

Kern County STEAM Olympiad Resource Page

These resources will help your team become familiar with the STEAM Olympiad competition. **Be sure to read the event information packet for the 2025 Kern County STEAM Olympiad event as some of the resources may vary slightly from this event.**

Event Title	Resource Type and Link	Resource Description
Code Busters (note: Only Cesar, Vigenere, Atbash, Aristocrat, Dancing Men, and Baconian Ciphers will be used for this competition.)	Video Link	This video will give a sample of a Codebusters competition. Not all ciphers will be used as in the video, but the competition rules and parameters will be similar.
	Video Link	This video will give an overview of the Cesar Cipher and solving techniques.
	Video Link	This video will give an overview of the Aristocrat Cipher and solving techniques.
	Video Link	This video will give an overview of the Vigenere Cipher and solving techniques.
	Video Link	This video will give an overview of the Aristocrat Cipher and solving techniques.
	Video Link	This video will give an overview of the Bacon Cipher and solving techniques.
	Video Playlist Link	This link will populate a series of videos about the Codebusters competition.
	Video Link	This video is a coaches video for the Codebusters competition. The STEAM Olympiad competition will have the same rules and

		competition parameters but not all ciphers in the video will be used in the Kern County competition.
	Website Link	This website describes the Codebusters competition for the Science Olympiad. Lesson plans, practice tests, and book resources are available at this site.
Mancala	Video Part 1 Part 2 Part 3	This is a 3 part video series of setup and strategies to win in a 36 stone mancala game.
Mousetrap Vehicle	Video Link	The vehicle must travel down the track, stop within a certain range, then reverse direction and return to the start.
	Video Link	Mousetrap Vehicle footage from the 2009, 2010, and 2018 Science Olympiad National Tournaments plus interviews with coaches and student competitors; sample devices and demonstrations shown. The 2025 Kern County STEAM Olympiad will not require the vehicle to push a cup.
Ping Pong Parachute	Video Link	This video shows the event and feedback from participants in a Science Olympiad event.
Rube Goldberg	Website Link	This website provides free and available for purchase resources to increase understanding of Rube Goldberg machines.

	Website Link	This website is full of resources and ideas to increase the functionality of your Rube Goldberg machine.
Storm The Castle	Video Link	This video shows the process of two students working on their trebuchet and making adjustments to achieve their goal.
	Website Link	This website describes design ideas for trebuchets and catapults.
	Video Link	Storm the Castle is a trebuchet event. On the first shot the team was just over. Rather than try to recalibrate the device, they took advantage of the 2 meter launch area and simply slid their device back in the box the distance they were off. Launch 2 and 3 are perfect hits.
Sudoku	Video Link	This video will introduce and provide strategies for students on how to solve a 3 x 3 sudoku puzzle.
Chalk Talk	Video Link	During this short video, it introduces what the Chalk Talk competition looks like. Two students are presenting their topic to the judges.

Biathlon	<u>Contig and Circle Tic-Tac-Toe Game boards</u>	Both Contig and Circle Tic-Tac-Toe game boards are included allowing students practice time. Please note, that there are two different game boards for Contig. One is for grades 4-6 and the other is for grades 7 and 8.
School Problem-Solving	<u>School Problem-Solving Practice Guide</u>	Here is an example test for grades 6, 7, and 8.
Traditional Relay	<u>Grade 4</u> <u>Grade 5</u> <u>Grade 6</u> <u>Grade 7</u> <u>Grade 8</u>	Attached are example practice cards for each grade level. The best way to utilize the copies is to print and cut them into single cards to allow students to practice the process. An answer key card is also included.