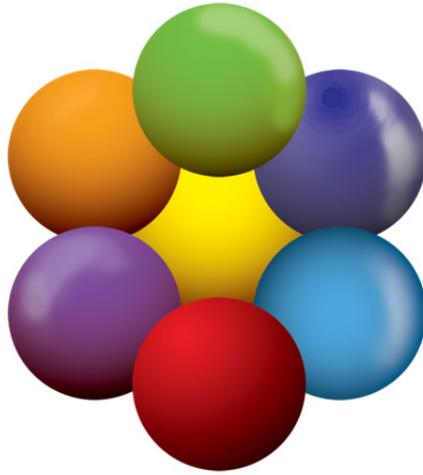


Just ASK's

**Review Strategies in Action
Secondary**

**Applications by Participants in
Just ASK Workshops**



About Just ASK

The Essential Question of Just ASK's Work

What do schools and classrooms look like when they are organized around a commitment to the achievement of high standards by all students?

Just ASK Publications & Professional Development (Just ASK) is based in Alexandria, Virginia, USA. Established in 1989, Just ASK provides products and services for educators in formats that facilitate a shared understanding and the use of best practice in teaching, learning, and leading in 21st century classrooms, schools, and districts.

Driven by the essential question displayed above, the publications and products developed and distributed by Just ASK are used by Just ASK consultants in their long-term multifaceted work with schools and districts, stand alone for use in professional development initiatives led by district personnel, and are often used as texts for college courses. These comprehensive resources use a common language and concept system that makes the **Common Core** come alive. Because they are cross-referenced, administrators, teacher leaders, veteran teachers, mentors, coaches, and new teachers can all be on the same page!

Call us at 800-940-5434 or go www.justaskpublications.com to request a catalog or a consulting services brochure or to subscribe to our free e-newsletters.

Review Strategies in Action - Secondary

This collection of ways participants in Just ASK workshops have used strategies from *Active Learning and Engagement Strategies*, *Why Didn't I Learn This in College?*, and *Instruction for All Students* provides new teachers (in fact, all teachers) innovative content-specific ways to have students actively engage with, apply, and/or review important knowledge and skills.

Middle School English: I used **Artists in Residence** to reinforce difficult vocabulary definition for a test with my 8th graders. The words were taken from the newspaper which the students are to read daily. We have accumulated these words over a nine week period; I selected them because they are real life words that were necessary to understand if they were to comprehend the material in the articles they were reading. We have discussed the definitions and agreed upon one for each word which seemed the most definitive. In preparing for the test, I assigned six words to each quad. I then passed out large sheets of butcher paper and asked them to illustrate each definition using no numbers or words only pictures and symbols colored effectively (stick people were welcomed and art skills were not a prerequisite). Each group then presented its mural of picture definitions to the class describing what was being pictured (in the unlikely event that the class could not tell from the depiction). Once the word was identified then the person explained his or her picture to fit the definition. (This could be termed justification).

At first the students were concerned with not being able to draw well enough and not knowing how to picture a word. Once they got going, however, and realized I really did not care about the artistic quality of the drawings, they had a lot of fun. Listening to their conversations about what to draw was great and then hearing them support one another's efforts was encouraging. They went up to the front of the room in groups for moral support, and we had fun listening to each person's rationale for why they chose to draw what they did. I particularly liked the way each group stood up for one another if the class thought picture did not make sense.

We then taped the pictures up around the room so each day the students could review them and even use them during the test since no words were written on them. I could see them glancing up at them off and on throughout the test. The grades on the test were very good considering this test included such words as: emaciation, exonerate, retaliation, divisiveness, coup, etc.

This obviously took a lot of class time to complete, but I have been trying to discipline myself to commit the time to any project that I deem worthy of the students' time and effort. The variety of the task was welcomed in this dreary time



of year, and I even had 8th graders whom I had had in English last year moaning because they had not gotten to do the same thing. The grades on the test, of course, gave me my best answer. I believe that because I included several different modalities in this exercise: visual, auditory, and tactical, I was better able to meet most everyone's needs. I intend to try these again using literature short stories as I try to teach how to write a plot line.

