"Math Is Cool" Championships — 2020-21

4th Grade — March 24, 2021

Sponsored by: Avista Utilities

GENERAL INSTRUCTIONS applying to all tests:

- *Good sportsmanship is expected throughout the competition by all involved (competitors and observers). Display of poor sportsmanship will result in disqualification.*
- *Competitors may not use calculators or any other aids on any portion of this contest.*
- *Unless stated otherwise:*
  - *Express all rational, non-integer answers as common fractions, except in problems dealing with money, where you should give the answer as a decimal rounded to the nearest cent.*
  - *For 5th grade and up, all fractions and ratios must be reduced to simplest form, all radicals must be simplified, and all denominators must be rationalized.*
  - *Do not round or approximate answers. Leave answers in terms of π or other irrational quantities (e.g., √2), where applicable.*
- *Units are not necessary as part of your answer, unless it is a problem that deals with time, in which case, AM or PM is required. However, if you choose to use units, they must be correct.*
- *Record all answers on the colored cover sheets in the answer column only.*
- ***Be sure that the student name, school, team number, etc. has been filled out at the top of each answer sheet.***
- *Tests will be scored as a 0 if answers are not recorded correctly on the answer sheets.*
- *Blank answer sheets and answer sheets with no name will be scored as a 0.*

FINAL SCORES AND AWARDS

Individual awards are determined by both the Mental Math and Individual Test scores. Individual ties are broken based on the following, in this order: total scaled individual points, total number of correct answers on the Individual Test, Mental Math raw score, number of correct answers from Individual Test #31-40, number of correct answers from Individual Test #16-30, highest numbered question answered correctly on the Individual Test working backwards from #40.

Team (School) awards are based on the highest score from amongst each of the school's "teams of 4 students" in each event and is calculated as 2·(Sum of highest 3 Mental Math scores) + 2·(Multiple Choice) + 6·(Team) + 1·(Triple Jump) + 1·(College Bowl), for approximate weights of 25%, 20%, 30%, 15% and 10% respectively. Team ties are broken based on highest event score in order of the events, starting with Mental Math.

MENTAL MATH TEST - 30 sec./quest., 8 problems, ~8%/25% of individ./team scores

The proctor will read each question twice. You may not do any writing or talking while arriving at a solution. Record only your answer on your answer sheet. You may not change, cross out, erase, or write over an answer once you have written it down. The maximum wait time is 30 seconds after completion of the second reading of the question. Correct answers receive 1 point.

INDIVIDUAL TEST - 35 minutes, 40 problems, ~92% of individual score

When you are prompted to begin, tear off the colored answer sheet and begin testing. No talking during this individual test. You will be given a 5 minute time warning. Correct answers receive 2 points for problems 1-30 and 3 points for 31-40 (in the scaled score).

"Math Is Cool" Championships — 2020-21

4th Grade — March 24, 2021

Sponsored by: Avista Utilities

Final Score *(out of 8)*

Room # _____ **School Name** _____ **Student Name** _____ **Team #**

Mental Math – ~25% of team score & ~8% of individual score

All students in the room will concurrently be asked the same eight questions in this individual test. When it is time to begin, the proctor will read the first question twice. You may not do any writing or talking while arriving at a solution. Once you have a solution, record it on the sheet in front of you. ***You may not change or cross out answers once you have written an answer down. If there are eraser marks, write-overs, or crossed-out answers, they will be marked wrong.*** *Once all students have laid their pencils on the desk, another question will be asked. If a student doesn't lay his or her pencil down, the maximum wait time is 30 seconds after completion of the second reading of the question before the next question is read. You may continue to work on a problem (in your head) while the next question is being read. The raw score is 1 point per correct answer.*

STUDENT: DO NOT WRITE IN SHADED REGIONS (or anywhere else, other than the answer box)

	Answer	Scorer 2 0 or 1	Scorer 1 0 or 1
1			
2			
3			
4			
5			
6			
7			
8			
4th Grade	**TOTAL:**		

"Math Is Cool" Championships — 2020-21

4th Grade — March 24, 2021

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Key

Mental Math Contest – Answer Key

30 seconds per question – ~25% of team score & ~8% of individual score

SCORERS — Write-overs, Cross-outs, and Erasures Must be Marked Incorrect (0)
Bracketed items […] in the answer key are optional.

4th Grade

	Answer	
1	16	What is the sum of eleven and five?
2	8 [sides]	How many sides does an octagon have?
3	25 [minutes]	How many minutes are there between 3:50 PM and 4:15 PM on the same day?
4	48	What is the next number in the following sequence? 3, 6, 12, 24…
5	6	What is 20% of 30?
6	21	If two-thirds of my number is equal to 14, what is my number?
7	28	Biff can ride a bike at 13 miles per hour. Eho can ride a bike at 17 miles per hour. If they start at the same time and place, going the same direction, how many miles apart will they be after 7 hours?
8	25	What is two to the 4th power plus 3 to the 2nd power?

"Math Is Cool" Championships — 2020-21

4th Grade — March 24, 2021

Sponsored by: Avista Utilities

Individual Contest

Record all answers on the colored cover sheet. 35 minutes, 40 problems, ~92% of individual score.
No talking during this individual test. A 5-minute time warning will be given.

	Questions 1-30: 2 points each
1	What is the largest number in the following list: 79, 102, 322, 99, 250
2	What is the sum of 64 and 8?
3	$8 \times \_\_ = 56$ What number belongs in the blank?
4	What digit is in the tens place? 845,621.073
5	How many sides does a quadrilateral have?
6	How many lines of symmetry does this shape have? 
7	Write this out as a single multi-digit number: five hundred sixty-four thousand, three hundred one. (Do not use a comma when entering your answer.)
8	A regular pentagon has sides of length 2 cm. What is the length of the perimeter in cm?
9	What is 2,900 minus 879?
10	What is the product when you multiply all the digits of 740.258?
11	What is the remainder when 522 is divided by 8?
12	How many minutes will have passed from the time shown on the clock to 3:52 PM on the same afternoon? 
13	What is the numerator when you completely reduce the fraction 10/15?
14	What is 2021 rounded to the nearest 100?

