

SCORING

A well-organized scoring room is critical for a successful competition. Falling behind with scoring the tests is a typical problem. It is important that the tests be scored carefully and consistently. Please review the list of scoring room supplies provided later in this section when setting up your scoring room. These items will help to keep the scoring room organized and running smoothly.

Key Volunteers in the Scoring Process

Scoring must be done in a separate and quiet room. Have plenty of extra tables and room to lay out and track the incoming tests for grading and to organize the scored tests before and after the scoring sheets (and data entry if using the scoring program) are completed. A very capable volunteer should be designated as **Head Scorer** and should be able to address all volunteer scorers' questions. The Head Scorer must be completely familiar with the MATHCOUNTS Rules & Procedures, the scoring procedures and the general flow of the competition.

There also needs to be a **Judge** (or judges panel) in the scoring room. It is possible that the Judge is the same person as the Head Scorer. However, the Judge's responsibility is to rule on any scoring/mathematics issues that arise. The Judge must be a person who is extremely knowledgeable of the MATHCOUNTS rules and who is mathematically capable of responding to inquiries regarding the problems on the competition. The Judge also would be consulted to determine if alternate forms of an answer would be accepted or to analyze an answer that is difficult to read/illegible. The judge should be given a copy of the entire competition ahead of time so that s/he has the opportunity to work through every problem before the day of the competition. Remind the judge that all problems must be kept confidential even after the competition is complete. S/he *may not* share their copy of the competition with anyone.



MATHCOUNTS coordinators and other volunteers in the scoring room of the 2011 Raytheon MATHCOUNTS National Competition.

The recommended minimum number of **scorers** is one for every two schools. Ideally, there will be one scorer per school. Scorers should work in pairs, trading tests so that each test is graded twice and using two different color pens or markers for grading. The scores are then entered onto the tally sheets (the carbonless forms). The pairs of scorers should also double-check the accuracy of how the results are transferred to the carbonless tally sheets. **Parents and coaches of competitors should not serve in the scoring room under any circumstances due to the potential conflict of interest – whether real or perceived.**

If you have enough volunteers, a volunteer can be assigned to monitor the entrance to the scoring room. Only competition officials and those volunteers who are working in the scoring room should be permitted in the scoring room. **No parents, students or coaches may be in the Scoring Room.**

The MATHCOUNTS Scoring Program software is a great resource in the Scoring Room. If the scoring program is used, a **Head Computer Scorer** should be assigned to oversee the data entry process and the volunteers assigned to help with the data entry. The Head Computer Scorer must be familiar with the MATHCOUNTS scoring program ahead of time. Depending on the size of the competition and the number of computers that will be used, **data entry volunteers** should be assigned to help with the computer scoring. If the scoring program is used, the data entry and Head Computer Scorer should be far enough away from the scorers (or in a separate room) so they do not disturb each other.

Calculating Scores

A student's **Individual Score** is comprised of the sum of the number of Sprint Round questions answered correctly and twice the number of Target Round questions answered correctly. (Note: Every team member and every registered individual will have an Individual Score.) There are 30 questions in the Sprint Round and 8 questions in the Target Round, so the maximum possible Individual Score is 46. If you are conducting an official Countdown Round, your participants will be selected to participate in the Countdown Round based on these computed Individual Scores (with ties broken). An official Countdown Round determines the final order of finish for the top individuals. Each state coordinator decides whether the chapters in his/her state will hold official Countdown Rounds or not. Every chapter in his/her state must do the same thing – either hold an official Countdown Round or not hold an official Countdown Round. If your state elects not to hold an official Countdown Round, as a chapter coordinator you may individually decide to not hold any Countdown Round at all or to hold an unofficial one in any format you wish.

Scores on the competition do not conform to traditional grading scales. **Coaches and students should view an individual score of 23 (out of a possible 46) as highly commendable.**

A **Team Score** is calculated by dividing the sum of the team members' Individual Scores by 4 (even if there are fewer than 4 team members) and adding twice the number of Team Round questions answered correctly. The highest possible Individual Score is 46, four students may compete on a team, and there are 10 questions in the Team Round, so the maximum possible Team Score is 66.