Jan Thompson, Appleton Area School District, WI

High School Math: I used a version of **Bingo** as a review game for my algebra midterm. I had a list of 50 math problems from the entire first semester and a list of 65 possible answers. Students received a blank card and could pick any 25 answers they wanted to fill their card. For the review game, I would put a math problem on the board and students would have to work out the problem to see if the answer was on their card. This was a fun review of the entire semester.

Rebecca Hope, Prince William County Schools, VA

High School English: The best way to learn about a topic is to teach it to another individual! Using this idea, our 9th graders showed their mastery of the concepts that we have covered through their midterm and final review and proved to be highly successful.

We typed out a sheet of all the terms the students needed to know for the exam. They broke themselves into groups of three or four and were given the task of creating a fun review **board game** that covered all of the given terms. They had two class periods to develop their game and have it ready to be played by their classmates.

On the day they were due, students first played their own games to see if they were successful and to allow us to evaluate them and ask questions. Students then rotated from station to station and played each group's games. These games were fun but, more importantly, they forced the students to review multiple times for the exam. It also gave students the opportunity to "present" and "teach" the material to their classmates.

Liz Hernandez and Susanna Brennan, Prince William County Schools, VA

Middle School Physical Education: I used **The Envelope Please** with my 9th and 10th grade co-ed weight training class to check for understanding. At the beginning of the class we reviewed areas such as safety, muscles, aerobic and anaerobic exercises, antagonistic muscles, and warm-up procedures. I also told them that they would be receiving an envelope with a question in it. I told them that they would be opening the envelope at the end of class and that they would have to write the answer to that question and explain to a partner why they wrote what



they wrote. At the end of the class, I had them open their envelopes and answer the question they had been given. **The Envelope Please** was not only an effective closure to the class, it greatly increased the level of attentiveness during the lesson because they knew they were accountable for the answer to their question.

Jim Johns, Greece Central School District, NY

Middle School Social Studies: In the past, the product for this assignment has been a poster and poster presentation. This format ended up being time consuming for many students and they appeared to be tired of the format. The 8th grade social studies teacher, information technology teacher, and I collaborated to try using **Glogster**, an online electronic poster tool. Students are energized using this tool. They love it! It is an exciting way for them to demonstrate creativity integrating color, backgrounds, poster organization, pull-down information boxes, text, sound, images, bibliography, and more. This is an exciting product tool with many possible uses. However, the assignment rubric has to be especially clear and structured so that students demonstrate critical thinking and learning and not just a glitzy cut-and-past collection of facts. Students' excitement is palpable and the sheer delight and interest during poster sharing are a testament to how engaged students are. **(PMR Note: This exercise could create a great set of review visuals to post around the room so that students are surrounded visually with the key concepts and processes they need for a cumulative assessment.)**

Elizabeth Matera, Newton Public Schools, MA

High School Science: I spent time thinking about and experimenting with assessments that I use to **Check for Understanding**. After studying photosynthesis and cellular respiration with the traditional notes/review methods, I had students draw a **diagram/visual** depicting the relationships between all the vocabulary words associated with these two important chemical reactions. I gave students a word bank and they received colored window markers to create their diagrams on the lab tables. This activity gave students the opportunity to apply the questions of photosynthesis and cellular respiration to "real life" by diagramming it out using components of the ecosystem (autotrophs, heterotrophs, etc.) The writing on the table component was just pure fun and motivating. Students took time on their **diagrams** because they were interested. If I had them do posters, they may have been okay, but they spent more time being careful with their depictions because they liked the product. They were able to check their notes and make corrections as I helped them analyze their **diagrams**. When their diagrams were complete, others checked them and then they copied the corrected diagrams into their notes.