15	Today is Wednesday. What day will it be 12 days after yesterday? Enter an integer as your answer, according to the following code: 1 = Sunday, 2 = Monday, 3 = Tuesday, 4 = Wednesday, 5 = Thursday, 6 = Friday, or 7 = Saturday.
16	What is the next prime number greater than 31?
17	What is the sum of the first three multiples of 7?
18	How many dollars is 50,000 dimes?
19	Izela is doing a science experiment that requires her to let the experiment cool for $4\frac{1}{4}$ hours. How many minutes is this?
20	Edwin is sorting his Beyblades. He has 3 blue ones, 4 red ones, and 5 silver ones. If he shares his Beyblades evenly with his neighbor, how many will Edwin have left?
21	Easton claims that he grows $\frac{3}{4}$ of an inch per week. At this rate, how many weeks will it take him to grow 15 inches?
22	What is the biggest counting number that can be put in the blank and the inequality will still be true? $8 + 3 + \_\_ < 15$
23	Alejandro buys a birthday present for his best friend and pays for it with a $20 bill. The cashier gives him back 3 one-dollar bills, 6 quarters, 12 dimes, 4 nickels and 10 pennies. How much did the birthday gift cost in dollars?
24	What is the sum of all the positive whole number factors of 51?
25	What is $\frac{4}{3} \div \frac{2}{9}$?
26	When Justine plays Among Us, she is an imposter 20% of the time and the rest of the time, she is not an imposter. If she played the game 460 times last year, how many times was she NOT an imposter?
27	Lauren is selling face masks. It costs her $3 in materials for each mask and she sells them for $7 each. After selling 20 masks, how many dollars has she made as a profit after deducting the cost of supplies?
28	How many ways can you rearrange the letters in the word COVID?
29	What is the next year that will use the same four digits as the year "two thousand twenty one"?
30	Two numbers have a sum of 36 and a difference of 22. What is the larger of the two numbers?

Challenge Questions: 3 points each	
31	Solve for x: $2x + 13 = 41$
32	A rectangle has an area of 60 sq. cm and a perimeter of 34 cm. How many centimeters is the longest side of the rectangle?
33	A new mathematical symbol @ is defined such that $a@b = 2a - b$. What would 9@6 equal?
34	When 9^{10} is multiplied out, what digit is in the ones place?
35	Kate has 6 boxes and some number of cookies. Whether she decides to use 2, 3, 4, 5, or 6 boxes to divide the cookies, Kate can always divide her cookies equally between the boxes. What is the minimum number of cookies Kate could have?
36	I have $100. First, I gave 40% of my money to Evie. Then, I gave 50% of my remaining money to Rithani. Finally, I kept 10% of what was left, and gave the rest to Andra. How many dollars did Andra receive?
37	Hagrid brought unicorns and 3-headed dogs to his Care of Magical Creatures class. If there were a total of 18 heads and 32 feet on the creatures Hagrid brought, how many unicorns are there?
38	Dane has a rectangular treasure box that he wants to decorate by covering all the outside surfaces with paper. What is the total surface area of paper in square centimeters that he would need to cover a box with dimensions 8 cm, 10 cm, and 25 cm.
39	To prepare for a Hawaiian luau, you need to cook a Kalua pig in the ground for 6 minutes for each pound that it weighs. You begin cooking a 97 pound pig at 5:15 AM. The luau is scheduled to start at 4:50 pm. How many minutes are there between the time the pig will be finished cooking and the start of the luau?
40	King Arthur had a circular 52-person table built. The table can seat King Arthur and his 51 knights equally spaced at 6 feet apart for social distancing. Each knight wears a mask with his seat number and King Arthur takes mask and seat number 1. The seats are numbered sequentially 1 through 52. Which mask number will the knight sitting in seat number 20 see directly across the table from him?

"Math Is Cool" Championships – 2020-21

KEY

Individual Contest – Answer Key

SCORERS: Bracketed […] items in answer key are optional. Just mark the score as 0 or 1 and add up those values to reflect total correct. First Scorer – use the right-hand columns so 2nd scorer can do a blind scoring.

	Answer
1	322
2	72
3	7
4	2
5	4
6	1
7	564301
8	10 [cm]
9	2021
10	0
11	2
12	17 [minutes]
13	2
14	2000
15	1

	Answer
16	37
17	42
18	[$]5000
19	255 [minutes]
20	6 [beyblades]
21	20 [weeks]
22	3
23	[$]14
24	72
25	6
26	368 [times]
27	[$]80
28	120 [ways]
29	2102
30	29

	Answer
31	14
32	12 [cm]
33	12
34	1
35	60 [cookies]
36	[$] 27
37	3 [unicorns]
38	1060 [sq. cm.]
39	113 [minutes]
40	[Knight] 46

4th Grade

March 24, 2021

"Math Is Cool" Championships – 2020-21

Total Correct (all columns)

Room # _____ SCHOOL NAME _____ STUDENT NAME _____ Team # _____

Individual Contest – Score Sheet

STUDENTS: DO NOT WRITE IN SHADED REGIONS

	Answer	1 or 0	1 or 0
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
1-15 TOTAL:			

	Answer	1 or 0	1 or 0
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
16-30 TOTAL:			

	Answer	1 or 0	1 or 0
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
31-40 TOTAL:			

4th Grade

March 24, 2021

Scorers: Just score as 0 or 1 and add up those values (i.e., just work with number correct).

"Math Is Cool" Championships — 2020-21

4th Grade — March 24, 2021

Sponsored by: Avista Utilities

Team Multiple Choice Contest

USE THE FOLLOWING INFORMATION TO SOLVE PROBLEMS #1 THROUGH #6.

Math-a-Mask Emporium Prices		
Mask Theme	Cost bought separately	Cost as a pack
Solid Color	$11.00	4 for $35.00
Flowers	$12.00	3 for $31.50
Math equations	$12.50	4 for $42.00
Sports Team	$15.00	5 for $85.00
Double Sided	$17.00	6 for $69.00
Designer Label	$20.00	2 for $30.00

1. What is the difference in dollars between the cheapest mask and the most expensive mask when purchased separately?

   A) $9.00 B) $8.50 C) $10.00 D) $10.50 E) Answer not given.

2. Fumiko bought 1 pack of sports team masks, 3 packs of double-sided masks, and 3 packs of math masks. How many masks did she buy in total?

   A) 40 masks B) 25 masks C) 20 masks D) 15 masks E) Answer not given.

3. Lillian bought two flowered masks, one sports team mask, and 3 solid color masks. How much did Lillian spend?

   A) $39 B) $50 C) $64 D) $72 E) Answer not given.

4. Jose purchased one pack of designer masks and one math equation mask. He paid with a $50 bill. How much money did Jose receive in change?

   A) $7.50 B) $8.50 C) $19.50 D) $42.50 E) Answer not given.

5. Which mask pack gives the biggest discount per mask compared to the same type sold separately?

   A) Solid Color B) Flowers C) Double-Sided D) Designer Label E) Answer not given.

Continued on Next Page

6 During the Mathemagic Mask Sale all single masks are 20% off and mask packs are 30% off. How much in dollars would 8 Math Equation masks and one double sided mask cost if purchased in the cheapest way possible during the sale?

A) $70.70 B) $72.40 C) $90.90 D) $93.60 E) Answer not given.

USE THE FOLLOWING INFORMATION TO SOLVE PROBLEMS #7 THROUGH #10.

10 Largest California Wildfires in History

Size Rank	Name of Fire	Thousands of Acres Burned	Year of Fire
1	August Complex	1030	2020
2	Mendocino Complex	460	2018
3	SCU Lightning Complex	400	2020
4	Creek	380	2020
5	LNU Lightning Complex	360	2020
6	North Complex	320	2020
7	Thomas	280	2017
8	Cedar	270	2003
9	Rush	270	2012
10	Rim	?	2013

7 What percent of the ten largest California wildfires occurred during the year 2020?

A) 10% B) 50% C) 60% D) 90% E) Answer not given.

