

**Title of Session:** Math Transformers - Ratio and Proportion

**Moderator:** Patricia Chen

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Room: Math Transformers Group

**BJB2:** Pat, would you like to start with introductions?

**PatriciaCh:** yes ...

**BJB2:** . o O ( not sure if you've met Peter or not )

**PatriciaCh:** I teach middle school math in Florida

**PatriciaCh:** what do you teach Peter

**PeterK:** Not a teacher. I'm an EdTech grad student @SDSU.

**PatriciaCh:** ok ... what subject matter

**PeterK:** I'm in Adv. Teaching w/Technology with Dr. Bernie Dodge.

**PatriciaCh:** That is great ... how can we help you?

**PeterK:** My interest is in using tech to increase engagement and understanding of math.

**PeterK:** I tutor a bit. Mostly helping unmotivated students slog thru worksheets.

**PeterK:** I have a feeling that isn't creating learning that sticks.

**PatriciaCh:** worksheets are pretty boring

**PatriciaCh:** what grade level are you tutoring?

**PeterK:** It's high school Algebra 1.

**PatriciaCh:** there are websites ... the students can utilize to improve their knowledge

**PatriciaCh:** <http://www.purplemath.com/>

**PatriciaCh:** I recommend this site to my students

**BJB2** likes the "how to suck up to your teacher" instructions

**PatriciaCh:** I change the title for my middle schoolers ..but for high school ..it is fine

**PatriciaCh:** and there are others ... more gaming format ... that will engage the students

**BJB2:** Pat, the topic posted for this discussion was Ratio and Proportion...is that at the algebra level?

**PatriciaCh:** we use ratio and proportion to help in solving word problems ...so algebra kids will write the equations

**PatriciaCh:** whereas ...the younger kids use logic and reasoning to solve

**BJB2:** oh, good....once you get old enough you don't need logic and reasoning any more!

**PatriciaCh:** so this topic spans all grade level

**BJB2** . o O ( I'm golden ;- ) )

**PatriciaCh:** yes the logic and reasoning ..is more guessing ....

**BJB2** chuckles.

**PatriciaCh:** and once you check your answer ... if it is reasonable ..most likely you have the correct answer

**PatriciaCh:** equations is more concrete

**BJB2:** I think that too many kids miss that "if it is reasonable" step

**PatriciaCh:** and actually it is easier to solve word problem once you get use to writing equations

**PeterK:** logic & reasoning are good ways to check an equation answer

**PatriciaCh:** and too many kids and adults ..don't like word problems ...it scares them

**PatriciaCh:** Peter ...yes you are right and the kids have to learn that it is okay to revert to that method ..

**MichelleW** joined the room.

**BJB2:** word problems are like paintings or illustrations of the problem

**PatriciaCh:** welcome to Math Transformers

**BJB2** waves hi to Michelle

**PatriciaCh:** that is a good way to explain it ...

**BJB2:** . o O ( maybe you have to be a visual learner to see word problems as illustrations )

**MichelleW:** Hi! I'm taking a class in integrating technology into the curriculum. Thanks for welcoming me.

**PatriciaCh:** I always tell the kids to draw a picture ....

**PatriciaCh:** the picture tells them what they need to do

**BJB2:** great idea, Pat!

**PeterK:** That's excellent advice.

**PatriciaCh:** that is where ratio and proportion comes into play ... we use it all the time as adults

**PeterK:** Promp a visual learner to 'translate' a word problem into a visual one.

**PatriciaCh:** cooking, laundry, time management ... but we do not see it as a math problem but it is

**PatriciaCh:** most people are visual ... I am and I also use color when I teach

**MichelleW:** That's clever..I never thought of it but time management is a proportion issue.

**PatriciaCh:** using colors help to make the connections better

**BJB2:** LD kids have a major problem with time management

**PatriciaCh:** we are surrounded by math

**PatriciaCh:** yes ... and we have to help them so they can be successful as adults

**PatriciaCh:** I truly believe all of us have some form of attention problem ... we need to overcome it ... I can be distracted quite easily but I have learn to be more focus

**MichelleW:** I'm the School Media specialist at my school. All the content areas use me except for math. Are there any good web sites that could help our math teachers with ratios and proportions?

