

My thoughts...

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1 Packing teams to force distribution

We currently have a rule that prohibits a school from having more than one incomplete team. Before this rule, some coaches attempted to inflate individual scores by creating multiple teams of three students, so that every student could be in whatever rounds they wanted. This harmed students at schools that were competing for team score, because their coaches needed to distribute students evenly into rounds. This also created space issues during team rounds.

The primary rationale behind the rule was that by forcing the creation of five-student teams, schools would be forced to distribute students more or less equally into all rounds. This would even out the number of students in each individual round (making meets run smoother), and remove the ability to inflate individual scores (making the individual competition fairer).

Problems: (1) Social issues can come into play. If a coach has six students “left over,” splitting them into one team of five and one team of one might not be good for the one student. (2) This rule has caused problems when it interacts with the team composition rules. If a coach shows up with five upperclassmen only, the school is currently forced to take a zero (one unofficial team would score zero; two incomplete teams would score zero for both). Burncoat HS has taken many zeros in the past two years.

With the split to two divisions, the space issue is mitigated somewhat.

I would advocate that we remove the prohibition against multiple incomplete teams, BUT require the students on incomplete teams to be distributed as evenly as possible. (For a given team, the number of students in one round and the number of students in another round should not differ by more than one. One student: 11100; two students: 21111; three students: 22221; four students: 33222; five students: 33333.)

If space during the team round is an issue, we could say that an incomplete team cannot compete in the team round unless the school has fewer than two teams in the team round. Or perhaps restrict a school to $\lceil \frac{\text{number of students}}{5} \rceil$ teams in the team round. In this way the team round is not affected in any way.

This gives coaches freedom to create teams that best suit their students, without giving an unfair advantage to students at certain schools. This will also fix the problem whereby some schools are forced to score zero at a meet.

2 Individual penalties

If a team is not doing well, a coach can choose to inflate individual scores by violating team composition rules. For example, more than three students can be assigned to a round, or more than one incomplete team can be formed. Although both of these practices are against the rules, the only penalty currently assessed is a team penalty. A team penalty is completely ineffective if the coach does not care about the team score.

This is not theoretical: this year, these rules were violated by Burncoat, Douglas, Mass Academy, St. John’s, and Shrewsbury.

If we keep the “only one incomplete team” rule, I would advocate that, in the case that a school violates this rule, all students on all incomplete teams should be assessed a one-point penalty. (If the incomplete team rule is removed, this is irrelevant.)

If a coach assigns too many students to a round, all of those students should be assessed a one-point penalty. If a student inadvertently competes in the wrong round, that student should be assessed a one-point penalty. (If a student competes in four rounds, the current penalty — loss of the highest round score — is sufficient. If they compete in the wrong three rounds, this gives a penalty where currently none exists.)

3 Disqualification from a round

If two students from the same school are discovered to be sitting at the same table, I think their papers should automatically be disqualified. Although this may seem harsh, I think kids will learn pretty quickly to check who they are sitting with (and this will dissuade those students who intentionally sit with someone they know).

4 Awards

4.1 Award not in bylaws

We voted in an award to the top freshman scorer, but need to put that into the bylaws.

4.2 Potential new awards

- I think we should give a plaque, not a certificate, for “most improved student.” Eligible students would be any student who attended all four varsity meets in the previous year. The winner would have the greatest change in raw score. No student would be eligible more than once. (We could also give one award to the most improved senior and one to the most improved junior.) This year our most improved senior is Stephen Rose of Mass Academy and our most improved junior is Steven Shepherdson of Quaboag.

We could also restrict this award to a student who is not in the top 40, in which case the most improved senior this year would have been Rebecca Belisle of St. Peter-Marian, while the most improved junior would have been Sabrina Boyd of Tantasqua.

- I think we should give a plaque for “most improved team,” determined by the difference in raw score from one year to the next, with the restriction that a team cannot easily win the plaque more than once in any five-year span. To win the plaque a second time, the new cumulative raw score must be compared to the highest cumulative raw score in the past five years. Also, the team should have attended all four meets the previous year, but perhaps we could extrapolate to four meets if the team attended only three meets in the previous year.