8 Rounded to the nearest ten-thousand, what is the average number of acres burned in the 5 largest California wildfires that occurred in the year **2020**?

A) 380 thousand acres B) 410 thousand acres C) 480 thousand acres
D) 500 thousand acres E) Answer not given.

9 Rounded to the nearest ten-thousand, the average of the 5 smallest fires on the list is 280 thousand acres burned. How many acres were burned in the Rim Fire of 2013?

A) 260 thousand acres B)250 thousand acres C) 230 thousand acres
D) 200 thousand acres E) Answer not given.

Continued on Next Page

10	Besides the 2020 fires listed in the table, an <u>additional 1,870 thousand acres</u> burned in California in the year 2020 that are not included in the table. The size ratio of the **2020 California** wildfires to the 2019/20 Australian fires is 4:11. Using this ratio, approximately how many acres burned in Australia during the 2019/20 fire season, rounded to the nearest ten-thousand? A) 10 thousand acres B) 12,000 thousand acres C) 11,990 thousand acres D) 12,400 thousand acres E) Answer not given.

"Math Is Cool" Championships — 2020-21

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Key

Team Multiple Choice Contest – Answer Key

4th Grade

Correct responses are worth 2 points, incorrect responses are worth -1 point, and absence of a response is worth 0 points.

	Answer
1	A
2	E [35 masks]
3	D
4	A
5	C
6	B
7	B
8	D
9	A
10	C

"Math Is Cool" Championships — 2020-21

4th Grade — March 24, 2021

Final Score *(out of 20)*

Room # _____ **School Name** _____ **Team #**

Team Multiple Choice Contest – 15 minutes – ~20% of team score

This test is the only test where you will be penalized for incorrect responses. You will receive two points for a correct letter response, zero points for leaving it blank, and minus one point for an incorrect response. When you are prompted to begin, tear off the colored answer sheet, pass out a copy of the test to each team member, and begin testing. ***ONLY a letter response should be listed as an answer on this answer sheet.***

Correct responses are worth 2 points, incorrect responses are worth -1 point, and absence of a response is worth 0 points.

STUDENTS: DO NOT WRITE IN SHADED REGIONS

		Scorer 2	Scorer 1
Answer		-1, 0, or 2	-1, 0, or 2
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
4th Grade	**TOTAL:**		

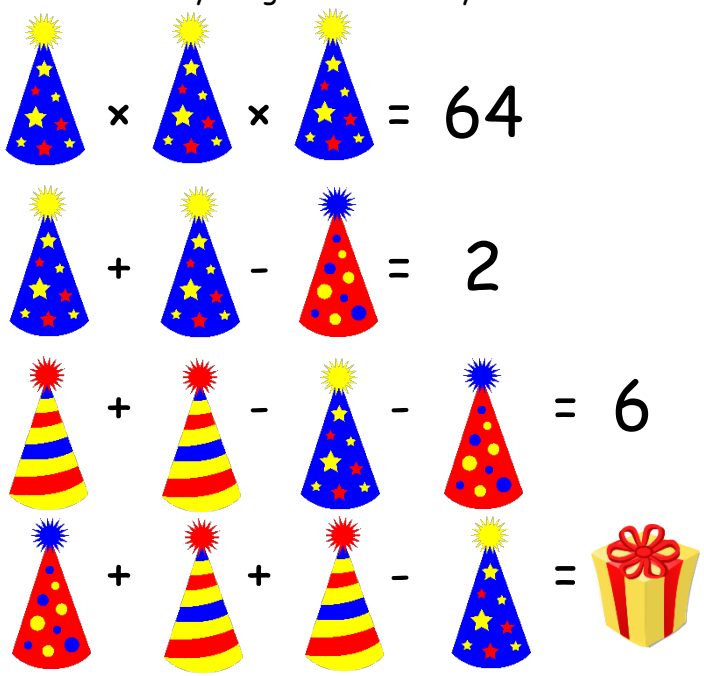
"Math Is Cool" Championships — 2020-21

4th Grade — March 24, 2021

Sponsored by: Avista Utilities

Team Contest

1	Walker and ten of his closest friends are having a snowball fight on New Year's Day. They have prepared 6446 snowballs to share equally among the 11 children. How many snowballs will each child get to throw?
2	Emily, who is COVID positive, exposed three classmates at a Valentine's Day party. Each of those classmates exposed seven family members. How many total people were exposed to COVID by Emily (not counting Emily)?
3	Biff and Eho are preparing for the Mathville Annual Easter Egg Hunt. They have a bin with 500 Easter eggs. There are at least 20 of each of the following colors of eggs: red, orange, yellow, green, blue, and purple. If Biff reaches in blindfolded, how many eggs does he need to pull out to be guaranteed to have two eggs that are the same color?
4	Limin is practicing for the annual 4th of July bike race on a standard high school track that is one-fourth of a mile around. Limin rides his bike at an average rate of 22 miles per hour. How many trips around the track would Limin make if he rides his bike at this steady rate for one hour?
5	Grace and her best friend decide to prank their whole class for April Fool's Day. They bought 19 whoopee cushions for $5 each, 7 books of Mad Libs for $4 each, and 9 packs of trick rubber pencils for $3 each. Grace and her friend split the cost evenly between themselves. How much did Grace have to pay for her half of the supplies?
6	This year, the Mathville Mayor declared that summer begins at 12 AM on Memorial Day (May 31) and ends at 11:59 PM on Labor Day (September 6) How many summer days are there this year in Mathville?
7	Brycen's extended family is having a large Thanksgiving feast that consists of 48 dishes, including desserts, appetizers, side dishes, drinks, and main dishes. One-third of the dishes are desserts. There are half as many appetizers as there are desserts. There are 3 times as many main dishes as drinks. There are the same number of side dishes as appetizers. How many main dishes are there at Brycen's Thanksgiving dinner?

8	It's your birthday and your Grandpa sent you the following clues to figure out the number of dollars inside your gift. How many dollars are inside your gift? 
9	In Candyville, each house gives 3 pieces of candy to children who are trick or treating (or they don't give out candy at all). Eva can go trick-or-treating in only one neighborhood on Halloween. In West Candyville, she can visit 10 doors every 20 minutes, but 1 out of every 6 doors she visits will not be handing out candy. In East Candyville she can visit 12 doors every 15 minutes, but one out of every 4 doors is not handing out candy. What is the maximum number of pieces of candy Eva can receive after 1 hour of trick-or-treating?
10	Millions of clovers are spread evenly across St. Patrick's Meadow where 1/12 of the clovers have 4 leaves while the rest of the clovers have 3 leaves. Larry the Leprechaun counts a total of 156 clovers inside a 6 inch by 6 inch square of meadow. How many 4-leaf clovers would he expect to find in an 8 foot by 8 foot square of meadow?