**PatriciaCh:** what did you have in mind ...

**PatriciaCh:** Brain Pop has good videos

**MichelleW:** They all seem to be driven by the book & they're always stressed out by ISAT [Illinois Standards Achievement Test]. Whenever I talk to them about programs featuring math applications they say, "We don't have time."

**PatriciaCh:** well .. I understand and commiserate with them ... it is the same here in florida

**PatriciaCh:** I try to take the time out to do something different every month

**PatriciaCh:** <http://www.brainpop.com/math/>

**MichelleW:** When I was a classroom teacher, I used M&M's to teach ratio. Kids would color in a pie graph and learn. The math teachers see this as, "Fun activities they don't have time for." And my best friend is the 8th grade algebra teacher.

**PatriciaCh:** they have good videos ... explaining concepts ...

**MichelleW:** Do you think math teachers could use spreadsheets such as, Excel, to teach students ratios, percentages and other math concepts?

**JeffC** is back.

**PatriciaCh:** a way to address it ... I have assigned a fun project as an alternative assessment ... or even extra credit

**PatriciaCh:** the only problem is using Excel ... do the students have access at home ...

**JeffC:** Michelle... do you know about the online M&M Project? Not sure if they're still doing it, but they did it a few years back (looks for the URL).

**PeterK:** Michelle, spreadsheets have charting that could be nice visuals to connect to ratio & proportion

**JeffC:** They can use Google Spreadsheet (not as robust, but many other advantages).

**PatriciaCh:** I taught graphing and the concepts of central tendencies based on the NFL season

**BJB2** . o O ( the next BirdSleuth discussion topic will be graphing )

**PatriciaCh:** if the students do not have access ... then they will have to use the media center at school

**MichelleW:** Can math teachers and tech teachers collaborate? Tech teachers can show

how to use a spreadsheet program and math teachers can show students how to input data and find math solutions.

**PatriciaCh:** why not?

**MichelleW:** I didn't know Google had a spreadsheet application. Thanks for the info.

**PatriciaCh:** The NFL project took a whole season .. and some teachers do not want to commit that length of time

**PatriciaCh:** but the students can learn graphing ... height ... age ...

**PatriciaCh:** what colors are prefer ... which lends to percentages

**MichelleW:** But we have students in our classroom who would be engaged the full football season. Is it alright for 5 minutes to be spent on this every few days?

**JeffC:** if you have a gmail account, just click on "Documents" then spreadsheet... you can collaborate with it, upload/download to Excel, etc.

**MichelleW:** Thanks, Jeff. That sounds great.

**JeffC:** why not Michelle? spend even more time since the activity will be relevant not only to the curricula, but to the students (even more important!).

**PatriciaCh:** I did ... student picked a name of a team ... and they follow the team ... collecting the stats ... I made sure they did it ..on Tues ...

**MichelleW:** This would be a great way to include students who may not see themselves as 'math' students. Making the connection b/w their interests and math.

**PatriciaCh:** then we discussed how [to find] information they need to include in their report .. and I required graphs ... and other statistical information

**JeffC:** <http://www.super-science-fair-projects.com/high-school-math-science-project.html> (math and sports ideas, etc.)

**PatriciaCh:** also it showed the kids that is how all major sports track players

**MichelleW:** And aren't a hitter's averages expressed as a ratio? Baseball stats could be used to, right?

**PatriciaCh:** what are their stats?

**PatriciaCh:** yes you have that right ...rbi

**PatriciaCh:** pitchers ..era

**PatriciaCh:** also it surprises the kids ...that I do know something about sports!

**JeffC:** or: <http://sn.im/mathsports1> (same link using snurl.com)

**MichelleW:** I was thinking I always hear boys in the hallway talking about the baseball players' statistics.

**PatriciaCh:** also, someone did publish a series of workbook on this

**PatriciaCh:** it is an "aha" for the kids

**JeffC:** another good one for integrating math with a variety of subjects (including sports):  
[http://www.mathgoodies.com/articles/connect\\_math.html](http://www.mathgoodies.com/articles/connect_math.html) or  
<http://snurl.com/mathgoodies>

**PatriciaCh:** for kids in construction .... or art ..proportion and ratio is a must

**JeffC** heads out the door again.

**PatriciaCh:** you need one teacher that is willing to collaborate ... it will start the ball rolling

**MichelleW:** Why don't more teachers work together to integrate their curriculums since they're relevant. Is it a question of time? Or do some teachers feel more comfortable in their own setting? How do you motivate math teachers to collaborate and integrate more with their colleagues in other areas?