Lori Mott, Northborough/Southborough, MA



Middle School Math: I used **Class Mind Maps** in my Math 8 classes to review the first part of a unit before taking a quiz. I did not have to explain the process of how to make a mind map or what a mind map was because students in my classes were very familiar with making them from other classes. I gave students four minutes to make a personal mind map of the important things they had learned in this section of our algebra unit. I then gave the students two minutes to work with a partner to share their mind maps and add anything new they wanted. Then I posted large chart paper on the board for students to make a **Class Mind Map**. Students came up to the board and added new ideas until we had nothing else new to add. As we were adding to the **Class Mind Map**, I asked students to add to their own mind maps so they could use this as studying tool. Looking back at this activity, it went very well. Students were on task and I believe most of them used their mind maps to study. The results on the quiz were the best I've seen all year! I think using the **Think-Pair-Share** model to make the mind maps helped students because it built their confidence. Students were much more willing to share because they had the opportunity to discuss their own personal thoughts with a classmate before sharing it with the whole class. This activity takes time. I used over half a class period, and I still could have used some extra time. In the long run, I think it was worth it. I learned that with this approach many students who normally do not participate will participate because it helps to build their confidence.

Jennifer Pennise, Greece Central School District, NY

High School Science: I had my students complete a **Class Mind Map**. After being out of class and away from my students for several days, I needed a review tool to get everyone, including myself, back on track. I made a sheet for everyone with the same central idea: Atomic Structure. We then identified key ideas that related to the central idea and modeled on the white board how to complete a mind map. The students worked independently for five minutes, then paired up and revised/added more details. We then built a **Class Mind Map** on the board and tag-teamed adding more ideas. As soon as we began tag-teaming on the chalkboard, the momentum and engagement increased. I am going to try and incorporate this review strategy into more lessons.

Brittany Neptun, New Trier High School, IL

Middle School Science: We used the **Corners** (Kagan, 1997) strategy in our co-taught class to help students review for their first common assessment. When teaching middle schoolers, it is important to incorporate movement into the lesson as often as possible. With this in mind, we felt that **Corners** was a perfect fit. We moved all the desks to the center of the room and explained the process to the students. Then we read the practice question aloud and each student moved to a different corner of the room (A, B, C, D) depending on what they thought was



the correct answer. Once they were grouped together in their respective **Corners**, we gave them a couple minutes to discuss why they thought their answer was correct. After they had decided on a good explanation, we called on a member of the group to deliver it. After all groups had given their rationale, we announced the correct answer and moved on to the next question. I was very excited by the students' reaction to the **Corners** exercise. All the students were actively engaged in the process. Even if the students were unsure of what the correct answer was, they had the chance to discuss the question with classmates and hear the correct responses as well as why other responses were not correct. I feel that students are more apt to retain information if they are engaged in dialogue, and for this reason, I think the exercise was very successful.

Jeremy Scott, Prince William County Schools, VA

Middle School Art: I created a quick closure activity with **Sort Cards** involving different art movements and reproductions that we have been studying. Given various art related vocabulary on strips, students were able to group these clippings and images into different categories as teams. This was great for not only review and assessment, but it also built on teamwork skills and social interactions with peers.

Beth Oustrich, Solvay Union Free School District, NY

Middle School Math: I used the **Graffiti** strategy in an 8th grade math class in a unit on geometry. The lesson was designed to have students discover properties of different types of quadrilaterals. Students were placed into six different random groups of about three or four students per group. Each group was given a picture of a quadrilateral as well as a ruler and two protractors. The group was asked to designate one person to be the recorder for their group. Each group received a list of questions that were to be investigated for each quadrilateral. Examples of some of the questions were:

- Are any sides congruent?
- Are any sides parallel?
- Are any angles congruent?
- Are any angles complementary or supplementary?
- Does the figure have rotational symmetry?
- What is true about the diagonals of the figure?
- Are any sides perpendicular?

They worked several minutes on the assigned question and wrote down the specifics of what they found to be true on the blank sheet of paper. They were given several minutes to work on the figure. They then had to pass their quadrilateral to the next group so each group received a different quadrilateral. They checked the work that had been completed, changed any mistakes, and then continued working on the questions. The students were asked not to duplicate



any answers on the note sheet. The groups continued this process until they had seen all six quadrilaterals. I collected their work and used it as a discussion topic the next day. We used what was found to complete a chart to show specific properties of the six types of quadrilaterals. I found that as they got to the last couple of quadrilaterals they did not need as much time because most of the properties had already been discovered. It was amazing how much students remembered from this learning experience. This made the summary of the properties go rather quickly, as the students filled in a note sheet on the properties.