"Math Is Cool" Championships — 2020-21

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Key

Team Contest – Answer Key

4th Grade

	Answer
1	586 [snowballs]
2	21 [people]
3	7 [eggs]
4	88 [trips]
5	[$]75
6	99 [days]
7	12 [main dishes]
8	18[dollars]
9	108 [pieces of candy]
10	3,328 [4-leaf clovers]

"Math Is Cool" Championships — 2020-21

4th Grade — March 24, 2021

Final Score *(out of 10)*

Room # School Name Team #

Team Contest – 15 minutes – ~30% of team score

When you are prompted to begin, tear off the colored answer sheet and give a copy of the test to each of your team members and begin testing. Each problem is scored as a 1 or 0. Record all answers on this colored answer sheet.

STUDENTS: DO NOT WRITE IN SHADED REGIONS

	Answer	Scorer 2 0 or 1	Scorer 1 0 or 1
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
4th Grade	**TOTAL:**		

"Math Is Cool" Championships — 2020-21

4th Grade — March 24, 2021

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Linda Moore Triple Jump

1	What is 7420.079 rounded to the nearest whole number?
2	A large Zoom call can accommodate 1000 participants. If a call is 80% full, how many more participants can join the call?
3	Sahana has a package of charms and is putting charms onto 6 bracelets. She puts 7 charms on each bracelet and has 5 left over. How many charms were in the package?
4	What is the sum of the all of the even integers between 1 and 21?
5	Santa's bag is full of gifts, and weighs a total of 14 pounds. The empty bag weighs 4 pounds by itself. Each gift in the bag weighs 1 pound, and is worth $100. How many total dollars are the gifts in Santa's bag worth?
6	Use the following clues to find the mystery 3 digit number. 1 6 2 — One digit is correct and in the correct position. 9 8 5 — Nothing is correct. 2 3 4 — One digit is correct and in the correct position. 1 7 3 — One digit is correct but not in the correct position. 5 7 4 — Two digits are correct. One is in the correct position and one is not in the correct position. ? ? ? — What is the mystery number?
7	Tehya is drawing squares and pentagons on a piece of paper, so that none of the sides are touching. She has at least one of each shape. There are a total of 32 sides on her paper. How many pentagons has Tehya drawn?
8	Maria enters an office building on the ground floor (1st floor). She takes the stairs up 3 floors and then takes the elevator up 12 more floors to the middle floor of the building. How many floors in all does the building have?

9	Hank has a bag of 50 marbles. Ninety percent of them are red and the remainder are blue. After some of the red marbles were removed from the bag, 75% of the remaining marbles are red. How many red marbles were removed from the bag?
10	Five crewmates have a total of $340 between them. Cyan has twice as much as Red. Red has three times as much as Yellow. Yellow has half as much as Green. Purple has $100. How much money does Cyan have in dollars?

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Key

Linda Moore Triple Jump – Answer Key

4th Grade

	Answer
1	7420
2	200 [participants]
3	47 [charms]
4	110
5	[$] 1000
6	764
7	4 [pentagons]
8	31 [floors]
9	30 [marbles]
10	[$] 120

"Math Is Cool" Championships — 2020-21

4th Grade — March 24, 2021

Final Score *(out of 10)*

Room # **School Name** **Team #**

Linda Moore Triple Jump – 15 minutes – ~30% of team score

When you are prompted to begin, tear off the colored answer sheet and give a copy of the test to each of your team members and begin testing. Each problem is scored as a 1 or 0. Record all answers on this colored answer sheet.

STUDENTS: DO NOT WRITE IN SHADED REGIONS

	Answer	Scorer 2 0 or 1	Scorer 1 0 or 1
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
4th Grade	**TOTAL:**		

"Math Is Cool" Championships — 2020-21

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Room # School Name Team #

Total Score for Each Round

College Bowl #1 (10 Possible)	College Bowl #2 (10 Possible)	College Bowl #3 (10 Possible)

DO NOT USE TALLY MARKS ON THIS SHEET. WRITE THE TOTAL SCORE FOR EACH ROUND.

"Math Is Cool" Championships — 2020-21

4th Grade — March 24, 2021

Room # School Name Team #

Total Score for Each Round

College Bowl #1 (10 Possible)	College Bowl #2 (10 Possible)	College Bowl #3 (10 Possible)

DO NOT USE TALLY MARKS ON THIS SHEET. WRITE THE TOTAL SCORE FOR EACH ROUND.

"Math Is Cool" Championships — 2020-21

4th Grade — March 24, 2021

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Proctor Copy

Mental Math Contest

MENTAL MATH – 30 seconds per question – ~25% of team score & ~8% of individual score

All students in the room will concurrently be asked the same eight questions in this individual test. When it is time to begin, the proctor will read the first question twice. You may not do any writing or talking while arriving at a solution. Once you have a solution, record it on the sheet in front of you. ***You may not change or cross out answers once you have written an answer down. If there are eraser marks, write-overs, or crossed-out answers, they will be marked wrong.*** *Once all students have laid their pencils on the desk, another question will be asked. If a student doesn't lay his or her pencil down, the maximum wait time is 30 seconds after completion of the second reading of the question before the next question is read. You may continue to work on a problem (in your head) while the next question is being read. The raw score is 1 point per correct answer.*

1	What is the sum of eleven and five?	16
2	How many sides does an octagon have?	8 [sides]
3	How many minutes are there between 3:50 PM and 4:15 PM on the same day?	25 [minutes]
4	What is the next number in the following sequence? 3, 6, 12, 24…	48
5	What is 20% of 30?	6
6	If two-thirds of my number is equal to 14, what is my number?	21
7	Biff can ride a bike at 13 miles per hour. Eho can ride a bike at 17 miles per hour. If they start at the same time and place, going the same direction, how many miles apart will they be after 7 hours?	28
8	What is two to the 4th power plus 3 to the 2nd power?	25

"Math Is Cool" Championships — 2020-21

4th Grade — March 24, 2021

Sponsored by: Avista Utilities

Key

COLLEGE BOWL ROUND #1

#	Problem	Answer
1	What is the sum of 125 and 13?	138
2	What is the average (mean) of the following 5 numbers? 3, 12, 14, 11, 10	10
3	What is 8 squared?	64
4	What is the greatest prime factor of 120?	5
5	The SKELD space station takes 644 minutes to orbit the earth 7 times. How many minutes does it take for the space station to orbit the earth one time?	92 [minutes]
6	You and 10 friends are competing in a Minecraft tournament. How many possible ways are there to award 1st, 2nd, and 3rd places?	990 [ways]
7	Biff walked 200 feet. Eho walked 40 yards. How many more feet did Biff walk than Eho?	80 [feet]
8	Mustafa has 15 pairs of tennis shoes. How many tennis shoes does he have?	30 [shoes]
9	How many quarts are in 5 gallons?	20 [quarts]
10	Bryson gives Amanda 6 cookies. Now they each have 25 cookies. How many cookies did Amanda have to begin with?	19 [cookies]

