

Ohio's Math Resources

GRADES PRE-K-K

[Prekindergarten EngageNY](#) is a full curriculum that is rated highly by EdReports. The lessons are in-depth and aligned to the standards. It has printable student worksheets and teacher answer keys.

NON-TECH ACTIVITIES TO DO AT HOME

- Count common household objects (toys, coins, lamps, etc.).
- Create simple patterns with sounds, movements and everyday objects, such as snap, clap; snap, clap; snap, clap.
- Identify circles, squares, rectangles and triangles from everyday life.
- Identify groups of objects as same or different and as more or less.

GRADES K-2

ACTIVITIES AND LESSONS

[Statistics Education Web \(STEW\)](#) from the American Statistical Society (AMSTAT) has vetted statistics lessons aligned to the GAISE model and the Common Core State Standards. It has printable PDFs and Word documents with student facing worksheets and teacher answer keys for grade bands K-5, 6-8, and high school.

[The United States Census Bureau](#) has lesson plans organized by grade bands K-5, 6-8, and high school. Opening up the lesson will show the specific grade it applies to. It has printable student lessons and teacher answer keys.

[YouCubed](#) by Jo Boaler is an online resource for a variety of math tasks. These tasks can be sorted by grade level and topics. Each task has a printable worksheet attached.

[The Math Learning Center](#) has free math apps for students to use. The apps are based on visual models featured in the Mathematics Program *Bridges*. It also has free lessons and publication found [here](#).

[Yummy Math](#) has real-world activities for students in Grades 2-High School that are aligned to standards. The activities are free and printable. There is a cost to access the answer keys.

[Matific](#) has created a series of games and activities that look at place value and the arithmetic operations.

[5280 Math](#) has creative prompts based on images and focused on noticing and wonderings. Parents can do these with their students. [Here](#) are some questions parents can ask their children to prompt mathematical thinking. It also has good math projects found [here](#).

Kindergarten

[Kindergarten EngageNY](#) is a full curriculum that is rated highly by EdReports. The lessons are in-depth and aligned to the standards. It has printable student worksheets and teacher answer keys.

[Kindergarten Kahoot](#) is an online quiz for kindergarteners.

Grade 1

[Grade 1 EngageNY](#) is a full curriculum that is rated highly by EdReports. The lessons are in-depth and aligned to the standards. It has printable student worksheets and teacher answer keys.

Grade 2

[Grade 2 EngageNY](#) is a full curriculum that is rated highly by EdReports. The lessons are in-depth and aligned to the standards. It has printable student worksheets and teacher answer keys.

NON-TECH ACTIVITIES TO DO AT HOME**Kindergarten**

- Give children a group of objects and ask them to separate the objects into two equal groups.
- Say a number up to 10, and ask your child to tell you the number one more or one less than the original number.
- Collect random objects, and then ask your child to sort them into groups based on color, size and shape.
- Ask your child to identify, name and describe shapes from inside your house, outside and in other familiar places.

Grade 1

- Ask your child what time it is.
- Hand your child a few coins of the same value and ask for the combined amount.
- Create math problems together about things happening at home. For example: “We started dinner with 6 pieces of bread but have eaten 3. How many are left?”
- Identify patterns found in the real world. For example, “The clock chimes once at one o’clock and twice at two o’clock, so what will happen at three o’clock?”
- Separate objects into equal groups. For example: Cut a pizza into slices so every family member has the same number of slices.

Grade 2

- Create math problems about things happening at home. For example: “We started dinner with 10 slices of pizza but have eaten 3, so how many are left?”
- Determine the value of coins up to one dollar.
- Write two different three-digit numbers on a piece of paper and ask your child which one is greater or less than.
- Ask your child to tell you what time it is.
- Practice using a ruler to measure household items.

GRADES 3-5**ACTIVITIES AND LESSONS**

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[Exploding Dots](#) by Global Math Project is a fun, exciting way to think about math. It is an astounding mathematical story that starts at the very beginning of mathematics—it assumes nothing—and swiftly takes you through a wondrous journey through grade school arithmetic and beyond. Elementary and middle school students can see arithmetic algorithms as a beautiful story and see the role they play in advanced high school mathematics. It uses video and interactive resources to help kids reason about math. It offers low tech options as well.

[Yummy Math](#) has real-world activities for students in Grades 2-High School that are aligned to standards. The activities are free and printable. There is a cost to access the answer keys.

[Estimation 180](#) helps students build number sense one day at a time. Students are given a situation and then make a low, high, and strategic estimate. Then they can compare their estimates with others and the exact answer.

[The Math Learning Center](#) has free math apps for students to use. The apps are based on visual models featured in the mathematics program *Bridges*. It also has free lessons and publication found [here](#).

[Khan Academy](#) are online video math lectures. These lectures may be useful to review math content and practice some skills. The lectures are not ideal for deep understanding and problem solving nor do they integrate the standards of mathematical practice. This resource could be used to supplement other activities, but should not be used as the primary resource. It has videos from Preschool through Advanced Math topics. It also has links to reinforce EngageNY and Illustrative Mathematics as well as SAT test prep.

