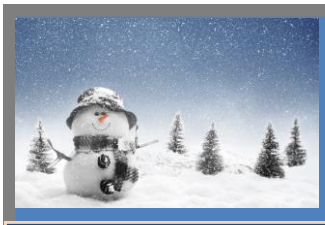
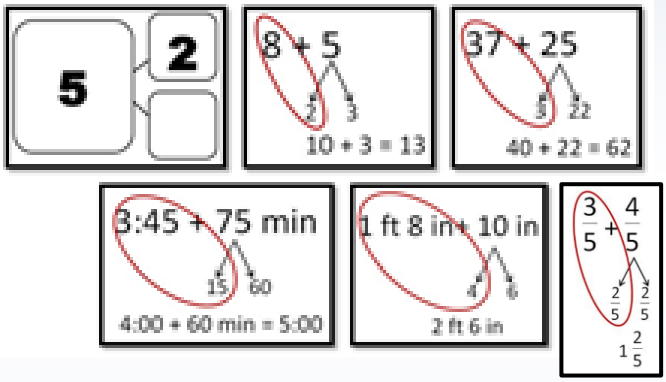


Math Empowers^2

Second Grade *Middletown Township Public Schools* *2nd Quarter 2015-2016*

"If basic facts are to be foundational, they must be based on an understanding of the composition and decomposition of numbers." -Kathy Richardson

Do you ever remember playing with numbers in school when you were a kid? Thinking of values in terms of **parts and wholes** or finding different ways to make the same number? I sure don't, but I wish I did because that's what composing and decomposing numbers is all about. **Being able to compose and decompose numbers is a crucial part of developing number sense and fluency.**



The images to the left show how the ability to fluently decompose and compose numbers allows for *flexible* computation… not only with basic facts, but also with multi-digit computation, which our second graders will work on after the winter break. Better yet, notice how students can apply this strategy to measurement concepts and even fractions in future grades.

NIX THE TRICKS
Bigger Bottom, Better Borrow!

Earlier this month, a valuable research document titled ***Nix the Tricks*** was shared with all of us. This document and Donna Boucher's blog titled ***Bigger Bottom?*** are very enlightening. As we prepare to teach our students subtraction with regrouping, we should avoid the phrase, "Bigger Bottom, Better Borrow!" Instead, consider working with small groups and focus on the concept. Provide hands on activities where students experience trading tens for ones using cubes, tens frames, or base ten blocks. Gradually, make connections between the model and the algorithm. This method is much more meaningful and beneficial for students than a trick.

nearpod

This highly engaging **Formative Assessment** tool allows students to answer open-ended questions! For more information view the self-paced webinar: **http://tinyurl.com/hbzflqp** and ask your building Math Specialist for a demo.

Differentiation/Tier 1 Ideas

As we know, by the end of grade 2, students are expected to "fluently add and subtract within 20 using mental strategies (2.OA.B.2)." Many students enter second grade flexibly composing and decomposing most numbers to 10, yet many do not. A **hiding assessment** can identify exactly what numbers a child can quickly and confidently recognize in terms of wholes and parts. Children often develop automaticity with 3, 4, 5 and then 10 before knowing all the ways of making 6, 7 and 8. When a student needs to count or use fingers to determine a missing part, then you have found *"their number."*

*Click here for a **hiding assessment** video!

There are a variety of activities that students can work with such as **Rekenreks, number bracelets, number bonds**, and **shake and spill** (*On & Off*) games. Investigations Cover-Up Game also comes to mind. These activities are a great resource and by giving each child "their" number, they easily become differentiated.