"Math Is Cool" Championships — 2020-21

4th Grade — March 24, 2021

Sponsored by: Avista Utilities

Key

COLLEGE BOWL ROUND #2

#	Problem	Answer
1	Jose has 20 pencils. His teacher gives him 2 more pencils. What is the percent increase in the number of pencils he has?	10 [%]
2	Two angles of a triangle are 45 degrees and 32 degrees. In degrees, what is the measure of the 3rd angle?	103 [degrees]
3	When you completely reduce the fraction 12/48 you get a fraction in the form of A/B. What is A + B?	5
4	Dane pulls 19 weeds in 30 minutes and Lizzy pulls 14 weeds in 20 minutes. How many weeds can they pull in an hour?	80 [weeds]
5	The sum of two numbers is 88. The difference of the numbers is 12. What is the average of the two numbers?	44
6	You roll two standard 6-sided dice. How many different sums are possible when you add the two numbers showing on the dice?	11 [sums]
7	What is the product of 25 and 28?	700
8	What is the perimeter of a regular nonagon with a side length of 3 cm?	27 [cm]
9	How many centimeters are equal to 2.5 meters?	250 [cm]
10	If an angle is 34 degrees, how many degrees is its complementary angle?	56 [degrees]

"Math Is Cool" Championships — 2020-21

4th Grade — March 24, 2021

Sponsored by: Avista Utilities

Key

COLLEGE BOWL ROUND #3

#	Problem	Answer
1	What is the smallest positive factor of 2021?	1
2	There are a total of 15 students in Kellen's 4th grade class. When they line up for lunch, they have to stand 6 feet apart. How many feet long will their lunch line be?	84 [feet]
3	Medha got scores of 10, 9, 7, 10, 6, 9, and 10 on her last seven math quizzes. What was her median quiz score?	9
4	A checkerboard is 8 squares by 8 squares. Each of 2 players starts with 8 pawns, with each pawn on its own square. What percent of the total checkerboard squares start with a pawn on it?	25 [%]
5	Andy's lucky number is a positive factor of 28 and a multiple of 7. What is the smallest number that Andy's lucky number can be?	7
6	How many degrees will the minute hand of an analog clock move between 3:40 PM and 3:55 PM on the same day?	90 [degrees]
7	If the ratio of girls to boys in a class of 28 students is 3:4, how many girls are there in the class?	12 [girls]
8	What is the quotient of 30 and 5?	6
9	After having a fever, Alex has to quarantine for 288 hours. How many days does he have to quarantine?	12 [days]
10	What is one-fourth of 256?	64

Proctoring Overview

You will receive a room packet envelope with the schedule and College Bowl rotations on the front. Each room packet includes:

1) the proctor instructions and the general instructions that you will be reading,
2) the proctor question/answers packet (this needs to be carefully controlled), and
3) sets of Mental Math, Individual, Multiple Choice, Team, and Relay test materials. (If not in the room packet, the proctor supervisor will provide blank scratch paper.)

When you receive the room packet, count to ensure that you have the correct number of tests for each event (16 Mental Math & Individual, 4 of each of the team events).

Key Points

- Act professional; focus on what you are doing.
- Your job is to proctor the students; that is, you administer tests, give time warnings, & monitor students for proper test taking behavior to ensure competition integrity and avoid issues like failing to put answers on the answer sheet.
- The proctor packet has Mental Math, Relay, and College Bowl questions/answers. Keep the packet secure! Avoid opportunities for competitors to see the tests or answers.
- Student/school names and team numbers are critical on the answer sheets. Make sure that students fill out such identifying information.
- Keep track of time, and provide appropriate time warnings. Keep to the schedule as close as possible. Wait between events, if needed.
- Read & know the rules—competitors & spectators will, and they will call you on it.
- On questions that you read, read smoothly, enunciate clearly, and don't read too fast.
- You will score the Relays.
- If unsure of how to deal with an issue/question/concern, flag down the proctor supervisor and ask.
- Be respectful of your classroom — leave it tidy and arranged exactly as you found it. We don't want any displeased teachers!!
- Use the quick-reference guide on the next page for room setup and key information.

Schedule

Each of the 6 events includes about 5 minutes at the start for reading instructions or rearranging the room.

3:30 - 4:00	Coaches register (Library)	6:05 - 6:10	Relay #1
4:05 - 4:15	Orientation (Gym)		
4:15 - 4:20	Students go to testing rooms		
4:20 - 4:35	Mental Math		
4:35 - 5:15	Individual Test		
5:15 - 5:35	Team M.C. Test		
5:35 - 5:55	Team Test		
5:55 - 6:05	Relay Practice		

6:10 - 6:15	Relay #2
6:15 - 6:40	Proctors get dinner in proctor room
6:45 - 6:55	College Bowl #1
6:55 - 7:05	College Bowl #2
7:05 - 7:15	College Bowl #3
7:15 - 7:25	College Bowl #4
7:25 - 7:35	College Bowl #5
7:35 - 7:45	College Bowl #6
8:00 - 8:30	Awards Ceremony (Gym)

1. Mental Math

Configuration: Students at individual desks spread out in the classroom. Alternating desks, students not next to teammates.

Scheduled Time: 4:20-4:35 PM (read instructions & test)

Duration: 30 seconds per question maximum (beginning after the 2nd reading)

Give Time warning at: 5 seconds

Number of questions: 8 (all students do the same questions)

Proctor Actions: Read each question twice, reading clearly and not too fast. Start the 30 second clock after the 2nd reading.

Key Points: Start by reading "General Instructions" then Mental Math instructions. Make sure everyone writes their name, school & team number on the answer sheet. No talking allowed. Except for the answer, no is writing allowed. Collect answer sheets and organize by team number, then alphabetically by first name of competitor, & staple sheets for the same team together.

2. Individual Test

Configuration: Students at individual desks; same arrangement as for Mental Math.

Scheduled Time: 4:35 PM (read instructions), 4:40-5:15 (test)

Duration: 35 minutes

Give Time warning at: 5 minutes & 30 seconds

Number of questions: 40

Proctor Actions: Ensure appropriate test-taking behavior. Prep for next event (or furtively read College Bowl questions to yourself).

Key Points: Read "Individual Test" instructions. Make sure everyone writes their name, team number, school, proctor name, & room number down on the answer sheet. Collect answer sheets, organize by team, then alphabetically by first name of competitor, and staple sheets for same team together.

3. Team Multiple Choice Test

Configuration: Groups of 4 desks, with the groups spread out in the classroom.

Scheduled Time: 5:15 PM (read instructions), 5:20-5:35 PM (test)

Duration: 15 minutes

Give Time warning at: 5 minutes & 30 seconds

Number of questions: 10

Proctor Actions: Ensure appropriate test-taking behavior. Prepare for next event.

Key Points: Read Mult. Choice instructions. Students can talk quietly & work together.

4. Team Test

Configuration: Groups of 4 desks spread out in the classroom (same as Team Mult. Choice).

Scheduled Time: 5:35 PM (read instructions), 5:40-5:55 PM (test)

Duration: 15 minutes

Give Time warning at: 5 minutes & 30 seconds

Number of questions: 10

Proctor Actions: Ensure appropriate test-taking behavior. Prepare for next event.

Key Points: Read Team Test instructions. Need to have school & team number on answer sheet. Students can talk quietly & work together.

5. Relay Tests

Configuration: Columns of 4 desks, one behind the other.

