MATH FIELD DAY 2020
DESCRIPTION OF CONTESTS

INDIVIDUAL MEDLEY Test is sent to coaches in April and administered at the school site prior to Field Day. The Individual Medley consists of multiple-choice questions, which are worked within a 35-minute time limit. Awards are given to the students with the best 6th, 7th and 8th grade score from each school. Winner's list is faxed or e-mailed to KCSOS prior to Math Field Day. Non-programmable calculators allowed.

POWER RELAYS 9:00
Five-person teams enter from each grade (6, 7, and 8). The relay consists of four different rounds of five questions with a total time limit of 25 minutes.
Maximum: 15 students from a school, five from each grade.

The five students line up approximately 50 feet from the problem sheet. Students must remain in the same order throughout the relay. Each student runs to his/her team's assigned paper and chooses a question to answer and writes their name in the corresponding space. Across from their name, the student must place either an answer or an X indicating he/she could not come up with an answer. Then, they run back and tag the next teammate. Each question may only be attempted once!

After the first five questions have been attempted, rounds 2, 3 and 4 will proceed in the same manner without interruption. The winner will be determined by the most correct responses. In the case of a tie, the team with the shorter elapsed time will be declared the winner. **Participants may use provided calculators.**

LEAP FROG 9:00
Grade level teams of two from each grade 6th - 8th grades are entered with each person working different sets of multiple-choice problems during the first round (30 minutes). At the end of Round 1 and a five minute break, papers are exchanged and each person is allowed 30 minutes to check, correct and complete his/her partner's work. During this checking period, teammates can show each other the work they are doing and write notes, but no talking will be allowed. All work is entered on a single Scantron sheet. **Only provided calculator use allowed.** While students may move up a level to fill a team, they may not move down to a lower grade team.

SCHOOL PROBLEM SOLVING 9:00
Each four-member team works together on 20 problems (members can be from any grade). They can divide the problems up or do them cooperatively. There will be one answer sheet for each team. The first team finishing with the highest number of correct solutions is the winner; the time limit is 80 minutes. **Only provided calculator use allowed.**

CIRCUIT TRAINING 9:00
Each two-person team will move through 20 different stations. They will work collaboratively on estimation, spatial visualization, interpretation of tables, charts, and maps and other interesting problems. Each team will be allowed 2-3 minutes per station (at the discretion of the proctors). Maximum: One two-person team from 6th grade, and one two-person team from 7th and 8th grades combined.
Only provided calculator use allowed.

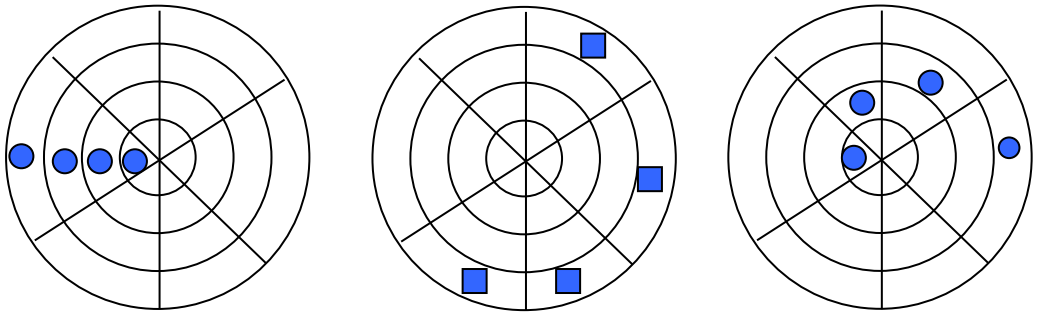
MAD HATTER 9:00
Each grade level will have a separate multiple-choice test. Student teams of two from each grade level may enter. Twenty problems will be projected on a large screen at 45-second intervals. The questions will **not be read aloud.** Students in pairs will choose the best answer and record it on their Scantron sheet, being careful that their words or hand signals are not intercepted by other teams. The Scantron sheets will be collected by the proctors and turned in to central scoring after each grade's round.
Only provided calculator use allowed.

FIELD DAY GAMES TOURNAMENT 9:00
One participant from each grade at a school—6th, 7th, and 8th. All players play Contig and Circle Tic Tac Toe. The top eight students then proceed to play Mancala as an elimination tournament. The top four places in each grade level receive medals.

CIRCLE TIC TAC TOE (First Game)

Two rounds are played by all students; points are given for each win or bye. To break ties for eighth place, Contig will be played. The object of the game is to get four marks (x's or o's) in a row in one of three ways: straight out from the center, around any ring, or by a spiral "staircase" move in either direction. The center point may not be crossed to get 4 in a row.

Examples of winning moves



CONTIG (Second Game)

Materials:

- Contig game board
- Different colored marker for each player
- 4 dice
- 2 –4 players; try to ensure even player counts for each group

Directions:

- Each player rolls all three dice. High roll goes first.
- Players rotate clockwise and select three dice to roll.
- The object of the game is to create a problem with the numbers rolled that has an answer corresponding to one of the unoccupied squares on the Contig Game Board. The student may use any of the four operations and may use the numbers rolled in any order.
  Example: If the student rolled 3, 2 and 4, some possible combinations are:

  $3 + 2 - 4 = 1$
  $3 \times 2 + 4 = 10$
  $4 \div 2 + 3 = 5$

- Once a player creates a problem, that player writes that problem on paper and the other players check to see if the answer is correct. If the answer is correct, the player colors the square. If the answer is incorrect, they lose that turn.
- A time limit may be imposed for each player's turn and to end the game.