Coordinators should refer to the Chapter & State General Instructions Booklet, which ships with their competition materials, for information should a tie occur. There is a comprehensive algorithm for breaking ties among individuals and/or teams. However, if the tie can't be broken with this algorithm (ex: two perfect scores), there is a Tiebreaker Round Booklet provided with your competition materials. The complete

instructions, as well as the actual problems to use and their answers, are in the instructions booklet. Though these questions are not usually necessary, it is recommended that you bring multiple copies of the problem sets to the competition unless you are sure you will have access to a photocopier on-site.

Running the Scoring Room

An Answer Key is provided with the competition materials. Enough photocopies of these Answer Keys should be made so that each scorer can have his/her own copy. Please number the copies you make so that you can ensure you collect them all back at the end of the scoring process.

Tally sheets will accompany the competition materials. If possible, the tally sheets should be filled out with the students' names before the competition. Each team will need its own Team tally sheet and each school's individuals will be grouped on one Individuals tally sheet. Therefore, a school with a team and at least one individual will have two tally sheets. The Team tally sheet should have the team members listed in alpha order by last name. The Individuals tally sheet should have the registered individuals listed in alphabetical order by last name. (A sample of each is shown here.)

2011 MATHCOUNTS® Competition Tally Sheet - TEAM

SCHOOL: West Middle School COACH: Pepinagras

Sprint Round		Counting (marks by last name)																							
# Correct	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
AH, Alex	24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Boone, Ben	13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Capps, Cindy	21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Day, Dee	27	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Target Round		Counting (marks by last name)																				Target Score (of 100)	Sprint Score (of 100)	INDIVIDUAL SCORE Target Score + Sprint Score	
# Correct	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
AH, Alex	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Boone, Ben	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Capps, Cindy	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Day, Dee	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Team Round		Counting (marks by last name)																				Team Score (of 100)			
# Correct	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

$(141 \div 4) = 35.25$
 (35.25) + (16) = 51.25
 Team Round Score Team Score TEAM SCORE

A copy of this form or equivalent computer-generated report should be distributed to the school coach.

This Team Tally Sheet shows the Individual Scores and Team Score for the students on the West Middle School team.

2011 MATHCOUNTS® Competition Tally Sheet - INDIVIDUALS

SCHOOL: West Middle School COACH: Pepinagras

Sprint Round		Counting (marks by last name)																							
# Correct	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Ua, Ursula	13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Vor, Victor	15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Way, Wanda	22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Xu, Xun	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ya, Yagis	11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Zin, Zita	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Target Round		Counting (marks by last name)																				Target Score (of 100)	Sprint Score (of 100)	INDIVIDUAL SCORE Target Score + Sprint Score	
# Correct	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Ua, Ursula	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Vor, Victor	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Way, Wanda	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Xu, Xun	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ya, Yagis	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Zin, Zita	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

A copy of this form or equivalent computer-generated report should be distributed to the school coach.

This Individuals Tally Sheet shows the Individual Scores for the students at West Middle School registered as individuals.

Ideally, each scorer will be responsible for scoring one school's competitions. Obviously, if there are not enough scorers, each scorer can grade more, but the time it takes to complete the scoring process will increase, and it's possible that the accuracy of the scoring will decrease. Scorers should be paired with one another to do each other's "double-check."

A description of acceptable forms of answers is available in the *MATHCOUNTS School Handbook*. This information also is provided on the back cover of the Sprint Round for the Chapter Competition. You should review this information with competitors prior to the start of the Sprint Round at the Chapter Competition.

The Head Scorer needs to pace the grading. Once the Sprint Rounds come in

from the students, they need to be distributed to the scorers. Hopefully there will be some organization to the way the papers are delivered to the scoring room. Once every scorer has the appropriate school's papers, they should first be sure they are not missing any papers and that the names on the competition papers match the names on the tally sheets.

The Sprint Rounds should be graded using the Answer Key. Answers must match exactly. If there is any question as to whether an answer should be accepted, the Head Scorer and/or Judge should be asked. If any modifications are made or any interesting situations come to light, the Head Scorer needs to be sure EVERY scorer is made aware of the situation so that the competitions are scored consistently. (For instance, if an alternative answer is accepted on one paper, every scorer must be made aware of the alternative answer so that it is accepted on each student's paper.)