Jennifer Pennise, Greece Central School District, NY

Middle School Math: I used **Graffiti** with my 7th grade math Academic Intervention Services (AIS) students before beginning a unit on area and volume. The purpose was to gather pre-assessment data and to have my students brainstorm ideas, formulas, vocabulary, and more about the various topics. When we are finished with the unit, we will go back to these charts and see what new ideas/concepts students are able to add.

I was impressed with the ideas that my students came up with, including some that did not cross my mind. They really liked using the chart paper and markers to illustrate their ideas. They were able to express their ideas in a variety of different ways including drawing pictures, listing vocabulary words, formulas, and more. My students responded very well to being able to write anything that came to their mind. They were a little hesitant at first and wanted to have the “right” answers. Overall, I was pleased with the strategy and would use it again to access prior knowledge or to check a lesson for understanding.

Next time I will pick broader topics so that my students would have more ideas to write down. I would also like to try using **Graffiti** in the middle of lessons to check for understanding so I can adjust my lesson accordingly. This is definitely a strategy I will share with colleagues since it can be adapted for any content area.

Jessica Matt, Tully Central School District, NY

Middle School World Languages: I used **Graffiti** with my 8th grade Introduction for Language students. The topic chosen was French-speaking countries. The standards addressed were: Students demonstrate an understanding of the relationship between the practices and perspectives of the French cultures, and Students demonstrate an understanding of the concept of culture through comparisons between French culture and their own. The learning experience was very successful since students were able to relate the culture of the different countries, and they enjoyed their contributions to the different posters. In so doing, six posters with six different French speaking countries were displayed in the classroom. Students were grouped in fours and they had to move from poster



to poster adding information or pictures about the different countries. Once students reacted to all the countries, posters were displayed and opinions were shared. Finally, students made use of all the information collected in the posters to prepare a brochure about one French speaking country. I believe that students and I learned a meaningful way to relate content following a creative, cooperative, and purposeful way of learning. I also learned that this strategy is useful when checking students' learning and previous knowledge.

Cara Lassus, Prince William County Schools, VA

Middle School Reading: I chose to use the **Graffiti** strategy in my 6th grade reading class for the novel *Hatchet* by Gary Paulsen. Throughout the year, ongoing topics that we study in class are literary devices, such as flashbacks, foreshadowing, figurative language, and irony. We also continually discuss what makes the books we are reading “good” books, or books that win awards. For this activity, students were separated into their prearranged groups, within which they usually hold small group discussions on these topics.

First, I created four stations with pieces of large chart paper with a different title at each. Titles included “examples of flashbacks,” “examples of foreshadowing,” “examples of figurative language,” and “examples of how the author’s style is unique/interesting to the reader.” Giving each group six to eight minutes, they would start at one chart and write down one example from the book along with the page number. When the groups rotated to the next chart, they could not list the same example of any of the prior groups. Not only did each group successfully come up with a unique example for each chart, they asked if they could go around again because they had more that had not yet been written! This activity proved that the students were truly understanding the difficult concepts that we had been discussing all year!

Amy Chiasson and Rich Paolino, Waltham Public Schools, MA

High School Science: I used **Graffiti** during our genetics unit right after the students had learned about DNA structure, replication, and protein synthesis. I used this strategy as a link between our last unit (reproduction) and the new one by including old material like mitosis and meiosis and asexual/sexual reproduction along with the new more difficult material. At the end of the **Graffiti**, the students had to take one poster they had created, evaluate all the information to make sure it was correct, and then summarize it on another sheet of paper. I also had them create three quiz questions from that poster which I used on a formative assessment. It went better than I expected. The students really needed the extra time to process the information and make connections that had not been previously made. They were also able to discuss and communicate with others and share their ideas about the topics. I would do this summary piece again because that forces the students to evaluate whether the information was correct.



