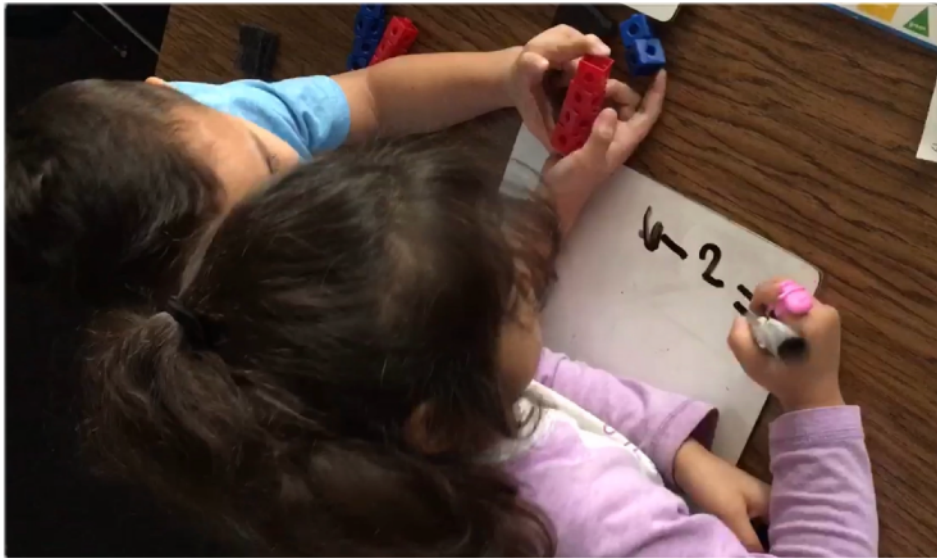


# Stepping into STEM

Education is not the learning of facts, but the training of the mind to think.  
- Albert Einstein



First graders in Mrs. Montoya's class use manipulatives to help them write subtraction sentences for fact families.

## Tech Corner

**Snap and Read** is here!

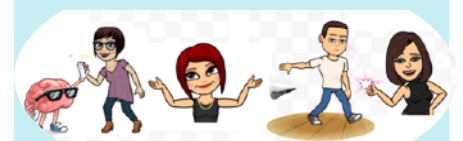
Are you looking to help



struggling readers by using the Text to Speech on the Chromebooks? Do you want to use Text to Speech on translated text? Then Snap and Read is for you! The district recently purchased a year long license to add this new feature to the Chromebooks and to the students' Gmail accounts. It is ready to go and easy to use! You can find directions and short (like **really** short) tutorial videos to help you get started. Just click [HERE](#). If you have any questions just contact me: [rblock@llcsd.net](mailto:rblock@llcsd.net).

## Contributors

Maria Gutierrez  
Denisse Frenes-Gomez  
Roger Block  
Erin Dunroe



## Here's the M in STEM!

Are you wondering how to increase the rigor in math? How do you know if a problem or task provides enough rigor? You are not alone! There are many resources available when googling "Depth of Knowledge" (maybe too many). This wealth of resources can leave educators feeling overwhelmed. We researched and evaluated various sites and found one that has what you need to continue incorporating rigor in your math lessons. Below is a link to Robert Kaplinsky's page dedicated to answering some of those pesky DOK questions. The site also offers examples on how to move from one DOK level to the next. <https://robertkaplinsky.com/tag/depth-of-knowledge-dok>

### MATH ON TWITTER

Twitter and Instagram hashtag:

#unitchat

Shares photos and ideas for Number Talks.

### TECH ON TWITTER

@Catlin\_Tucker

Google Innovator, has written 3 books on using Google apps in the classroom.

### SCIENCE ON TWITTER

@philipbell

A leader in developing NGSS, writes articles on STEM and NGSS, and shares phenomena.

## Science Talks

### What are science talks? How do I help students understand science simply by talking about it?

Research has shown learning happens through talking. However, in most science lessons, student talk takes up less than 20% of class time and when they do talk, it usually doesn't focus on sense-making. Reflect on your own science lessons: do students share their thinking, or simply share their answers? When students are asked open-ended questions, they respond in lively, scientific ways. The science and engineering practices themselves are highly social and require students to talk. They ask students to reason with others in order to reach a shared understanding.



Science talk is important for many reasons. First, it provides a window to student thinking that allows teachers to informally assess students and identify misconceptions. By participating in science talks, students make associations, develop social skills, and increase language development. Science talks are especially important for our English language learners. When students talk to each other they are more likely to connect to personal sources of knowledge, take risks with

a new language, and use classroom practices that support science learning. Science talks also make instruction more equitable and accessible to everyone.

**“Meaning is not stored language, but stored experience. To learn what things mean, and what language means, (to create meaning) requires immersion in experience.” - MacDonald & Molle (2015)**

So how do we support science talks in our classroom? When beginning to integrate science talks, it is important to establish classroom norms that will support talk and provide a safe place for sharing and refining ideas. Next, it is important to choose an activity, challenge, or phenomenon that will not immediately lead to one correct answer. This is the Engage or Explore portion of our 5E lesson plan. When the students are intrigued by the activity, there is a higher level of interest and investment. Students will want to talk about what is happening. The next piece (and possibly most challenging) is to facilitate and guide the discussion. I have included a list of facilitation strategies [HERE](#) and [HERE](#) to help. Choose the list that best fits your needs, there is no wrong choice. When planning for a science talk, choose 1 - 2 strategies to focus on that meet the needs of your students. For example, if I know my students have trouble listening to each other, I would make that a focus strategy. The last step is to allow students to begin sharing their ideas and learning from one another. As with any other discussion, it is important students support their claims with evidence. Help them reflect when they make leaps in their thinking. Students will also need support so [HERE](#) is a reference sheet for them. Choose 1 - 2 strategies for students to focus on during a science talk. Having them use all of the strategies when introducing science talks would be overwhelming. This reference sheet can be copied and placed in their science notebooks. [Video 1](#) and [video 2](#) are examples of science talks.

## ENGINEERING ZONE

January's engineering activities focus on winter fun! Remember, anytime students are working on an engineering activity, it is important for them to follow the engineering design process. Click [HERE](#) for a video on the steps. Click on the links below for the engineering projects.

TK, K, 1st: Design a [snowflake](#).

2nd/3rd: Design a [snow shovel](#).

4th/5th: [Frosted forest](#). This challenge also has a strong focus on triangles.



Mr. Haro's students design and build a wall for the "five little pumpkins."