Scheduled Time: 5:55 PM (read instructions), 6:00-6:15 PM (test)

Duration: 5 minutes per relay

Give Time warning at: 30 seconds

Number of questions: 4 total per relay (~1 per person/relay)

Proctor Actions: Ensure appropriate test-taking behavior. Score Relays #1 and #2 at the end of each Relay (without showing any answers to students).

Key Points: No talking allowed. Students may not turn around. Students may only pass the answer sheet back (no work or notes). Proctor: circle the point value earned for each answer (0 or 1 or 2). Teams of 3 sit in positions 2, 3, & 4.

6. College Bowl

Configuration: Row of 9 desks (side by side) at the front of the room (CBA device on center desk).

Scheduled Time: 6:45 PM (read instructions), 6:50-7:45 PM (test)

Duration: 45 seconds per question (30 seconds per question if there is only one team, who will be only going against the clock)

Give Time warning at: 5 seconds

Number of questions: 10 per round, 6 rounds total

Proctor Actions: Read each question twice, reading clearly and not too fast. Start 45 (or 30) second clock after the 2nd full reading. Mark tally on white board as questions are answered and transfer the numeric total to the score sheets.

Key Points: Event is collaborative, talking is allowed. For a wrong answer, just say, "That is incorrect." (no verbal/visual clues that could be interpreted by the other team to arrive at an answer).

Summary of MIC Proctoring

(for proctors to read to themselves)

Pass out materials (answer sheet/test packets, scratch paper) for the current event to individuals or teams (as appropriate) so they can fill in the name, school, and team number information (very important!). Tell students to not lift the cover sheet or turn over the paper until you give the signal to start. Read the general instructions as the first item at the beginning of the competition (before Mental Math). Read the event-specific instructions just prior to each event and ask if there are any relevant questions. After reading the instructions, you can signal students to begin. Make sure one proctor is watching the time and giving appropriate time warnings (e.g., "five minutes remaining"). At the end of the event, tell competitors to stop work. Collect, sort, & staple the answer sheets (as appropriate) and keep them secure until handed off to a runner.

For the Mental Math/Individual tests, arrange students scattered throughout the classroom with **no student next to another student from their own school**. For the team tests, students will be in groups of 4 desks. The Relay will require the desks arranged in columns (front to back). College Bowl will require a line of 9 desks side-by-side across the front of the classroom.

For College Bowl, place the College Bowl apparatus (CBA) on a central desk in the line of desks at the front (4 desks on either side of the central one). One proctor will likely need to hold the CBA in place during the College Bowl rounds. Turn the apparatus on by depressing the button or flipping the dip switch. Students may try out the CBA prior to the 1st question. Note: while one light is blinking, the other light is locked out. There is no need to "reset" the device, just let the light finish blinking and it is ready to go.

Keep Relay answers secure while you score the Relays because answers for all three Relays are on the same sheet. Do not read the answer for College Bowl when you read the question (they are both on the same page). In College Bowl, if an incorrect answer is given, simply say "That is incorrect" and do not give any other cues about the answer (e.g., don't say "sorry, you were close" or exhibit interpretable body language). If both teams fail to supply a correct answer, announce what the correct answer was.

If there is an irregularity (i.e., lack of honesty, poor sportsmanship), make a note of the circumstances, flag the answer sheet, and report the issue to the proctor supervisor.

At the end of the day, <u>return the desks to their original arrangement</u>, recycle any unwanted test materials & used scratch paper, erase any marks you made on the whiteboard, and generally make sure the classroom is tidied up. Return the CBA, the room packet envelope, the proctor instructions, the contest rules packet, the proctor packet of questions, extra scratch paper, and unused test material to the proctor supervisor.

Detailed Instructions for Proctors

Grades 4-8

NO CALCULATORS ALLOWED ON ANY TESTS!

1. Check to make sure you have everything in your packet.
   - A. ***Mental Math:***
     1. 16 - colored Mental Math answer sheets
     2. Mental Math questions with answers (in the Proctor Packet)
   - B. ***Individual Test:*** 16 individual tests, with colored answer sheets attached
   - C. ***Team Multiple Choice Test:*** 4 team multiple choice packets (stapled), each containing 4 tests plus one colored answer sheet on top
   - D. ***Team Test:*** 4 team test packets (stapled), each containing 4 tests plus one colored answer sheet on top
   - E. ***Relays:***
     1. 4 - blank Relay answer sheet packets (with cover sheet/instructions)
     2. 4 - Practice Relay test sets, 4 - Relay #1 test sets, and 4 – Relay #2 test sets (each set has 4 sheets for positions 1-4)
     3. Relay Answer Key (in the Proctor Packet)
   - F. **College Bowl:**
     1. 4 - College Bowl score sheets
     2. College Bowl questions – 6 rounds (in the Proctor Packet)
   - G. Scratch paper (to be handed out as needed, but try not to waste it)
   - H. Electronic College Bowl Apparatus (CBA; usually distributed at dinner break)

   ALL *COLORED* ANSWER SHEETS WILL BE COLLECTED BY YOU AND WILL BE TAKEN TO THE SCORING ROOM (by RUNNERS) AS SOON AS THEY ARE FILLED OUT BY COMPETITORS (AND PERHAPS GRADED BY YOU). COMPETITORS CAN KEEP ALL OF THE WHITE SHEETS, IF THEY WOULD LIKE (OTHEWISE COLLECT THEM FOR RECYCLE).

   If you are missing anything, you can go get it before the opening ceremony. After the opening ceremony, contact the proctor supervisor/scoring room.

2. Take a photo or draw a picture on the whiteboard of how the classroom is laid out (so that it can be returned to its original configuration following the competition). Then set up the classroom desks for the first event (Mental Math).

Respect the teacher whose room you are using. Do not touch their computer or other items. Do not erase anything on their board. Leave the room tidy & in the exact original layout.

Mental Math

3. Arrange desks in a configuration suitable for individual testing (rows/grid of desks all facing forward, students in separated/alternating desks).

4. Put the Mental Math answer sheets face up on the desks such that students are spread out. Wait for students to arrive. You can fill out the proctor name and room number (and perhaps team numbers) on all blank answer sheets, if you like. Read over the questions so you will be prepared to read them out loud.

5. After students sit down, check to make sure that no one from the same team is seated next to each other (i.e., "Team xxx, raise your hands."). Ask them to move, if needed.

6. **Check to make sure that students put their full name, school name, team number, and room number on their answer sheet and that the information is legible**.

7. Read the "GENERAL INSTRUCTIONS" (in the Proctor Packet) to the students. Then, read the "MENTAL MATH" instructions (in the Proctor Packet) to the students.

8. Begin the testing. Read each of the eight Mental Math questions to all of the students in the room, per the instructions.

9. At the conclusion of Mental Math, collect the answer sheets. Organize the answer sheets by team number, then alphabetically by first name of competitor. Staple each team's set of four answer sheets together. Promptly hand the packets of answer sheets to your runner for conveyance to the scoring room.

