Instruction matters!

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Oral Recitation

A newsletter for middle school math teachers addressing best practices

Do you have students that can't remember the formula, procedure, or definition you taught the day before and asked them to know for future reference?

In previous newsletters it was suggested that information be developed so students could reconstruct it over time. It was also suggested that the language of math be incorporated in homework assignments, and used in assessments.

Oral recitation is just one more method teachers can use to help students memorize information. Adults often use it when trying to remember a license plate number, phone number, or grocery list. This practice anchors information in the brain and helps students absorb and retain information upon which understanding and critical thought are based. The more sophisticated mental operations of analysis, synthesis, and evaluation are impossible without rapid and accurate recall of bodies of specific information.

Oral recitation, is the practice of having the entire class recite important facts, identifications, definitions, theorems and procedures within the instruction and later when they need to be revisited. Concept development generally precedes oral recitation. Whole class recitation (repetition) of this information should be repeated a number of times, however the total time involved should not exceed two and half minutes. By having the students first read the information off the board with the teacher, students learn how to read information correctly and how to say it. Oral recitation is a language acquisition strategy that helps all students learn – not just English language learners.

This process also keeps students engaged in learning, helps them verbalize their knowledge, and suggests that if the information being presented is important enough for the entire class to recite, it is worth remembering.

After oral recitation, using the success on success model, teachers should call on students they believe can repeat the information. That sends a signal to the other students that the class is "getting it".

Too often teachers call on students that are not paying attention, not getting it, to let them know that they know they were not paying attention. Unfortunately, that also sends the message to poorly performing students that a lot of other students are not getting it, therefore its okay if I'm not getting it.

If students in your class can not remember basic facts such as area formulas, the quadratic formula, theorems, procedures, definitions, then use oral recitation.

When I hear students read $\pm$ b as plus *and* minus b, I tend to think that the teacher did not take the time to teach that as plus *or* minus. Students often experience difficulty translating English to math correctly such as four less than a number as 4 – n. If your students are experiencing these difficulties and you are not using oral recitation, you now have a strategy to improve your instruction and increase student achievement.

Rather than complain about deficiencies, as math teachers we need to solve the problem. We need to teach the language of math as a language.

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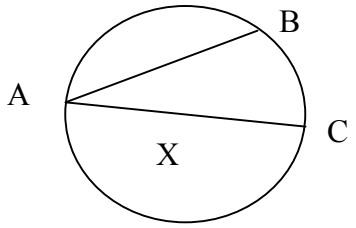
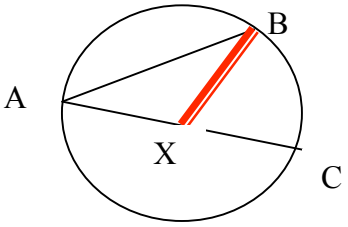
Inscribed angle – an angle whose vertex lies on a circle and whose sides contain chords of the circle.



Most students are taught to memorize the formula for an inscribed angle as half the measure of the intercepted arc. To them it's just another formula to be memorized – and it should be. But overtime, like any material that has been just memorized, they will forget the formula.

As their teacher, you always want to develop concepts so they may be reconstructed later. I like to remind my students how often we rely on our knowledge of triangles to develop concepts and formulas.

Let's look at a special case of an inscribed angle, a case in which one of the chords is the diameter as shown in the first diagram. Draw line segment XB



$\angle X$ is a central angle whose measure, by definition, is equal to the intercepted arc BC.

Also note that ΔAXB is an isosceles triangle. XA = XB because the sides are radii. We also know that the base angles of an isosceles triangle are equal. $\angle A = \angle B$

And we know that $\angle BXC = \angle A + \angle B$, the exterior angle of a triangle is equal to the sum of the two remote interior angles. Since, $\angle A = \angle B$ we could re-write the last equation as $\angle BXC = 2\angle A$.

Solving for $\angle A$, we have $\angle A = ½\angle BXC$, so $\angle A$=1/2arcBC

Using this special case, while not a proof, suggests that an inscribed angle is equal to half the intercepted arc. And, students can see how their knowledge of triangles will serve them well for reconstructing information.

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