Helpful Hint for Scoring

A scorer should score page 1 of all of his/her students' Sprint Rounds at the same time. When each student's page 1 is graded, go to page 2, etc. To score all of the page 1s first, open each booklet to page 1 and stagger them on top of each other so that you see everyone's answer column for page 1 at the same time.

Fold the answer key and place it next to the column of answers on the students' papers.

If the problem is correct, do not write anything next to the problem. If the answer is incorrect, place an "X" by it.

The first scorer should place her Xs to the left of the answer blank. The second scorer can then cover up those Xs with the Answer Key as he re-scores the competition. Not seeing the initial scorer's marks will improve the accuracy of the second scorer, who can put his Xs to the right of the answer blanks.

Once every scorer is done grading his/her Sprint Round, he/she will exchange competitions with his/her partner grader. Then the partner grader will once again go through and score the competition. If each scorer determines the same score for each Sprint Round, the scoring of the Sprint Round is complete. If there is a discrepancy, the two scorers can try to determine what the outcome should be and should consult the Head Scorer and/or Judge if it is not a clear decision.

Now that the Sprint Rounds have been scored, each grader should transfer the scores to the tally sheet(s) for his/her appropriate school. Once the tally sheets have been completed, the pairs should swap competitions and tally sheets and double-check that the scores were transferred properly.

Once the Sprint Rounds have been scored (twice) and the results have been transferred to the tally sheets (and double-checked), the top sheet of every tally sheet can be given to the Head Computer Scorer for entry into the scoring program. At this time the Head Scorer will collect all of the Sprint Rounds from the scorers

(ensuring that all of them have been collected). Then the Head Scorer can begin distribution of the Target Rounds to the scorers. The same procedure that was used for Sprint should be used for Target.

After the Target Rounds have been scored, the results put on the tally sheets, page 2 of the original tally sheets have been taken to the computer scoring room, and the Target Rounds have been collected, the Head Scorer should try to determine the top-scoring students. Start by asking the room of scorers if any scorer had a student with a score of 46? 45? 44? and so on. **(Remember that ALL students are to be considered – whether team members or registered individuals.)** Writing down the top students' names and scores as the scorers identify them, continue through this method until the top students that you need for the Countdown Round and/or awards distribution have been identified.

Now the Team Rounds can be distributed to the scorers. Remember that only the team captain's booklet is to be scored. (Putting a sticker or some sort of indication on the booklet ahead of time is helpful.) Follow the same scoring/tally sheet procedure for the Team Round.

After the Team Rounds have been scored, the results put on the tally sheets, page 3 of the original tally sheets have been taken to the computer scoring room, and the Team Rounds have been collected, the Head Scorer should try to determine the top-scoring teams. Start by asking the room of scorers if any scorer had a team with a score of 66? 65? 64? and so on. Writing down the top teams' school names and scores as the scorers identify them, continue through this method until the top teams that you need for the awards distribution and/or advancement have been identified.

Ideally, the tests of the winning students and winning teams (and the few students and teams just below them) can be re-graded for accuracy. The students' competitions could be re-graded while the Team Rounds are being scored. If the scoring program is being used, there is often time between the scorers finishing and the data entry being finished to do this re-grading.

The two lists that you have from your scorers (top students and top teams) can then be compared with the lists generated by the scoring program. If everything matches up, you should feel fairly comfortable that the results you have are accurate. If there are any inconsistencies, the students' papers should be re-examined and the cause of the inconsistency should be fixed before the Countdown Round occurs or any awards are distributed.

Though the tally sheets – not the computer printouts – should be considered the official results of the competition, obviously checking to ensure that both sets of results are the same is a meaningful double-check of the accuracy of your competition's results.

Running the Computer Scoring

The scoring program will be available for download from the coordinators' section of the website. Along with the scoring program, coordinators should download the accompanying User Information document, too. This document will contain many helpful hints for using the scoring software. Coordinators also are encouraged to watch the Scoring Program Videos available in the coordinators' section of the website. These videos provide tutorials to help coordinators enter information into the program and generate reports.