Individual Test

10. The seating configuration will remain unchanged (no swapping seats).

11. Hand out Individual Test packets with the colored blank answer sheet facing up. **Check to make sure that students put their full name, school name, team number, and room number on their answer sheet and that the information is legible**.

12. Read the "INDIVIDUAL TEST" instructions (in the Proctor Packet) to the students and begin the testing at the appointed time.

13. While students are taking the Individual Test, monitor the students for proper test-taking behavior and watch the time to provide 5-minute and 30-second warnings. Make sure students are writing answers on the answer sheet (not the test question pages). During this time you can also get the Individual Multiple Choice tests ready, read through the rules of subsequent events, and (carefully/secretively) look ahead to review the College Bowl questions (i.e., to avoid stumbling over the wording when it comes time to read the questions aloud). You will have observers in the room watching the College Bowl rounds, so make sure you understand the rules, how timing works, etc.

14. At the conclusion of Individual Test, collect the answer sheets. Organize the answer sheets by team number, then alphabetically by first name of competitor. Staple each team's set of four answer sheets together. Promptly hand the packets of answer sheets to your runner for conveyance to the scoring room. Students may keep or recycle their test question packets.

Team Multiple Choice

15. Change the room set-up to groups of 4 desks together so students can work as a team.
16. Hand out the tests and have teams fill out the top portion of the answer sheet. **Check answer sheets to make sure they are filled out correctly (school, team #, etc.).**
17. Read the "TEAM MULTIPLE CHOICE" instructions (in the Proctor Packet) to the students and begin the testing at the appointed time.
18. Monitor the students for proper test-taking behavior (talking is allowed), watch the time, and provide 5-minute and 30-second warnings. While students are taking the Team Multiple Choice test, get the Team Tests ready.
19. At the conclusion of the test, collect the answer sheets & hand them off to the runner.

Team Test

20. Keep the same seating arrangement in groups of four. Hand out the Team Test packets and have teams fill out the information at the top of the colored answer sheet. **Check the answer sheets to make sure they are filled out correctly (school, team #, etc.).**
21. Read the "TEAM TEST" instructions (in the Proctor Packet) to the students and begin the testing at the appointed time.
22. Monitor the students for proper test-taking behavior (talking is allowed), watch the time, and provide 5-minute and 30-second warnings. While students are taking the Team Test, get the Relay tests ready.
23. At the conclusion of the test, collect the answer sheets & hand them off to the runner.

Relay Tests

24. Arrange each team of four students so that their desks are right behind each other and all facing the front of the room. For example, person 1 will be at the front of the line facing the front of the room. Person 2 will be right behind person 1 so that they are facing the back of person 1's head, etc. Teams of three sit in positions 2, 3, and 4. Teams of two sit in positions 2 and 4.
25. Pass out the packet of answer sheets to person 1 of each team. Have them fill out the top of <u>all three</u> answer sheets. They will use these sheets to record **only their final answer** and will pass only this answer sheet back to the next person. There is NO TALKING during the Relays and students MAY NOT look behind them – they must always be facing forward. Students may not change positions, nor leave the room, between Relays.
26. Once the top of the answer sheets are filled out, you may pass out the practice Relay questions to the appropriate people. Make sure person 1 gets the "person 1" piece of paper, etc. The questions must remain face down until it is time to start.

27. Read the "RELAY" instructions (in the Proctor Packet) to the students and begin the testing at the appointed time.

28. Once the Relay begins, everyone from the team may turn their sheet over and start working. They can use their slip of paper for scratch paper and it must never be passed back to the next person. The time allotted for each Relay is 5 minutes, so be sure you keep track of the time. Position yourself behind person 4 and be ready to collect each team's answer sheet once they complete the Relay or the time is up.

29. PRACTICE RELAY — This round is being done to teach the students how to do the math Relays, so this round is **not** to be scored. Address any questions that arise and correct the students if they misunderstood the procedures. Practice Relay answer sheets may be recycled.

30. RELAY #1 — Make sure that you are passing out Relay #1. Make sure the question sheets are face down and that each person has the correct sheet (i.e., person 1 has the person 1 sheet, etc.).

    Scoring: Questions #1, #2, #3: 1 point if the answer is correct
    Question #4: 2 points if the answer is correct
    Total possible: 5 points for each Relay round

    Circle the points for each question and fill in the total on the answer sheet. Lay out all of the answer sheets from this Relay so you can pair up the Relay #2 sheets by team.

31. RELAY #2 — Repeat the same process as for Relay #1.

32. At the conclusion of Relay #2, release the students for their break. Staple the pairs of answer sheets for each team together and hand off the set of Relay answer sheets to the runner. If there is anything left (i.e., answer sheets) that should have been taken to the scoring room, give those to the runner or have a proctor take it to the scoring room now.

33. Set up your room for the College Bowl rounds and tidy up the room before you go to break. Set up a line of 9 desks side by side facing the front of the room. One team will be on each side (doesn't matter which) and the College Bowl apparatus will be stuck down on the desk in the middle. Another row of 8 desks should be set up in the middle of the room for the two teams not competing in a round. Other desks should be moved to the back of the room in an orderly fashion for the spectators.

34. Take your packet of College Bowl questions with you during break to keep them secure! Do not leave them in the room!

Dinner Break

35. AT BREAK — Eat dinner in the proctor room. Pick up your College Bowl apparatus (CBA) at this time. If you haven't already, you may want to read over the College Bowl questions to make sure you will be able to pronounce everything properly. Return to your room in time to place the CBA in position.

College Bowl Rounds

36. Place the CBA on the middle desk of the line at the front of the room (you may want to moisten the suction cups with a film of water). One proctor may need to hold the device down (and do timing). Do not press the button to "reset" the CBA (it's an on/off switch).
37. You will have the same teams that were previously in the room for the duration of all College Bowl rounds — if you have an extra/different team, they are in the wrong room and can be disqualified if they hear the questions! Help get them to the correct room.
38. Fill out the score sheets for each team in your room with their school name and team number. Call up the first 2 teams according to the sequence on the room envelope.
39. You will be reading Round #1 questions to two teams while the other two teams (and any spectators) wait in the back of the room out of line of sight of the competitors. Refer to the College Bowl schedule (on your room envelope) to see which two teams compete in each round. If a round only has one team, they will be competing against the clock and thus will have 30 seconds to answer, not 45 seconds. Record the final scores for each team on their score sheets (which you hold on to) after each round. Rounds 2-6 work the same way. Refer to the schedule to make sure the correct teams are competing at the correct time. Don't get ahead of schedule (or behind, for that matter!). If you finish a round early, please wait until the appointed time to start the next round. If you have any problems (including anyone questioning the rules or a decision made by a proctor) contact the proctor supervisor.
40. Who is keeping score? Who is keeping track of the time? YOU ARE !!!
41. Read the "COLLEGE BOWL" instructions (in the Proctor Packet) to all the students (just one time), then begin the testing for each round at the appointed times.
42. If you mis-read a question, replace it with one of the extra questions.
43. If a parent/coach/student protests an answer, make a note of the situation (the test, the problem number, who answered, what their answer was, etc.) and kindly state that the coach should bring up the issue with the contest director. Proceed as normal, scoring the question based on the answer key.
44. At the conclusion of all College Bowl rounds, get the score sheets promptly to the scoring room (either yourself or via a runner).
45. Release your group to the awards ceremony no earlier than 7:45 PM to avoid causing a disruption to other rooms. Have students help re-set the room.
46. At the end of the day, return the desks to their original arrangement, collect all scratch paper, erase any marks you made on the whiteboard, and generally make sure the classroom is tidied up. Return the College Bowl apparatus, proctoring envelope, and residual material to the proctor supervisor.

