



Math Weekly Tidbits

Maryland Common Core State Curriculum Framework
Maryland School for the Deaf

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Dear Teachers,

Happy Friday!

Can you believe that there are only 13 days left of school?!? Where has the time gone? With only 13 days left we hope you are using them to wrap up any lessons or projects and also to start incorporating the Common Core Standards for your grade that you have not yet taught. This is a great time to cover standards that students will need in order to be successful in the next grade. If you need any help or guidance with this, don't hesitate to contact us for ideas and support!

In this newsletter you will find a chart that explains the levels of cognitive demand. This chart can help you understand better the different levels your students go through while learning. The chart gives you the competence level of the student, the skills they should demonstrate within that competence level, and question cues for you to use as a teacher.

You will also find ideas for using number lines in various lessons. These ideas show that number lines are not just for younger students, but for all levels and grades.

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Ideas for this newsletter are always welcome!

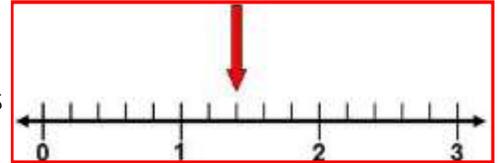
Levels of Cognitive Demand

Competence	Skills Demonstrated	Question Cues
Knowledge	<ul style="list-style-type: none"> • Observation and recall of information • Knowledge of dates, events, places • Master of subject matter 	<ul style="list-style-type: none"> • List, define, tell, describe, identify, show, label, collect, examine, tabulate, quote, name, who, when where, etc.
Comprehension	<ul style="list-style-type: none"> • Understanding information • Grasp meaning • Translate knowledge into new context • Interpret facts, compare, contrast • Order, group, infer causes • Predict consequences 	<ul style="list-style-type: none"> • Summarize, describe, interpret, contrast, predict, associate, distinguish, estimate, differentiate, discuss, extend
Application	<ul style="list-style-type: none"> • Use information • Use methods, concepts, theories in new situations • Solve problems using required skills or knowledge 	<ul style="list-style-type: none"> • Apply, demonstrate, calculate, complete, illustrate, show, solve, examine, modify, relate, change, classify, experiment, discover
Analysis	<ul style="list-style-type: none"> • Seeing patterns • Organization of parts • Recognition of hidden meanings • Identification of components 	<ul style="list-style-type: none"> • Analyze, separate, order, explain, connect, classify, arrange, divide, compare, select, explain, infer
Synthesis	<ul style="list-style-type: none"> • Use old ideas to create new ones • Generalize from given facts • Relate knowledge from several areas • Predict, draw conclusions 	<ul style="list-style-type: none"> • Combine, integrate, modify, rearrange, substitute, plan, create, design, invent, what if?, compose, formulate, prepare, generalize, rewrite
Evaluation	<ul style="list-style-type: none"> • Compare and discriminate between ideas • Assess value of theories, presentations • Make choices based on reasoned argument • Verify value of evidence • Recognize subjectivity 	<ul style="list-style-type: none"> • Assess, decide, rank, grade, test, measure, recommend, convince, select judge, explain, discriminate, support, conclude, compare, summarize

Number Lines Are Not Just For Pre-K and K

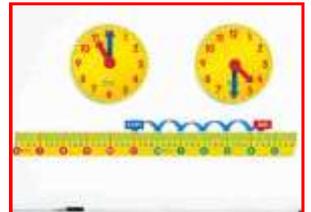
Fractions

Fractions is often taught by the circular method (breaking apart a pizza pie). This helps build the part-whole concept, but fractions are so much more than that. Fractions is one of the most difficult units to teach, and using only the circular method will not lead to strong conceptual understanding. Research has strongly indicated that using number lines allow students to understand “where” fractions lie between numbers, and even help build further number sense.



Time

Telling the time analog-wise, as we all know, can be a confusing experience for students, and it often takes them more than a year to truly catch onto the concept and then on top of that, they have to figure out elapsed time! If you use a strip with hour intervals, and then enclose it in a circle, students can see physically how the 24-hour day/night is always on a “loop”. Color the night hours a different color from the day hours.



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Subtraction

Yes, it is possible to subtract without borrowing!! Why do we continue to teach the traditional method of borrowing and regrouping? Because that's the way we all were taught! But did you know that students are less likely to make mistakes and will pick up on the subtraction concept quicker if you use a number line? Students know how to construct number lines, and once they can count by 10s, 5s, and 1s, they can use a number line to figure out how many “jumps of 10”, it would take from 17 to 92. Instead of counting back from 92 (which is what many teachers do), students can start at 17 and count forward to see how many 10's, 5's, 2's and/or 1's it takes to arrive at 92. Over time, the jumping graphics can be removed and students can start “hopping” in their heads. Students are more adept at adding, so using the addition method to figure out subtrahends can be very successful!