Team	First Name:	Last Name:	Grade:	Gender:	Delete
<input checked="" type="checkbox"/>	Alex	Austin	6	M	Delete
<input checked="" type="checkbox"/>	Beth	Bowers	7	F	Delete
<input checked="" type="checkbox"/>	Charlie	Cho	8	M	Delete
<input checked="" type="checkbox"/>	Denise	Dickerson	8	F	Delete
<input type="checkbox"/>	Eva	Evans	7	F	Delete
<input type="checkbox"/>	Fred	Flowers	6	M	Delete
<input type="checkbox"/>			U	U	Delete
<input type="checkbox"/>			U	U	Delete
<input type="checkbox"/>			U	U	Delete
<input type="checkbox"/>			U	U	Delete

Coaches
Head Coach (first last): Gary Garner
2nd Coach (first last):

Scoring program screen-shot

Before the day of the competition, the Head Computer Scorer should have entered the names of the students into the scoring software and run a practice competition with a copy of that database of entered students. (The Registration page of the scoring program is shown directly before this paragraph.) This will ensure that the scoring program is correctly working on the computer(s) that will be used at the competition.

On the day of the competition, it is very likely that some edits to the students/schools will need to be made. **Remember: If you are deleting a student that was previously entered into the scoring program, you must click on the blue "Delete" to the right of the student's name on the Registration screen rather than typing over the name.**

Once the tally sheets start to arrive from the scorers, the data entry volunteers can

enter the 1s and 0s for correct and incorrect answers on each problem, respectively. Once all of the scores have been entered for each round of competition, the Reports function of the scoring program can generate all of the reports you need.

If you are holding a large competition, it may make sense to keep two separate databases and merge the scoring information together. The complete instructions for this process are in the coordinators' section of mathcounts.org.

