**Classroom Discussions: Using Math Talk to Help Students Learn**

**Why should we add “talk” to our set of instructional tools?**

* researchers have found that most American classrooms are filled with teacher lecturing, asking students to recite, or posing simple questions with known answers
* lecturing, recitation, and quizzing can be useful tools, but they have limitations
* purpose to enhance and expand the array of instructional tools you know to use
* ways of using language in teaching mathematics that will allow students to engage more fully in mathematical thinking and reasoning.

**Goals**

* + social – have students listen respectfully, cooperate, and build on one another’s ideas
  + social & cognitive – students to be able to make mathematical conjectures, present evidence, voice agreement, and disagreement with the claims of others, and support their own positions
  + core mathematical concepts & procedures

**When & What should students talk about?**

* + Is it significantly advancing student thinking and learning?
  + For talk to be productive, it must be carefully integrated with the content of the math lesson
  + goal is not to increase the amount of talk, but to increase the amount of high-quality talk

**Classroom talk may support and promote student learning in math directly and indirectly**

* direct access to ideas, relationships among those ideas, strategies, procedures, facts, mathematical history, & more
* indirect – building of a social environment/ community that encourages learning, mutual respect is fostered
* both are EQUALLY important, learning is not impacted if you don’t have both

**How can we push learners beyond incomplete, shallow, or passive understanding?**

* + often the first step in setting out to learn something involves realizing that you don’t understand it
  + allows students and teacher to hear misconceptions
  + certain forms of talk promote specific kinds of reasoning, improve logic
* teachers often forget that when they are talking, students can’t push rewind to call back the info so they can reflect on it
* certain talk moves we give students time and space to consider more deeply the content we expect them to learn

talk gives students practice in reflecting on their own thinking processes, expert thinkers keep track of their moment to moment understanding or lack of

* ability to expertly adapt and respond to on’s own internal processing does not develop overnight
* students need a great deal of practice
* self-regulative aspect of thinking
* ability to communicate clearly and precisely is essential, takes practice and motivation
* need motivation that others want to hear what you have to say, students will try to be more clear if they know their classmates will hold them accountable

build’s confidence in their own abilities to engage in intellectual discussion, some students leave the study of math or science because the talk becomes to demanding, \*should consider culture of your students

will eventually help them participate in conversations in high school, college, & beyound

values held by mathematicians & scientists: precision, clarity, intellectual honesty, effort, and thoroughness

successful talk takes planning and many months of work