This year Worcester Academy increased their raw score by 87 points. If we extrapolate for schools that attended only three meets, the winner would be Nashoba ($192 \text{ points} - \frac{4}{3} * 74 \text{ points} = 93 \text{ points}$).

- Although this would never require another plaque, I think we should award the title of “Most Valuable Player” to the student with the highest number of Quality Points.

That title would be placed on the student’s plaque. (This year Jiageng Luan of Worcester Academy took first place in the league, but Rahul Banerjee of St. John’s would have been the Most Valuable Player.)

4.3 Number of team awards

Currently we give three team awards regardless of the number of schools in a class. A class with fifteen schools currently gets three team awards, while a class with four schools currently gets three team awards. I would advocate that we give team awards to *at most* half of the schools in a class, and *at least* one-third of the schools in a class, where schools are counted only if they attend all four meets. (Or is three meets enough?)

When this rule gives multiple possibilities for the number of awards, the number should be at the discretion of the executive board and the awards chairman. Personally I think the board should give consideration to factors such as point differential (if there is a clean breaking point, don’t give awards after that point). If a school has not won a team award in many years, that also might be a consideration.

Teams	Awards	Teams	Awards
1	1	9	3–4
2	1	10	4–5
3	1	11	4–5
4	2	12	4–6
5	2	13	5–6
6	2–3	14	5–7
7	3	15	5–7
8	3–4	16	6–8

If this rule had been in effect for 2005–06, the awards would likely have been as follows:

Class	Schools	Awards
A	10	Worc Academy, Westborough, Shrewsbury, St. John’s, Algonquin
B	8	Nashoba, Tantasqua, Wachusett, Bancroft
C	7	Quaboag, North, South
D	7	Shepherd Hill, Leicester, Douglas

Rationale:

In Class A, the top five raw scores were 352, 317, 310, 288, 300. The gaps are small enough ($12/288 = 4\%$) that all five teams would win awards.

In Class B, the top four raw scores were 192, 163, 161, 156. Again, the gaps are small enough that all four teams would win awards.

The seven teams in Class C and in Class D give no choice as to the number of awards.

If this rule had been in effect for 2004–05, the awards would likely have been as follows:

Class	Schools	Awards
A	11	Westborough, Shrewsbury, St. John’s, Algonquin, Worc Academy
B	6	Bartlett, Athol, Tahanto
C	7	Hudson Catholic, North, Auburn
D	8	South, Southbridge, Nashoba

Rationale:

In Class A, the top five raw scores were 327, 280, 286, 273, 265. The gaps are small enough ($8/265 = 3\%$) that all five teams would win awards.

In Class B, the top three raw scores were 110, 101, 93. Again, the gaps are small enough.

In Class C, three teams must win awards.

In Class D, the top four raw scores were 62, 62, 74, and 48. Here the gap (14 points) is quite large ($14/48 = 29\%$), so the fourth place team would not receive an award.

Alright, it looks like the main motivation here is to get more awards to Class A. And to some extent yes, I think this is odd:

	Avg Raw Score 1999-2006	Team Awards 1999-2006
Hudson	259.0	1
Worc Academy	255.4	1
Mass Academy	213.4	0
North	89.4	4
South	88.7	5
Hudson Cath.	86.0	4
Southbridge	59.5	4
Douglas	57.8	4

But my primary concern is that larger classes should have more awards, regardless of whether Class A or Class D is the largest class. It just happens that Class A is largest.

5 Easier questions for Class C and Class D

Median cumulative raw score for schools in classes A or B: 164.

Median cumulative raw score for schools in classes C or D: 52.

(Raw scores come from the top team, so other teams from the same school obviously scored lower.)

427 students competed in classes A and B. 95 of the top 100 students are from those classes. 5.15% of students in classes A and B scored zero. 29% scored 4 or below.

257 students competed in classes C and D. 5 of the top 100 students are from those classes. 21% of participating students in classes C and D scored zero. 58% scored 4 or below.

Perhaps we should consider having different questions for Classes A and B, versus Classes C and D.

Possibilities:

- Replace three-point question with another one-point question.
- Have three one-point questions, perhaps with one overlapping question between AB/CD.
- Use MCAS-type questions.