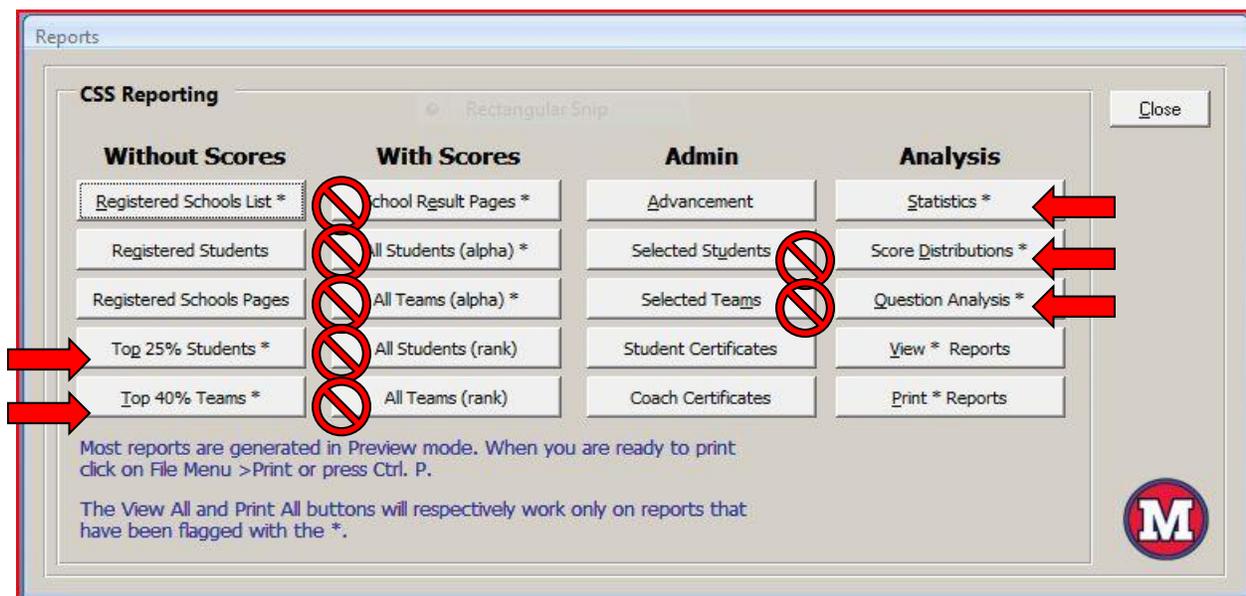
Results Generation and Distribution

The results are necessary for the awards ceremony. If using the scoring program, you can easily generate reports with the top x students and top y teams by selecting the Selected Students and Selected Teams reports, respectively. (Do not select any additional criteria other than the number of students to report and the order in which to report them (rank order)). This can be given to the emcee who will be announcing the trophy and/or certificate recipients. If you will be awarding a Most-Improved Award of any kind, make sure you have a copy of last years' scores to allow the Head Scorer to determine which school is the most-improved.

Ideally, results will be distributed to the coaches after the awards ceremony/before they leave the competition. If there is not the ability to make the copies of the results you need, you can post the main reports for the public to see (the first two reports listed below) and send the coaches copies of the results after the competition.

- A report of the top 25 percent of the students. This report should have ranks but cannot have scores. This report can be generated by the scoring program (Top 25% Students) and may be released to the general public and press.
- A report of the top 40 percent of teams. This report should have ranks but cannot have scores. This report can be generated by the scoring program (Top 40% Students) and may be released to the general public and press.
- In addition to the two reports above, each coach also should receive a report containing their team's score, their individual team members' scores and their individual competitors' scores. The final page of the tally sheet can be distributed to coaches for this purpose, however, this does not include the final ranks of each of the students individually nor the rank of the school's team. That information can be sent to the coaches after the competition. Another option is to provide the teacher with his/her appropriate School Results Page generated by the scoring program (School Result Pages) in lieu of the tally sheet (if the individual question information was entered by the scoring program volunteers). This will be much cleaner, and it will contain the ranking information many coaches wish to have.
- A report containing a listing of all ranks and corresponding combined Sprint and Target scores *without team and individual names* also may be distributed to coaches. There is not a report generated by the scoring program that presents this information in a list format. However, the Score Distributions report provides this information in a histogram.

The following is a screen shot from the scoring program's Reports section.



The following reports are for coordinators' use:

- Registered Schools List
- Registered Students
- Registered Schools Pages
- Advancement
- Student Certificates
- Coach Certificates

The Registered Schools Pages are great to use at Registration for each coach to verify the accuracy of the information for his/her school (correct spelling, team member vs. individual status of competitors, etc.). The Advancement report can be distributed to the public as long as it accurately reflects your final standings (including any ties that were broken or switches in rank due to an official Countdown Round) and is set to show only the students/teams advancing to the next level of competition. The certificate reports are designed to be used with the free certificates coordinators can order from Sports Awards.

 The following reports **MAY** be released to the public/distributed to coaches:

- Top 25% Students
- Top 40% Teams
- School Result Pages (**only a coach may receive the School Result Page for his/her school*)
- Statistics
- Score Distributions
- Question Analysis

 The following reports **MAY NOT** be released:

- School Result Pages (*exception: a coach may receive the School Result Page of his/her own school*)
- All Students (alpha)
- All Students (rank)
- All Teams (alpha)
- All Teams (rank)
- Selected Students
- Selected Team

Final Clean-Up

Make sure that no tests or answer keys are left in the scoring room. The completed competitions should be held by the competition coordinator for 10 days following the competition, after which they should be destroyed. **Competitors' test booklets and answers are confidential and may not be viewed or distributed to anyone outside the MATHCOUNTS organization.**



PLAN AHEAD!

SCORING TASK TIMELINE

December

- Arrange for a computer to tally scores and a printer for the results, if you believe you will be using the scoring program on-site.
- Download the scoring program to the computer(s) that will be used on-site and test that it works properly.
- Recruit a Head Scorer, Judge and scorers. If you will be using the scoring program, recruit a Head Computer Scorer and volunteer(s) to help with data-entry.
- Determine where the scoring will take place and be sure that there will be adequate chairs and tables.