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Grade 3

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Grade 4

[Grade 4 EngageNY](#) is a full curriculum that is rated highly by EdReports. The lessons are in-depth and aligned to the standards. It has printable student worksheets and teacher answer keys.

Grade 5

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NON-TECH ACTIVITIES TO DO AT HOME

Grade 3

- Create your own multiplication and division flashcards.
- Use the numbers on cards, dominoes and dice to practice multiplication or division with your child.
- Identify fractions around the house. For example, if a four-drawer dresser has socks in one drawer, then $\frac{1}{4}$ of the dresser has socks in it.
- Ask your child to identify the shapes and types of angles in road signs.
- Measure the sides of four-sided objects in daily life (a tabletop, cell phone, etc.) and add all the sides together to find the perimeter.

Grade 4

- Create illustrations of multiplication problems using items you can find around the house.
- Using books that you have at home, ask your child to find at least 5 numbers that end in zero, then multiply those numbers by 10, 100 or 1,000.
- Design a hopscotch board labeled with fractions and decimals. Ask your child to add or subtract as they hop.
- Ask your child to identify the place value of numbers behind the decimal point. For example, in 3.2, the 2 is in the tenths place, while in 49.75, the 5 is in the hundredths place with a value of .05.
- Ask your child to keep a running record on a tablet, notepad or phone of the different shapes and angles in your home.

Grade 5

- Use fractions from recipes and other resources around the house and find the corresponding decimal.
- Determine the number of ice cubes (or other objects) it takes to fill a container to help your child understand the concept of volume.
- Sort objects into three to five categories and ask your child to create a graph based on the categories and explain it to you.
- Provide your child with five numbers – for example, 26, 30, 32, 32, 35. Ask your child to find the mean, or average (31); median, or middle number (32); mode, or number that occurs the most (32); and range, the difference between the highest and lowest number ($35 - 26 = 9$).
- Construct and classify triangles (including equilateral, right, scalene, and isosceles triangles) using items that you can find around your house, such as straws, pencils, or crayons.

GRADE 6-8

ACTIVITIES AND LESSONS

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[Estimation 180](#) helps students build number sense one day at a time. Students are given a situation and then make a low, high, and strategic estimate. Then they can compare their estimates with others and the exact answer.

[Dan Meyer's Three Act Tasks](#) are low floor, high ceiling tasks in three parts: an engaging and perplexing Act 1, an information and solution seeking Act 2, and solution discussion and solution revealing Act 3. They allow students to ask mathematical questions, think critically, and develop estimation and number sense skills. These are usually presented in the forms of video or photos. They are also organized by standard.

[Khan Academy](#) are online video math lectures. These lectures may be useful to review math content and practice some skills. They are not ideal for deep understanding and problem solving nor do they integrate the standards of mathematical practice. This resource could be used to supplement other activities but should not be used as the primary resource. It has videos from Preschool through Advanced Math topics. It also has links to reinforce EngageNY and Illustrative Mathematics as well as SAT test prep.

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[The Mathematics Assessment Project](#) is part of the Math Design Collaborative initiated by the Bill & Melinda Gates Foundation. The project set out to design and develop well-engineered tools for formative and summative assessment that expose students' mathematical knowledge and reasoning, helping teachers guide them towards improvement and monitor progress. The tools are relevant to any curriculum that seeks to deepen students' understanding of mathematical concepts and develop their ability to apply that knowledge to non-routine problems.

Grade 6

[Grade 6 Model Curriculum with Instructional Supports](#) breaks down each cluster of standards, has instructional strategies, and instructional resources/tools that include a variety of links that connect to each standard. The table of context is hyperlinked. To find links to lessons go to the Instructional Tools/Resources link under each cluster.

[Grade 6 Illustrative Mathematics Curriculum](#) is one of the highest rated curriculum by EdReports. It is meant to be done online. It has resources for students, families, and educators.

[Grade 6 EngageNY](#) is a full curriculum that is rated highly by EdReports. The lessons are in-depth and aligned to the standards. It has printable student worksheets and teacher answer keys.

Grade 7

[Grade 7 Model Curriculum with Instructional Supports](#) breaks down each cluster of standards, has instructional strategies, and instructional resources/tools that include a variety of links that connect to each standard. The table of context is hyperlinked. To find links to lessons go to the Instructional Tools/Resources link under each cluster.

[Grade 7 Illustrative Mathematics Curriculum](#) is one of the highest rated curricula by EdReports. It is meant to be done online. It has resources for students, families, and educators.

[Grade 7 EngageNY](#) is a full curriculum that is rated highly by EdReports. The lessons are in-depth and aligned to the standards. It has printable student worksheets and teacher answer keys.

The Game of SKUNK (requires dice) introduces probability concepts.

Grade 8

[Grade 8 Model Curriculum with Instructional Supports](#) breaks down each cluster of standards, has instructional strategies, and instructional resources/tools that include a variety of links that connect to each standard. The table of context is hyperlinked. To find links to lessons go to the Instructional Tools/Resources link under each cluster.

[Grade 8 Illustrative Mathematics Curriculum](#) is one of the highest rated curriculum by EdReports. It is meant to be done online. It has resources for students, families, and educators.

