Brainstorm and Know/Need to Know

Time Frame: 10 minutes

Overview: After students have seen the Entry Event and worked on their Evolution of Cell Phones and Science, we will ask students to brainstorm ideas to answer the question “What will the cell phone of the future look like and do?” The teacher will write a list of their ideas (outrageous and practical) on the board. Allow students to be creative without putting down any ideas, and expect the same of students. After a brainstorm, ask students to think about what they know about some of the ideas they came up with, and what are things they might need to know to answer the initial driving question.

Standards and Objectives:

* *TC.3. Students will demonstrate creativity in the explanation of their unique cell phone:* Students will show creativity in their ideas for a future cell phone.

Materials: large whiteboard

Lesson:

* Allow for at least 10 minutes for this discussion, even if students are not done with their Evolution of Cell Phones and Science Timeline.
* Let students know that every student will be required to share one thing with the class.
* Write the words Brainstorm, Know, and Need to Know on a large whiteboard. Leave them up throughout the unit.
* Give students two minutes to brainstorm ideas for a future cell phone, things they already know about cell phones and the science behind them, and things students need to know to answer the initial driving question, “What will the cell phone of the future look like and do?” If students are stuck, encourage them to think of features they have heard of in other technologies, such as other electronic devices or body armor, and apply it to cell phones.
* After two minutes, ask for volunteers to share a brainstorming idea. Make sure that during the brainstorming, neither you nor the students say anything negative about anyone’s ideas including reasons it won’t work. Remind students that ideas that seem impossible or trivial can spark other better ideas.
* Ask students what they already know about cell phones and cell phone technology.
* Ask students what they will need to know to answer the driving question.
* Allow time for every student who wants to share if possible, but make sure you get through all three questions before the end of the class.

Facilitation: The teacher will facilitate the discussion. Some of the questions he/she might ask are:

* Brainstorm
  + What are some things you would like cell phones to do?
  + Are there any things on the video you saw cell phones do that they don’t currently do now?
* Know
  + What do cell phones already do, specifically newer and innovative functions?
  + Do you know how cell phones do what they already do?
  + Have you seen any trends in cell phone technology? (Think about the Evolution Timeline you created.)
* Need to Know
  + What do you need to know to figure out what possible new cell phone technologies will be?

Assessment: The activity will be used as a formative assessment to see what information kids already know, need to know, and want to know in order to start their projects. It will also let the teacher know if students are already thinking of nanotechnology as a way to improve cell phones in the future.