Strategy: Place colors to connected squares to create runs or to block your opponent's attempt to build a run. Bonus points are scored for direct connections of **two to five** of the same color **(No more than 5 points can be earned from each marker placed!)** Highest total wins the game.

Unable to play: If there is no available space possible with that particular roll, the player declares he/she is unable to move and passes the dice. However, if a possible total for an available space was overlooked, any other player may point out the move, and place his/her own color in that space, but you must declare for the space before the dice are rolled.

Game ends when one of these occurs:

- All spaces are filled
- Each person has taken 12 turns
- After 3 consecutive rolls by each player results in no available spaces.
- Allotted time is up (be sure to allow for all players to have taken an equal number of turns)

Scoring:

- 1 point for each marker on board
- Bonus points from each marker as follows:
  2 connections = 2 points
  3 connections = 5 points
  4 connections = 7 points
  5 or more = 10 points

Mancala (Third game for finalists)

This is a single elimination tournament, which will consist of top 8 students from 6th, 7th and 8th grades. The teacher will determine how many games are played in each round according to the time available (usually 1 or 3).
Description: Start with three stones in every hole in the carton; have one Kalah at each end. Coin flip determines who moves first. Pick up all stones from any section on your own side; drop one stone in each section as you move around to the right. Drop one stone in your own Kalah as you go by; never put stones in your opponent's Kalah. If your last stone lands in your Kalah, you get an extra turn. If your last stone lands on an empty section on your side you MUST "capture" the stones across from it. Put your stone and your opponent's stones into your Kalah. If you capture, that ends your turn. Whichever player empties his/her side first gets all the remaining stones in the opponent's sections. Count your Kalah to determine the winner. Loser chooses who goes first in the next game if the round has more than one game.

SUDOKU 9:00

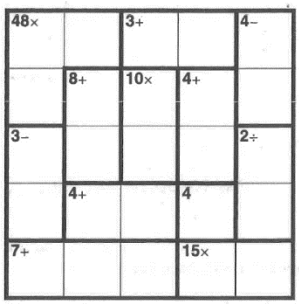
Participants will be given 75 minutes to work through six levels of puzzles to from easiest to hardest. Complete the grid so that every row, column, and 3x3 box contains every digit from 1 to 9 inclusively. One student from each grade level may be entered from each school.

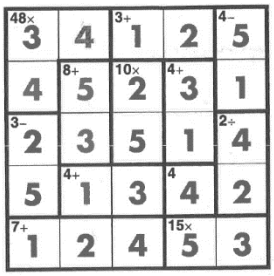
9	6		5				8	3
3			2	7	9			4
		2	6				9	
	9				6	7		
7	4						5	1
		8	4				2	
	7				5	4		
6		3	9	1	4			5
5	1				8		3	2

9	6	7	5	4	1	2	8	3
3	8	1	2	7	9	5	6	4
4	5	2	6	8	3	1	9	7
2	9	5	1	3	6	7	4	8
7	4	6	8	9	2	3	5	1
1	3	8	4	5	7	6	2	9
8	7	9	3	2	5	4	1	6
6	2	3	9	1	4	8	7	5
5	1	4	7	6	8	9	3	2

KENKEN 9:00

These puzzles were invented in 2003 by Tetsuya Miyamoto as a way to help his students learn arithmetic and develop logical thinking. It is similar to a crossword puzzle but uses numbers. The puzzles can use any or all of the four operations. The puzzles are solved by completing each "cage" (bold edges) to equal the answer using the operation given. Participants will be given 75 minutes to work through six levels of puzzles to from easiest to hardest. One student from each grade level may be entered from each school.





PRACTICE RELAY Follows completion of Power Relays
Maximum number of entries: four 6th, four 7th, and four 8th students from each school. Teams may be filled by students moving up a level, but never down. Each grade level team will consist of four members. At a signal, the first member of every team will run a short distance to get his/her problem, solve it, put the answer on an answer card and run back as quickly as possible. Then the second member of each team runs forward, gets his/her question, answers it, and so on until all four questions have been answered. The first team to submit four correct answers is the winner. If any questions are answered incorrectly, each student will run again and check his/her own work until the mistake or mistakes have been found. The judges will not indicate which answers are incorrect. The questions will not be too difficult. The relay race continues until winning teams are determined for each division. **Calculators are not allowed. Prizes are awarded on the spot.**

TRADITIONAL RELAY Final Event of day
Maximum number of entries: four 6th, four 7th and four 8th students from each school. Teams may be filled by students moving up a level, but never down. Each team will consist of four members. At a signal, the first member of every team will run a short distance to get his/her problem, solve it, put the answer on an answer card and run back as quickly as possible. Then the second member of each team runs forward, gets his/her question, answers it, and so on until all four questions have been answered. The first team to submit four correct answers is the winner. If any questions are answered incorrectly, each student will run again and check his/her own work until the mistake or mistakes have been found. The judges will not indicate which answers are incorrect. The questions will not be too difficult. The relay race continues until winning teams are determined for each division. **Calculators are not allowed.**

RUBIK"S CUBE open all day, No sign up required
Come test your skill in solving the Rubik's Cube in between your events. The fastest time for each grade level receives the medal.

AWARDS approx. 1:15