This made the discussions quite interesting! I will definitely do this again when there are many topics that can be tied together or things that are difficult and need more processing time. I will also try this with new topics that students do know something about coming in, like human impact on the environment. I want to continue to put together activities where students are forced to do work on their own. I want to plan units/lessons with the idea that if they feel it is important to them and affects them, they will be more engaged and willing to put forth the effort.

Teri Marsh, Greece Central School District, NY

High School English: Graffiti was quite useful in reviewing for a test. On chart paper, I posted different questions and applications around the room. Questions and applications were designed to aid in review of material we had studied earlier in the unit. Students broke into small groups, approached each station, discussed their response, and recorded it using a single color marker. The class rotated until each group had addressed each question. I found that the students were engaged throughout the process, worked cooperatively, and provided thoughtful responses.

After the entire class had addressed each chart, they returned to their seats and I went to each chart to explore their responses aloud. Each group was accountable for their responses and each was helpful in clarifying their answers. Students took notes where I further clarified responses and strong points while adjusting others. Many times, the clarification became a brief class discussion.

Moira Connolly, Waltham Public Schools, MA

Middle School Math: I used **Graffiti** in my 8th grade math class. Students counted off by sixes and split into groups. Each group received a quadrilateral and a list of thought questions. Students were given four minutes to jot down as much as they could in response to the questions. When the time was up, each group passed their quadrilateral and their notes to the next group. Each group had to check over the previous group's work, look for misconceptions, and add new information. After all the groups had seen each quadrilateral, the shapes and notes were posted. As a class, we then looked for patterns among the students' work. From this activity, students discovered the properties of various quadrilaterals. I thought this strategy worked very well in my class. Students were engaged in their learning, participating in dialogue and debate, and reflecting on each other's work. This gave them the opportunity to discover the geometric properties of quadrilaterals, rather than being told by the teacher.

Cindy Kotrides, Greece Central School District, NY

Middle School Math: The standard I was focused on was number theory, factors and multiples. I chose **I Have the Question, Who Has the Answer?** because it



lends itself well to math. It is also a great way to review prior content. This was the first time I had tried this so I wasn't sure how it would go over. I think the fast-paced nature was the selling point for the kids. Students seem to be really engaged in learning experiences that are quick-paced like their Game Boys and PlayStations. One issue that came up for me was the level of personal responsibility. Students were very eager and therefore told other slower students when it was their turn. Just in that respect, I was able to tell which students needed more help. What I would like to do in the future is to try this during academic intervention time. I think in that setting it would be better to have students follow up by making their own set of cards and questions.

Beth Rothberg, Greece Central School District, NY

Secondary Math: One strategy I used that was extremely successful was **I Have a Question, Who Has the Answer?** I used it as a review of previous math lessons on lines, line segment, rays, and points. I was about to teach a lesson on coordinate points to my fourth period class and this strategy provided a great introduction. To review the previous lesson, I made cards with riddles on them and issued them to students in various groups. The other cards had the answers which I also issued to other students. The students with the riddles read them and the students who had the answers stood up and read the answer. The other students decided if that was the correct answer. If someone who had the answer wasn't sure that it was the right one, I allowed the other students in the group to look at the cards and come to a decision. This worked well as the groups always wanted their partners to be successful in answering a question. I also found that students were able to remember key concepts from previous lessons which were integral for them to make connections with the new concepts. They were able to participate and work cooperatively by assisting each other in answering questions.

Jonah Douglas, Prince William County Schools, VA

AP Calculus: I used **I Have the Question, Who Has the Answer?** with my AP calculus class to review basic differentiation and integration formulas needed for the AP exam. I made five sets of cards and distributed them to groups of four. I made the cards so that each particular card had a question and an answer and so that the process was complete when the last answer was read. I included the basic differentiation and integration formulas and some basic problems using the formulas that could be mastered without paper and pencil.

