

# Secondary Mathematics Task Bank

Also see the [UEN eMedia Mathematics Hub](#) where many of these tasks are tied to Utah Core Mathematics Standards (and you can search by standard!!)

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[MATHmodels.org](#) (6-12+): Powered by [COMAP](#) content, MATHmodels.org has been reimaged as a new resource to make math modeling a year round activity. Teachers and students are invited to use the materials to enrich their classes and help prepare students to become mathematical modelers.

[TedED](#) (Grades 4-12+): Puzzles, games, and fun mathematics information and tasks delivered through short videos.

[Math Pickle](#) (Grades K-12): Puzzles, games, and mini-competitions for any grade level!

[Splat!](#) (Grades K-12): An interactive number sense strategy game for any grade level!

[Chartr](#) (Grades 3-12+): Chartr provides bite-sized, visually appealing data visualizations. What do you notice? What do you wonder?

[CODAP](#) - I was introduced to this via the Stanford data science class. It is a VERY cool tool to play with data. There are premade data sets. It is geared to students in grades 6-12.

[MOEMS Problem of the Week](#) - The Mathematical Olympiads for Elementary and Middle School (MOEMS) updates this each week.

[Which One Doesn't Belong](#) (Grades K-12+): a math routine that gives four choices, but each answer is correct! Since students know that their answer is correct regardless of the choice, they are at ease to consider the why behind their choice. This website is a bank of visual, open-ended sets where you justify "which one doesn't belong." Can you or your students come up with a justification for each selection presented?

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**If you have any suggested additions or changes, contact:**

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LEAs have the duty to select instructional materials that best correlate to the core standards for Utah public schools and graduation requirements. (UCA 53G-4-402(1(a))). Posting of these resources by USBE staff curriculum content specialists does not imply the resources have received official endorsement of the State Board. Educators are responsible to ensure use of these materials complies with LEA policies and directives.

[NCTM Problems of the Week](#) by NCTM (Grades K-12+): a bank of high-quality mathematical problems curated by the National Council for the Teachers of Mathematics.

[Maths Venn](#) (6-12+): fun and engaging puzzle-like math Venn Diagrams!

[Math Fun Facts](#) (9-12+): Each Math Fun Fact is a math [puzzle](#) or short article that contains a cool mathematics idea—a “fun fact.”

[Slow Reveal Graphs](#) (3-12+): The Slow Reveal Graph ([#slowrevealgraph](#)) is an instructional routine that promotes sensemaking about data. This highly engaging routine uses scaffolded visuals and discourse to help students make sense of data. As more and more of the graph is revealed, students refine their interpretation and construct meaning, often in surprising ways. This routine increases access for students without sacrificing rigor or engagement. To get pre-made slide decks of slow reveal graphs, navigate to the website and click “Resources for the Classroom” → Pick the Graph Type → Select a Topic → click on “Slide Deck”

[Estimation 180](#) (3-12+): Estimation tasks that make mathematical reasoning accessible to students and enjoyable.

[Euclidea](#) (6-12+): Euclidea is all about building geometric constructions using straightedge and compass. About doing it the fun way. With Euclidea you don’t need to think about cleanness or accuracy of your drawing — Euclidea will do it for you. But it’s also a game. A game that values simplicity and mathematical beauty. Find the most elegant solution — the one, which is built in the least possible moves, — and you’ll get the highest score.

[Menu Math](#) (8-12+): Each constraint must be satisfied *at least once*, and students try to complete this goal *using as few mathematical objects as possible*. This mechanism preserves a low entry point (where teachers might ask students to design objects that satisfy one or two constraints), but escalates the possibility as students analyze which constraints pair well together and which cannot pair well together.

[Play With Your Math](#) (3-12+): How can we get our students (and colleagues) to play with their math? We take problems that we love, and we adapt them so that everyone (and

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anyone) can play. We design posters and handouts that hook you visually and explain the problem in just enough words. The problems that we've picked require trying, struggling, failing, adjusting, and trying again until, finally, a discovery is made.

[Complex Instruction Consortium](#) (2-12+): A wonderful collection of mathematical tasks.

