Ohio's Math Resources

GRADES 6-8

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.

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.

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 the 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 inks to reinforce EngageNY and Illustrative Mathematics as well as SAT test prep.

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

Ohio | Department of Education

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, ¼ 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
- ¼ 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 ¼ the area of the original square. Convince yourself and then someone else that it is a square and has ¼ of the area.
    - Construct a triangle with exactly ¼ the area of the original square. Convince yourself and then
    - someone else that it has ¼ of the area.
    - Construct another triangle, also with ¼ the area, that is not congruent to the first one you constructed. Convince yourself and then someone else that it has ¼ of the area.
    - Construct a square with exactly ½ the area of the original square. Convince yourself and then
    - someone else that it is a square and has ½ of the area.
    - Construct another square, also with ½ the area, that is oriented differently from the one you constructed in #4. Convince yourself and then someone else that it has ½ of the area.