I wanted students to be able to process, summarize, and use learning in meaningful ways. I wanted them to understand the important of memorizing the basic techniques so that when the process of differentiating and integrating became increasingly more difficult, they would be able to breeze through it. I wanted the students to understand that they needed to know and be able to use these formulas in order to be successful in the class the remainder of the year.



The cards were made so that a connection could also be made between these two most important concepts learned in calculus.

The AP class that I have this year is very large. Half the students have mastered the material and the other half has not because of a lack of knowing and understanding the basics that are needed to be successful in such a course. The students were very eager to take part in this activity and the information that was retained by those students who were struggling with the material pleasantly surprised me. The students were able to make the connection between differentiating and integrating and better understood the reason for the connection and how it related to various theorems in calculus. After doing this activity a number of times, the students no longer needed to “memorize” the formulas because they could see the connection between the two and could recognize patterns in the formulas that made them easier to understand.

Francene Gleason, Berlin-Boylston Public Schools, MA

High School English: I used **Inside-Outside Circles** (Kagan, 1997) for vocabulary review. I gave each student a card with a question on it. They wrote the answers to their questions on the back of the cards. After getting into two concentric circles, the inside circle rotated one way while the outside circle rotated the opposite way. When the music stopped, they stopped moving and faced someone in the other circle. They had to read that person. They then exchanged cards and repeated the process. I was really surprised to see how much they enjoyed this. If I had them in the same place for too long, they would start quizzing those around them. If someone couldn't get the answer, others next to that student would give them clues to help them figure it out.

Heather Browne, Prince William County Schools, VA

Middle School World History: The structure of **Inside-Outside Circles** (Kagan, 1997) requires every student to participate. One detail plays a key role in student success: the fact that the answers were on the back of each card scaffolding the learning and gave students confidence. Even if they couldn't answer their partner's question, they could feel some satisfaction in “knowing” the answer to their own question. This little boost made a world of a difference, for even the most reticent students beamed as they tried to answer the questions. Apart from some minor errors in managing the card switching (students kept getting the same question repeatedly), this method was excellent for an energetic review session.

Katie Beller, Watertown Public Schools, MA

Middle School Literature: I used **Inside-Outside Circles** (Kagan, 1997) for reviewing for a test at the end of a literature unit about dreams. This strategy is good for summarizing and review, so it fit well with the purpose of the lesson:



have students answer different kinds of questions about the literature and identify key vocabulary words. The **Inside-Outside Circles** seemed to work well because all of the students were answering questions simultaneously, and each student got to review a lot of material and get immediate feedback. Having each student initially answer the questions on the index card before the activity gave each the opportunity to share their knowledge with the rest of the class. Furthermore, the activity seemed especially suitable for 6th graders since they got to move around while learning, so their attention was more focused as they found the activity to be fun and engaging

Dora Horvath, Waltham Public Schools, MA

High School World Languages: I used **Numbered Heads Together** in a second year Spanish class. I had just introduced the preterite tense. I know new tenses take lots of practice, so I put them in teams of four to five (using my **Sticks** with names on them), numbered them, and began asking questions. I started by asking them to review “hablar” in the preterite. Then, when a member of each group stood up, I would randomly ask for the various forms of “yo” from one, “tu” from another,” etc. Then after a while we went on to other *er* and *ir* verbs. Then I mixed them up by asking questions from the book activities. This week we are learning irregular preterits in both levels two and three and I plan to use **Numbered Heads Together** again. I am pleased to have some new ideas because when I analyzed my **Checking for Understanding** I tended to use the same successful activities and they get old after a while. I also like **Numbered Heads Together** in particular because those students who are not as talented in Spanish cannot hide. They have to work with the group because the group is only the strongest as the weakest link. But the group practice makes it okay to ask for help. The better students also get to be “teachers” and like that role.

Jennifer Shopland, St. Vrain Valley School District, CO

High School ELL Math: I designed a **Scavenger Hunt** by placing questions on cards to review math concepts. The students worked in four groups. They first tried to find answers within their group then moved around the class and looked for others to help them remember/clarify any concepts. I told them I was invisible so that they didn’t constantly come and ask me for answers. I was their last resource. It was their turn to discover and deal with any errors. They were allowed to work together, use their notes, any material in the classroom, or their friends. It was collaboration not competition. We then went over the answers as a class and clarified the answers to difficult questions. I reminded everyone that the purpose of the strategy was to demonstrate that collectively they knew a great deal.