[Nrich](#) (Cambridge University) (PK-12+): NRICH is an innovative collaboration between the Faculties of Mathematics and Education at the University of Cambridge which focuses on problem-solving and on creating opportunities for students to learn mathematics through exploration and discussion. NRICH provides thousands of free online mathematics resources for ages 3 to 18, covering all stages of early years, primary and secondary school education - completely free and available to all.

[Clothesline Math](#) (K-12+): The Clothesline is a manipulatable number line that makes the facilitation of class discourse on number sense much more efficient and effective. The Clothesline is dynamic, meaning that the "benchmark" numbers may be adjusted when needed, as well as the values that are placed on the line.

[Teacher Desmos](#) (K-12+): Desmos wants to build a world where every student learns math and loves learning math, where a student's access to the power and beauty of math doesn't depend on their place of birth, race, ethnicity, gender, or any other aspect of their identity.

[Brilliant Daily Challenge](#) (Grades 4-12+): Can you use your logic and reasoning skills to solve these high-cognitive demand puzzles?

[YouCubed](#) (Grades K-12): Low threshold, high ceiling tasks, naturally differentiating, highly engaging, and aligned with grade levels. YouCubed tasks aren't specifically aligned with a math standard but allow students to access and experience rigorous mathematics. The only drawback is not enough content!

[Skew the Script](#) (Grades AP/CE Statistics): The creators of Skew The Script were tired of numeric procedures and contrived word problems. They were tired of seeing their students' eyes glaze over in boredom. Most of all, they were tired of seeing the script play

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out as written. So, they decided to skew the script. They have a bank of upper secondary level Statistics lessons that are addicting!

[Open Middle Math Robert Kaplinsky](#) (Grades K - 12): Tasks complete with teacher lesson plans that include engaging, current topics with rigorous mathematics. These tasks are all tied to grade-level content areas. The only drawback is not enough content.

[New York Times What Is Going On In This Graph?](#) (Grades 4-12+): A new graph or data-infographic is posted regularly and asks students and adults to talk about What do you notice? What do you wonder? A statistician then holds a webinar to talk about the notices and wonderings live. These graphs and data-infographics are wonderful to use in the classroom synchronously with the NY Times schedule as well as asynchronously when you find a graph or data-infographic that speaks to you.

[Five Thirty Eight data sets](#) (Grades 3-12+): How do you find interesting data sets to share with your students? FiveThirtyEight has everything from Bob Ross data sets to Weather to World Cup data.

[Achieve the Core Coherence Map](#) (Grades K-12): The Coherence Map shows the connections between State Standards for Mathematics. They help build student understanding by linking together concepts within and across grades. The map assists in identifying gaps in a student's knowledge by tracing a standard back through its logical pre-requisites and it helps you visualize and understand how supporting standards relate to the major work of the grade. Embedded in the map are over 45 math tasks tied to standards.

[Would You Rather](#) (Grades K-12): A comprehensive series of mathematical tasks that ask students to pick an option based on the popular "Would you rather...." series. Highly engaging and content that spans all K-12 grade bands.

[Visual Patterns](#) (Grades K-12): A set of visual patterns—can you figure out what the next set of shapes will look like? How do you know? Could you find the 28<sup>th</sup> set? How many would be in it? Is there a set that has 86 objects? How do you know?

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[Tiled Area Problems by Steve Wyborney](#) (Grades K-12): Can you use your knowledge of area and fractions to figure out the area of the entire shape? How do you know?

[Data Nuggets](#) (Grades 4-12+): Explore different “data nugget” sets to make meaning or discover trends.

[SolveMe Puzzles](#) (Grades K-12): A set of high-cognitive tasks divided into three categories: Mobiles, Who Am I?, and MysteryGrid (funded by the National Science Foundation). Each problem gets consecutively more cognitively demanding—try it out and see what happens!

[When Math Happens](#) by Dan Meyer (Grades 3-12): 3-Act Tasks with engaging video clips and simple questions that are of the "What do you notice? What do you wonder? What do you need to know?" style. These tasks are all tied to grade-level content areas. The only drawback is not enough content!

[dy/dan](#) by Dan Meyer (Grades 7-12): 3-Act Task resources with engaging video clips and teacher notes. Dan's blog is highly informative and helps give educators ideas about how to effectively implement 3-Act Tasks.

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