General Instructions

- Good sportsmanship is expected throughout the competition by all involved (competitors and observers). Display of poor sportsmanship will result in disqualification.
- Competitors may not use calculators or any other aids on any portion of this contest.
- Unless stated otherwise:
  - Express all rational, non-integer answers as common fractions, except in problems dealing with money, where you should give the answer as a decimal rounded to the nearest cent.
  - For fifth grade and up, all fractions and ratios must be reduced to simplest form, all radicals must be simplified, and all denominators must be rationalized.
  - Do not round or approximate answers. Leave answers in terms of π or other irrational quantities (e.g., $\sqrt{2}$), where applicable.
- Units are not necessary as part of your answer, unless it is a problem that deals with time, in which case, AM or PM is required. However, if you choose to use units, they must be correct.
- Record all answers on the colored cover sheets in the answer column only.
- **Be sure that the student name, school, team number, etc. has been filled out at the top of each answer sheet.**
- Tests will be scored as a 0 if answers are not recorded correctly on the answer sheets.
- Blank answer sheets and answer sheets with no name will be scored as a 0.

Mental Math Instructions

All students in the room will concurrently be asked the same eight questions in this individual test. When it is time to begin, the proctor will read the first question twice. You may not do any writing or talking while arriving at a solution. Once you have a solution, record it on the sheet in front of you. **You may not change or cross out answers once you have written an answer down. If there are eraser marks, write-overs, or crossed-out answers, they will be marked wrong.** Once all students have laid their pencils on the

desk, another question will be asked. If a student doesn't lay his or her pencil down, the maximum wait time is 30 seconds after completion of the second reading of the question before the next question is read. You may continue to work on a problem (in your head) while the next question is being read. The raw score is 1 point per correct answer.

Individual Test Instructions

You will have 35 minutes to work on the Individual test, which consists of 40 questions. When you are prompted to begin, tear off the colored sheet and begin testing. Make sure your name and school are recorded on the answer sheet. The first 30 questions are worth two points each and questions 31-40 are worth 3 points each. Record your answers on the score sheet. No talking during the test. You will be given a 5 minute warning.

Team Multiple Choice Instructions

You will have 15 minutes to answer 10 multiple choice questions as a team. This test is the only test where you will be penalized for incorrect responses. You will receive two points for a correct letter response, zero points for leaving it blank, and minus one point for an incorrect response. When you are prompted to begin, tear off the colored answer sheet, pass out a copy of the test to each team member, and begin testing. **ONLY a letter response should be listed as an answer on this answer sheet.**

Team Test Instructions

You will have 15 minutes to answer 10 questions as a team. When you are prompted to begin, tear off the colored answer sheet and give a copy of the test to each of your team members and begin testing. Each problem is scored as a 1 or 0. Record all answers on this colored answer sheet.

Relay Instructions

There is no talking during this event and you must always be facing forward.

Person #1 will be given answer sheets and will need to fill out the top portion of each. The proctor will hand out a strip of paper to each person. These need to be face down on your desk until it is time for the Relay to start. Once the Relay begins, everyone may turn over their strip of paper and begin working, but first make sure you have the right person number.

Person #1 receives a full problem to solve. Questions 2-4 will be missing a number and will show the acronym "TNYWG" (meaning "the number you will get") *[Proctor: write this on the board]* as a placeholder in the problem statement. The answer for the previous question (i.e., received from the teammate in front of you) should be inserted into the problem statement in place of "TNYWG."

Person #1 will have problem #1 on his/her paper. Person #2 will have problems #1 and #2 printed on his/her paper. Person #3 will have problems #2 and #3 on his/her paper and Person #4 will have problems #3 and #4 on his/her paper.

You may write on the strip of paper to come up with answers to the problems on your strip of paper. However, when person #1 figures out his/her problem, he/she will record ONLY his/her final answer on the answer sheet and pass only the answer sheet back (without turning around) to the person #2.

Person #2 has the option of changing Person #1's answer if he/she wants, by crossing it out and putting a new answer. Once Person #2 records at least an answer for problem #2 on the answer sheet, he/she passes only the answer sheet behind to Person #3. Repeat these steps until person #4 puts an answer on the answer sheet and gives it to the proctor.

Each teammate has the option of changing any answers on the answer sheet when they have it in their possession, but once it is passed back, they will not see the answer sheet again.

Teams with only three members can position themselves in positions 2, 3, and 4 to provide answers for all four problems. Teams of two can sit in positions 2 and 4.

The raw score will be 1 point for correct answers to problems 1-3 and 2 points for question 4. <u>Any non-answer text (i.e., scratch work or notes) on the answer sheet will result in a score of 0 for the entire Relay.</u>

College Bowl Instructions

Read these to the competitors before the first round:

To maintain the integrity of the competition, spectators must stay in this room during a round of College Bowl questions. Once all readings for a round have been completed, you may leave.

All competitors must be facing the front of the room in one row. Teams not competing in the current round need to be behind the front row and in front of the spectators. All spectators need to be behind the competitors at the back of the room.

A maximum of ten questions per round will be scored. It is OK for both teams to score the same number of points! The proctor will record the points earned on each team's score sheet, which is retained by the proctor.

You may use scratch paper and pencil. You may talk with your team members while arriving at a solution.

An Electronic College Bowl Apparatus (CBA) will be used to identify the team who is first to have an answer.

During these rounds, each question will be read twice and a maximum time of 45 seconds after the second reading of the question is completed will be allowed for a team to answer. If a team buzzes in after the second reading and gives an incorrect response, the other team has the remainder of the 45 seconds to respond. A team is allowed only one attempt at buzzing in and answering per question. You may interrupt (buzz in) while a question is being read, however, if you do, the proctor will stop reading, and an immediate response is needed. If the correct response is given, the proctor will proceed to the next question. Otherwise, the question will be re-read for the other team, making sure it has two full readings. If an immediate response is not given after a team buzzes in, their lack of an answer in a timely manner is considered incorrect. In the event that only one team is competing in a round (i.e., one team is absent), the team competing will have a maximum of 30 seconds after the completion of the second reading in which to buzz in. The proctor will give a 5-second time warning.

Wait to be acknowledged by the proctor before giving an answer. This avoids the situation of blurting out an answer when the other team buzzed in first.

If two students from the same team answer at the same time with different answers, the answer will be considered incorrect.

If a problem arises with one of the questions, an extra question will be asked to replace that question.

If the round finishes early, you need to stay in the room for the remaining time.

Mental Math Questions

Relay Answers

College Bowl Questions/Answers