Moulay Driss Belkorchi, Prince William County Schools, VA



High School Social Studies: One of my world history classes includes students with a wide variety of skills, and more than half of the students have IEPs. I decided to use hands-on **checking for understanding** to accommodate the varying skill levels. I had four **Signal Cards** stating the following: “Stop, I’m Lost,” “Slow Down,” “I’m Confused,” and “Full Steam Ahead.” I found this strategy useful because it allowed me to stop the class and **check for understanding** when I felt the students looked confused. I felt that it allowed the students who were shy and nervous about their confusion let me know about that confusion as we moved through the lesson. This also allowed me to target my attention to specific students, and to group different students together based on their understanding of particular concepts.

Steve Shomphe, Northborough/Southborough, MA

Middle School Math: I used green, yellow, and red **Signal Cards** to have students signal their level of understanding during our study of the Pythagorean Theorem. We had done quite a bit of work on irrational numbers, square roots, and estimation of length using geoboards. The current task was for students to write a formal presentation of a right-angled triangle determination. The work was to proceed in this order: sketch, label, formula, plug-in, do the arithmetic. I was very pleased with the students’ responses to the cards. Some wanted to modify the cards because they felt limited by three levels of understanding. One student wanted a “double red” to register her total confusion. Another wanted a “double green.” I was able to assist the “reds” quickly and without notice. Students who moved up through the colors as they better understood the process showed visible pride with their moves.

Jim Koloski, Bedford Central School District, NY

Middle School Math: Recently I had the opportunity to teach an 8th grade inclusion pre-algebra class. In this geometry unit, students were required to identify and solve problems involving supplementary, complementary, vertical, and alternate angles. Students are often confused with the vocabulary in this unit so I used **Sort Cards**. This class is 38% special education so “handling the information” is very beneficial for many of the students. Students began the unit by skimming the chapter individually to identify words and phrases related to the topic and recording them on an index card. They were then placed in teacher-selected groups to share their information, clarify any similar words and phrases, and eliminate duplicates. Each group sorted their words and phrases into categories. All the members of the group, except one person from each group who remained with the **Sort Cards**, then toured the classroom to observe what others had done. The one remaining member explained the categories to the touring members if they had questions. Group members then returned to their original groups to revise their categories. Students were asked in their groups to look at



the categories of words and phrases and in their own words describe or define any with which they were already familiar. I told students that they could illustrate the word or concept. After 10 minutes, they opened their textbook to clarify any additional words or phrases they did not know. As I moved around the room, I was pleased to see that by categorizing the words prior to attempting to define them, students had, in fact, been able to identify the majority of words on their own. I was also pleased to see that students in many cases had used drawings to help clarify their understanding of a word, phrase or concept.

Irene Jones, Prince William County Schools, VA

Middle School Consumer and Family Life: I tried **Sort Cards** with my 8th grade Foods and Nutrition class. I gave the students a list of about 25 words related to salads. They had to work with a partner to sort them. It was interesting to see the various ways the students sorted the words. The majority of the students sorted them according to food groups. This was good because the students saw that salad ingredients do not just come from the vegetable group. Other students grouped by them by the color of the ingredients. This was also good because they learned that color not only makes food more appealing to the eye, but that each color provides more nutrients.

Cindy Boddie, Prince William County Schools, VA

High School Social Studies: In Global History I, I used a variation of **Sort Cards**. I had cards with vocabulary words from the first two units for a review lesson. The students had to sort the cards by unit, linking them with an essential question and vocabulary. They then had to manipulate the vocabulary cards to form a graphic organizer relating the various terms to each other within the unit. Then they had to answer the essential question using evidence including at least ten of the vocabulary words. The activity went extremely well. The student feedback indicated that they were challenged by the exercise. They enjoyed the kinesthetic aspect of moving around, the interpersonal interaction of sorting the cards as a group (including dialogue and debate), the individual activation of prior knowledge, and use of literacy when constructing the paragraphs. This also enhanced their capacity to write using details and elaboration.