There are many advantages to splitting the league in this manner, primarily that weaker students will find more encouragement with their scores. With the MCAS being such a large issue these days, more principals might be encouraged to send their kids to our meets if it were billed in some way as MCAS prep for the best students. (“Get your MCAS scores up!”) Some of those schools would eventually migrate to Class A or B.

Questions/disadvantages:

- What about weak students who attend a Class A or Class B school? Can they be accommodated?
- Scores between divisions will be incompatible, so two rankings will need to be maintained. (Personally I don’t mind doing this – and it will also give success to Class C and Class D schools because all top-ranked students in those divisions will obviously be from those schools.)
- The QSC will probably want more money, unless someone is willing to create the questions for free.
- We might have to produce more plaques, which would cost more money.

Therese and I think that this is something worth talking about, but that we should form a committee to research this for 2007–08. We think it might be too quick to do this next year in 2006–07. (On the other hand, maybe it isn’t.)

6 “Junior Varsity”

Someone asked me (I don’t remember who!) about the possibility of students older than grade 9 competing unofficially at freshman meets. I suppose the thinking is that a student trying math team for the first time might be overwhelmed by the harder questions.

If we had different varsity questions for Classes C and D, perhaps that would be a solution. In fact, maybe we could rename the classes as “Varsity A,” “Varsity B,” “Junior Varsity A,” and “Junior Varsity B.” Then a school could send kids to varsity *and* JV, with the stipulation that a student cannot do both. (If we scheduled the meets for the same day, that would be a moot point.)

7 Stipends

Currently we pay Lucas Markgren a stipend to deliver varsity questions to the Worcester Public Schools’ main office, then deliver the photocopies to the sites. This is the duty of the Varsity QSC, but the Varsity QSC does not want the responsibility. We did not reduce his stipend — we simply began double-paying for that job. Should our stated policy be that if an officer with a stipend does not fulfill all of their stated duties, that a portion of *their* stipend can be used to get those duties completed? We might have to grandfather the current situation.

8 States and New Englands

I think we should amend the bylaws to discuss the actual selection procedure for the MAML state competition, which basically says that our schools should be divided into small, medium, and large schools. We are allowed to invite $\lfloor \frac{n}{8} \rfloor + 1$ schools of each size. If the first (or subsequent) uninvited teams are close in score to the last invited team, they can also be invited; but if there is a large gap they should not.

This year, under the correct system, we should have invited two large schools, Algonquin (225 points through three meets) and Shrewsbury (223). Third-place Doherty, with 128 points, was too distant to be invited.

We should have invited two medium schools, Westborough (227) and St. John's (210). Hudson (205) would have been invited. Fourth-place Nashoba (138) was too distant.

We should have invited two small schools, Worcester Academy (258) and Bromfield (170). Bancroft (119) and Quaboag (115) were too distant.

This year we invited all eleven schools mentioned above. When Steve Gregory invited teams, he simply invited the top nine schools, by raw score, regardless of size. Because the small school division has easier competition than the medium or large school divisions, Therese and I asked Steve to invite Bancroft and Quaboag too (and Bancroft ultimately beat Bromfield at states).

At the next MAML meeting I am planning to ask for the qualification procedure to be changed somewhat. Under the current rules, if a division has eight teams, two teams are invited, while if it has fifteen teams, two teams are invited. I'd like to see the procedure changed to $\lfloor \frac{n}{4} \rfloor$ (which would give WOCOMAL 2, 3, 4 this year, corresponding to 8, 11, 13 schools).

Regardless, I think these procedures should be in the bylaws so all WOCOMAL member schools understand who, exactly, will be invited to states.

9 Team Mobility

Currently any team that wins a classification must move up a classification. Because we give awards in Divisions B, C, and D to "spread the wealth," this means that a team could repeatedly win a second-place award in Class D without ever moving up. Perhaps any team that places within the top three should move up, while any team that places in the bottom three should move down. Many more schools would win an award every other year.

10 Dues

Perhaps some things could be clarified regarding the payment of dues. Specifically, schools are expected to pay based on the number of teams they bring to meets, but that can vary from meet to meet. Personally I pay by averaging the number of students per meet and rounding up to the nearest whole team.

Should it be a responsibility of the Vice President to give the Treasurer a list of how much each school should be paying in dues? (Obviously the VP has the information about number of students per meet.)

Should there be a late-payment penalty or an early-payment discount for dues?