

Bringing it all Together

Running out of time in class to do all of the activities you have learned over the years? Trying to decide which activities to omit, but having a difficult time? Feel like all the activities are necessary, but feel the heat of covering all the subject area test topics? Bringing it all together will show you different ways to incorporate most, if not all, of the activities that you feel are beneficial in your classroom. You won't feel like you have failed to introduce a concept with "bringing it all together" and you will save a lot of classroom time. Come see how you can incorporate all of the great activities you are learning at the convention into one productive classroom review day or a "differentiated learning" lab week.

Bringing it all together is an idea I started using in my classroom that allows me to use almost all of the activities that I have learned over the years in a productive and beneficial way that does not occupy too much class time.

The first idea I had for "Bringing it all together" was the idea of lab rotations. I started this three years ago, and since that time I have built onto this concept and used it in many other ways.

Lab rotations usually take a week to fulfill accurately. Choose 4-5 activities and set aside one week of class time to complete them. I usually set up 5 lab stations in my classroom with a variety of activities. This is usually done near the completion of a chapter.

On the first day of lab rotations, you will make a short visit to each station and describe what the students are to complete and the goals and objectives you want them to have accomplished at the end of the activity. Homework for the night will be to complete a properly set up lab report. You may want to give the students an outline to follow so that lab reports are consistent. The second day, all the students will rotate lab tables except for one. That student will stay at the lab table from the previous day and give the instructions to the next group. After the student has given the directions, they will leave that lab group and catch up with their original lab group. Then, the lab activities will continue. Same procedure will follow each day, except each day a different student will "stay behind" to explain the assignment to the next group. At the end of the week, you will have a series of 4-5 labs completed and a good understanding by all of the students as to what is being accomplished. One of the factors that I find most beneficial is the student teaching. This allows the students to have an opportunity to explain the concepts in their own words and answer questions that their peers may have. The comfort level quickly increases and the students are more likely to be able to give you detailed information about the topic being studied.

The second "bringing it all together" activity I use in my classroom is used as a review at the end of the chapter. Let's face it, some topics in science have so many labs, class activities and demonstrations that can be used, that we sometimes find ourselves confused as to which activity will be the most meaningful. Sometimes we pick the most complex activity, hoping that it all makes sense to the students, and sometimes we pick an easy activity that will fit into our time slot, leaving the students bored and uninterested.

"Bringing it all Together" review activity takes a little more time to set up, but is well worth the benefits. When I use bringing it all together as a review activity, I place index cards with specific questions face down on each students desk. These cards are usually numbered or placed in order of

the seats in the room. The students will sit at their group (usually two students) and read the card. Some of the cards will require writing, so will require showing understanding of concepts or demonstrations taught in class, some will require interpretations of drawings or graphs, etc. But the point is, ANY activity that you have done in class, or failed to do due to lack of time, can be used. Ask the students to read their question on the card and explain the answer they came up with to the class. The answers and cards should be in an order that shows progression throughout the chapter. This activity helps the students to review the concepts you have been teaching throughout the chapter, as well as grasp the significance of order in the concepts. This activity is also great for a review at the end of the year or right before the subject area test. It shows the students how the concepts are related to each other as well as the importance of the sequencing of events in biology.

Ideas of Activities that can be used to “Bring it all Together”

Topic: Nature of Science

- Bug’s Life
- Problem Solving
- Scientific Method
- pH Activity
- Book Activity

Topic: Laboratory

- Introduction to the Microscope
- Creation of Wet Mount Slides
- Accurate Measurements
- Measurement Lab Rotations

Topic: Chemistry

- Water/Toothpicks
- Gum Drop Atoms
- Surface Tension with water and penny
- Element I.D. Cards
- Ionic and Covalent Bonds
- pH in the kitchen

Topic: Cells

- Soap cells
- Models
- Similarities and differences
- Microscope views
- Cell membrane model

Topic: Osmosis/Diffusion

- Egg Lab

- Gummy Bear Lab
- Lighted Match/perfume activity
- Dialysis tubing activity

Topic: Mitosis/Meiosis

- Pipe cleaner mitosis/meiosis
- Watson/Crick movie segment
- Models
- Cookies
- End result diagrams

Topic: Genetics

- Genetic problems – single trait cross
- Reebops
- Making a face
- DNA key chains
- Construction paper DNA
- Gummy bear lab
- Replication lab
- Bingo Boards