**PatriciaCh:** <http://www.teachersfirst.com/getsource.cfm?id=8965>

**PatriciaCh:** A lot of it ..is comfort zone ... one of my dearest colleagues ... will not do any of the "fun" stuff... he is all textbook, etc

**PatriciaCh:** Michelle ... it is a matter of comfort zone ....and you cannot change them

**BJB2:** the url will be in your transcript, Michelle

**MichelleW:** Can administrators push them in the direction of more collaboration?

**PatriciaCh:** I wouldn't suggest that ... you can build resentment ...

**MichelleW:** Thanks for letting me know where I can find the url. I'm getting used to this chat mode.

**PatriciaCh:** it is like using literature in math ... some of my colleagues were adamant

about it ...

**PatriciaCh:** a big problem is time .... when you have the state test looming over you ... teachers do hate to give up precious time ...

**MichelleW:** I wasn't thinking I'd go to administration. I just was wondering how you make it happen. I've been in teaching for 20 years, and I've done units with teams of teachers that have been very successful with students.

**PatriciaCh:** we have a legislation that some are trying to push through ... if your students do not show adequate achievement .. you can be fired ...

**PeterK:** My uneducated guess is that building on success is your best bet for increasing collaboration

**MichelleW:** Sometimes I wonder though if students would retain more in math if it was embedded in meaningful ways. I see a lot of math exercising but it seems some students are still out of shape:)

**PatriciaCh:** yes it should be ....even among the same grade levels

**PeterK:** Start small and use successful collaborators to convince their fellow teachers to try it

**PatriciaCh:** that is the trick

**PeterK:** Right, Michelle

**MichelleW:** I'll work on that. See if I can get some math teachers on board.

**PatriciaCh:** if they can see ... that it doesn't take away from student learning ... they will try it

**PeterK:** They learn how to do a worksheet but can't apply it to a real world situation

**MichelleW:** Exactly, Peter. That's what worries me.

**PeterK:** In my class we are designing Problem Based Learning. This is a great area for collaboration.

**PatriciaCh:** but if they can revamp that worksheet to include hands-on activity ... then it will enhance the learning process ...but it cannot be the fuzzy wuzzy stuff

**BJB2** smiles

**PatriciaCh:** some of the math manipulatives are really useless but admin loves it

**PeterK:** Patricia, which ones specifically are useless?

**PatriciaCh:** I can give you an example ... teaching kids coordinates and the Cartesian graph ....use graph paper .. and play Battleship

**MichelleW:** I agree. There's a program, I think it's called 'Math Futures' which has some great connections b/w math and how it's applied. No one's using it. What do you think of..I think the site is NVLM..they have manipulatives on-line.

**MichelleW:** Gotta take my son to spring football practice. Thanks everyone!

**PatriciaCh:** what is the ease of the teachers to reserve the media center

**BJB2:** <http://nlvm.usu.edu/>

**BJB2:** thanks for joining the discussion, Michelle

**PatriciaCh:** thank you ..good luck

**BJB2** looks at the clock on the wall

**BJB2:** The next Math Transformers discussion, weather permitting, will be May 12

**PeterK:** Sounds good,

**PeterK:** see you then!

**PatriciaCh:** <http://www.shodor.org/interactivate/activities/>

**PatriciaCh:** Peter ..check this out

**PeterK:** Okay, will do! Thank you.

**PatriciaCh:** Do you have any other questions ?

**BJB2:** this was an interesting discussion, Pat...it's nice to see that educators are trying, even if they do face apathy and resistance from other teachers.

**PatriciaCh:** jot them down and ask ..next time

**BJB2** . o O ( or join the group and post to the discussion board, Peter! )

**PatriciaCh:** it is hard ... my dearest pal will not succumb to my plea

**PatriciaCh:** that is a good idea .



**BJB2:** I see a lot of that, Pat...at least you can come to TI and be with other educators who think as you do

**PatriciaCh:** I try ... I do understand their plight .. I hate to give up valuable time too ...

**BJB2** hugs...take care and stay away from tornadoes

**PatriciaCh:** goodnight everyone

**PatriciaCh:** I will

**PeterK:** Rather depressing to think there are still lots of resistant teachers there