[Grade 8 EngageNY](#) is a full curriculum that is rated highly by EdReports. The lessons are in-depth and aligned to the standards. It has printable student worksheets and teacher answer keys.

NON-TECH ACTIVITIES TO DO AT HOME

- Using the food labels on boxes of cereal or other food items, determine the number of calories in multiple servings of that item. How many calories in half a serving, $\frac{1}{4}$ of a serving, etc.? What if you were feeding 20 people? 35 people? Your school?
- Graph the temperature every hour for multiple days. How does the temperature change over time? What do you notice? What do you wonder?
- What is the probability of flipping a coin and landing on “heads?” Flip a coin 30 times and record whether it lands on “heads” or “tails” each time. Does your experimental probability (the number of times you landed on “heads” compared to the total number of flips) match the theoretical probability (what “should” happen)? Why do you think the results ended up the way they did?
- Draw or print a picture. Rotate, Reflect, Translate, and/or dilate the image.
- Find the area of each room in your current location. What would fit in your room if the area was $\frac{1}{4}$ of the original size? What would the area be if you doubled the length of each wall? If you used a room for storage, how many chairs could you fit into the room?
- From Alex Gardner: With one straight cut you can slice a pie into two pieces. A second cut that crosses the first one will produce four pieces, and a third cut can produce as many as seven pieces. What is the largest number of pieces that you can get with six straight cuts?
- From YouCubed (requires a square piece of paper):
 - Construct a square with exactly $\frac{1}{4}$ the area of the original square. Convince yourself and then someone else that it is a square and has $\frac{1}{4}$ of the area.

- Construct a triangle with exactly $\frac{1}{4}$ the area of the original square. Convince yourself and then someone else that it has $\frac{1}{4}$ of the area.
- Construct another triangle, also with $\frac{1}{4}$ the area, that is not congruent to the first one you constructed. Convince yourself and then someone else that it has $\frac{1}{4}$ of the area.
- Construct a square with exactly $\frac{1}{2}$ the area of the original square. Convince yourself and then someone else that it is a square and has $\frac{1}{2}$ of the area.
- Construct another square, also with $\frac{1}{2}$ the area, that is oriented differently from the one you constructed in #4. Convince yourself and then someone else that it has $\frac{1}{2}$ of the area.

HIGH SCHOOL

ACTIVITIES AND LESSONS

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Algebra 1

[Algebra 1 Model Curriculum with Instructional Supports](#) breaks down each cluster of standards, has instructional strategies, and instructional resources/tools that include a variety of links that connect to each standard. The table of context is hyperlinked. To find links to lessons go to the Instructional Tools/Resources link under each cluster.

[Algebra 1 Illustrative Mathematics Curriculum](#) is one of the highest rated curricula by EdReports. It is meant to be done online. It has resources for students, families, and educators.

[Algebra 1 EngageNY](#) is a full curriculum that is rated highly by EdReports. The lessons are in-depth and aligned to the standards. It has printable student worksheets and teacher answer keys.

[Algebra 1 Mathematics Vision Project](#) has a full curriculum of lessons. There are also teacher notes available.

Geometry

[Geometry Model Curriculum with Instructional Supports](#) breaks down each cluster of standards, has instructional strategies, and instructional resources/tools that include a variety of links that connect to each standard. The table of context is hyperlinked. To find links to lessons go to the Instructional Tools/Resources link under each cluster.

[Geometry Illustrative Mathematics Curriculum](#) is one of the highest rated curricula by EdReports. It is meant to be done online. It has resources for students, families, and educators.

[Geometry EngageNY](#) is a full curriculum that is rated highly by EdReports. The lessons are in-depth and aligned to the standards. It has printable student worksheets and teacher answer keys.

[Geometry Mathematics Vision Project](#) has a full curriculum of lessons. There are also teacher notes available.

Math 1

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[Secondary Mathematics 1 Mathematics Vision Project](#) has a full curriculum of lessons. There are also teacher notes available.

Math 2

[Math 2 Model Curriculum with Instructional Supports](#) breaks down each cluster of standards, has instructional strategies, and instructional resources/tools that include a variety of links that connect to each standard. The table of context is hyperlinked. To find links to lessons go to the Instructional Tools/Resources link under each cluster.

[Secondary Mathematics 2 Mathematics Vision Project](#) has a full curriculum of lessons. There are also teacher notes available.

Algebra 2/Math 3

[Algebra 2 Illustrative Mathematics Curriculum](#) is one of the highest rated curricula by EdReports. It is meant to be done online. It has resources for students, families, and educators.

[Algebra 2 EngageNY](#) is a full curriculum that is rated highly by EdReports. The lessons are in-depth and aligned to the standards. It has printable student worksheets and teacher answer keys.

[Algebra 2 Mathematics Vision Project](#) has a full curriculum of lessons. There are also teacher notes available.

Precalculus and Advanced Topics

[Precalculus and Advanced Topics EngageNY](#) is a full curriculum that is rated highly by EdReports. The lessons are in-depth and aligned to the standards. It has printable student worksheets and teacher answer keys.