in 3D** | **G8**: Unit 6: Angles, Triangles, and the Pythagorean Theorem, Lesson 7: Apply the Pythagorean Theorem |

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|---|---|
| **Reflections** | **G8**: Unit 2: Congruence and Similarity, Lesson 2: Explore Reflections<br>**Geom**: Module 2: Angles and Geometric Figures, Lesson 4: Transformations in the Plane<br>**Geom**: Module 4: Transformations and Symmetry, Lesson 1: Reflections |
| **Growth Functions** | **Alg 1**: Module 9: Exponential Functions, Lesson 1: Exponential Functions<br>**Alg 2**: Module 7: Exponential Functions, Lesson 5: Modeling Data |
| **Nets** | **Geom**: Module 2: Angles and Geometric Figures, Lesson 6: 2-D Representations |
| **Parallel & Skew Lines** | **Geom**: Module 3: Logical Arguments & Line Relationships, Lesson 7: Parallel Lines & Transversals |
| **Cross Sections** | **Geom:** Module 11: Measurement, Lesson 5: Cross Sections and Solids of Revolution |
| **Rotations** | **Geom**: Module 11: Measurement, Lesson 5: Cross Sections and Solids of Revolution |
| **Quadratic Functions** | **Alg 2**: Module 3: Quadratic Functions, Lesson 1: Graphing Quadratic Functions |
| **Graph Theory** | Not covered in Reveal Math, but could be covered in Algebra 2 |
| **Game Theory** | Not covered in Reveal Math, but could be covered in Algebra 2 |

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# McGraw Hill AR Content Progressions Across Reveal Math

| Instructions altered for lower grade bands | Original instructions can be used for these grade bands | These grade bands may be too advanced for this activity | The activity may be too advanced for these grade bands |
|---|---|---|---|

| McGraw Hill AR | Description | Reveal Math K-2 | Reveal Math 3-5 | Reveal Math 6-8 | Reveal Algebra | Reveal Geometry | Reveal Algebra 2 |
|---|---|---|---|---|---|---|---|
| **Divide with Remainders** | Divide two-digit numbers by one-digit numbers and identify remainders. | **Modification**: Play carnival games and share winnings with your friends! | ✓ | ✓ | | | |
| **Equivalent Fractions** | Identify objects representing equivalent fractions within a jungle. | **Modification:** Go on a treasure hunt for shapes. | ✓ | ✓ | ✓ | ✓ | |
| **Add & Subtract Fractions** | Add and subtract fractions with unlike denominators. | **Modification**: Add and subtract shapes with different sizes. | ✓ | ✓ | | | |
| **Coordinate Plane** | Help a dog travel from one point to another on the coordinate plane. | **Modification:** Help the dog find his bone. | ✓ | ✓ | | | |
| **Ratios** | Understand and use ratios within recipes. | **Modification:** Use recipes to make foods. | **Modification:** Use recipes to make foods. | ✓ | ✓ | ✓ | ✓ |
| **LCM** | Find the LCM of a set of numbers using lap times for race cars. | **Modification:** Get the cars to complete laps at the same time. | **Modification:** Get the cars to complete laps at the same time. | ✓ | ✓ | ✓ | ✓ |
| **One-Step Equations** | Solve one-step equations using a balance. | **Modification:**Make the balance level. | **Modification:** Make the balance level. | ✓ | ✓ | ✓ | ✓ |
| **Two-Step Equations** | Solve two-step equations using a balance. | **Modification:**Make the balance level. | **Modification:** Make the balance level. | ✓ | ✓ | ✓ | ✓ |
| **Slope** | Find the slope using skateboard ramps. | **Modification:** Help the skateboarder land successfully. | **Modification:** Help the skateboarder land successfully. | ✓ | ✓ | ✓ | ✓ |
| **Pythagorean Theorem in 3D** | Use the theorem with real 3D objects. | | | ✓ | ✓ | ✓ | ✓ |

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|---|---|---|---|

| McGraw Hill AR | Description | Reveal Math K-2 | Reveal Math 3-5 | Reveal Math 6-8 | Reveal Algebra | Reveal Geometry | Reveal Algebra 2 |
|---|---|---|---|---|---|---|---|
| **Reflections** | Apply reflections to two- dimensional figures in the coordinate plane. | **Modification:** Can you recreate the picture? | **Modification:** Can you recreate the picture? | ✓ | ✓ | ✓ | ✓ |
| **Growth Functions** | Determine the best model to represent a sequence. | **Modification:** Predict how many bunnies will come out of the hat. | **Modification:** Predict how many bunnies will come out of the hat. | **Modification:** Predict how many bunnies will come out of the hat. | ✓ | ✓ | ✓ |
| **Nets** | Identify nets of 3D shapes using real world objects. | **Modification**: Open (or unfold) the 3D object | **Modification**: Open (or unfold) the 3D object | ✓ | ✓ | ✓ | ✓ |
| **Parallel & Skew Lines** | Identify parallel, perpendicular, and skew lines in real world 3D objects. | **Modification:** Explore edges of 3D objects. | **Modification:** Explore edges of 3D objects. | ✓ | ✓ | ✓ | ✓ |
| **Cross Sections** | Identify cross sections using real world 3D objects. | **Modification:** Slice objects to create shapes. | **Modification:** Slice objects to create shapes. | ✓ | ✓ | ✓ | ✓ |
| **Rotations** | Identify shapes formed by rotations using 3D objects. | **Modification:** Rotate shapes to form objects. | **Modification:** Rotate shapes to form objects. | ✓ | ✓ | ✓ | ✓ |
| **Graph Theory** | Identify and find Euler Paths on a desert island. | **Modification:** Can you create the correct path? | **Modification:** Can you create the correct path? | ✓ | ✓ | ✓ | ✓ |
| **Game Theory** | Adjust the price of gas based on market fluctuations. | | | ✓ | ✓ | ✓ | ✓ |
| **Quadratic Functions** | Identify the maximum of a quadratic function using display fireworks. | | | ✓ | ✓ | ✓ | ✓ |