January

- Check exam order for completeness. Prepare exams for distribution.
- Plan scoring room procedures. Make a list of necessary supplies. Make arrangements for computerized scoring.
- Make copies of the Answer Key for the scorers. Numbering these Answer Keys will help the Head Scorer to determine whether s/he has successfully collected all of the Answer Keys before shutting down the Scoring Room.
- Make the number of copies of each round of the competition and the Answer Key as will be needed for the coaches' room/lounge, if you are having one. The competitions and Answer Keys should be numbered to ensure every copy is collected from the coaches before they leave the coaches' room/lounge.
- Plan where and how you will post/distribute results.

One/Two weeks before

- Fill out the Tally Sheet(s) for each school. A school sending both a team and at least one individual will have two tally sheets. Note that there are two different tally sheets – one for a team and one for individuals. Names on each should be listed in alphabetical order by last name.

SCORING TASK TIMELINE CONTINUED

- Pre-assign scorers to schools. Pre-assign scoring partners, too. Identify a way to let scorers know which school(s) they will be scoring. If you have particularly strong/experienced scorers, you may want to assign them to the schools that have traditionally been in the running for advancement/awards. Ideally an experienced scorer will be paired up with an inexperienced scorer.
- Input names into the scoring program.

Day of Competition

- Ask all of the scorers to arrive at least 30 minutes prior to the actual grading so that you can explain grading procedures.
- Check at registration desk after all teams have registered for any changes in team membership or any substitutions.
- Tally all scores by hand **and** electronically to double-check accuracy. (Once the tests are corrected and the tally sheets are filled out, the graders in the scoring room should work together to determine the list of winners. This list can then be checked against the reports generated by the scoring program.)
- After all grading is finished, provide a list of winners to the emcee for announcement at the awards ceremony. Print out overall and team results with the goal of giving each coach his/her school's results prior to them leaving that day.
- Collect all answered tests and hold them for 10 days following the competition.
- Confirm that no papers are left in the scoring room or written competition room.

One week after

- Send a thank you note to Head Scorer, Judge, Head Computer Scorer and other volunteers.
- Coaches should be directed to download single copies of competition materials and answers directly from the MATHCOUNTS website at <http://mathcounts.org>. The MATHCOUNTS national office will post the questions/answers on the website after all competitions have been completed. This typically takes approximately one week after the last Chapter Competition held in February and one week after the last State Competition in March.

10 Days After Competition

- Destroy all test papers.



BE PREPARED!

Listed below are some supplies you might find helpful to have in the Scoring Room:

- MATHCOUNTS School Handbook*
- Coordinator Manual*
- Chapter & State General Instructions
- Filing (banker) boxes with school dividers (competition rounds that have been scored and tallied can be filed here in case they need to be found and referenced later)
- Seating chart/school assignments for volunteers
- Tent cards for scorers' tables (or some other form of showing people where to sit and which schools they will be scoring)
- Tiebreaker Round Booklet
- Copies of each Tiebreaker Round question set (4 copies of each)
- Tally sheets with names filled in (1 per school team and 1 per set of school individuals)
- Tally sheets (10 blank Team Tally Sheets and 10 blank Individuals Tally Sheets)
- Copies of a completed Team Tally Sheet and a completed Individuals Tally Sheet to show scorers what their tally sheets will look like and how the Individual Scores and Team Scores will be computed from the Sprint, Target and Team Round scores
- Answer Keys (1 copy for each grader and 5 extra) ***DO NOT** make copies of the Countdown Round answers. These are not to be distributed.
- Competition Rounds (2 copies of the blank competitions – just for reference)
- Calculators (Calculators are often helpful to calculate Team Total Scores)
- Green/Red pens (half of your scorers should use one color and the other half should use another color when scoring competitions)
- Extra pens

If using the computer scoring program:

- Copy of User Information (available online with scoring program)
- Flash drive (if using scoring program and needing to merge data from two computers)
- Copies of scoring program with names entered (having two copies of the databases with names is suggested)
- Paper and extra toner or ink cartridges for printer(s)

If using an overhead projector to display answers:

- Transparencies of the Answer Key pages
- Blank overhead transparencies
- Overhead projector pens
- Extra bulb for projector