Jeff Holcomb, GCSD, NY

Middle School Art: A lot of times in the art classroom, critiques are uncomfortable and nerve racking for students. Students will not give their full, honest opinions for fear of hurting others' feelings or having to own up to their ideas. One way that I have worked to invite students to discuss art more openly is by giving them a character to speak **Through the Voice Of...** . For example, we were working on a cut paper project where I had students answer critiquing questions while looking at the artwork of their peers. The trick was that they were



looking and responding to the art as if they were the artist Henri Matisse who we had been learning about. This made the students feel more comfortable because it was not their voice directly but their ideas were still voiced through the safety net of their artist persona! It was a great experience that I will definitely use again!

Beth Oustrich, Solvay Union Free School District, NY

High School Science: After spending several class sessions working on one particular type of problem with my senior chemistry class, I was left with the feeling that students were watching me work but had not yet committed themselves to mastering the problems. It seemed that they were planning to study it seriously prior to the test, but not just yet. A few of them had mentioned that they “didn’t get it,” but even these kids hadn’t yet attempted to analyze the steps taken in solving the problem. I felt that demonstrating one more problem would accomplish little. In order to force the students to examine the concept more closely, I announced an immediate **partner quiz**. Each student was randomly assigned a partner and they were permitted to use their books, notes, etc. I had them solve a problem together which most of the students would not have been ready for on their own. Both were required to write out the entire solution so that I could randomly select one to “grade.”

Their initial reaction was panic, but they relaxed considerably as they realized that they could use their notes. The pairings worked out very well. Most groups had two people who were equally confident. I was gratified to hear them discussing, arguing, and giving valid reasons for their positions. Since my purpose was instruction rather than evaluation, I walked around asking leading questions. It took them about 15 minutes to complete the problem, which was longer than I had anticipated, but at the end of class, one student volunteered that this exercise had really helped. Only one group had an error, and even they understood the flaw in their logic.

Gillian Thomsen, New Trier High School District, IL

High School Literature: I went to Home Depot and bought mini tile boards cut to make **white boards (slates)**. I used this in place of the question I realized I use much too often: “Who can tell me... ?” In my class, I found the same few students would monopolize and/or contribute willingly while others were either too shy or were happy to allow others to participate so they could tune out. These **white boards** have really helped me to see what everyone in the class knows or thinks they know. It has also helped me see where students have misunderstandings so I could clarify information. Not only that, but the students seem to have fun. A few of them have asked to use them frequently and other teachers have borrowed them for their classes as well. I used the boards for the following content purposes:



- Vocabulary review
- Unit review before a test
- Reading check “quiz” after kids read at home on their own
- Students quizzing each other for fun in pairs back and forth

Allison Renna, Waltham Public Schools, MA

Middle School Social Studies: I used the **Stir the Class** strategy with my 6th grade class. The purpose of using the strategy was to determine what my students already knew about the United Nations. The students circulated around the room and shared their ideas. After I had activated students’ current knowledge on the topic, I had each student complete a **Three-Column Chart** based on notes I gave to the class and a reading on the topic. After the reading, the students completed a second **Stir the Class** procedure to see how much more information they could share and to eliminate any misconceptions they had originally recorded. I learned that I could incorporate several strategies within one class period.

Loan Maas, St. Vrain Valley School District, CO

High School Special Education Learning Center: Being a teacher of students on Individual Education Programs (IEPs), I tend to teach one-on-one or within small groups. Our learning centers do not have a specific curriculum, as we are focused on helping the students increase their academic success within the general education classroom. Test taking strategies are usually not taught directly by teachers in the general education class. Therefore, I decided to use a **Think Aloud** demonstration strategy to model a few ways to tackle a multiple-choice style test.

A couple of my students came down to my class last week to take a psychology test in a small group setting. Both were very nervous about the test so in a very impromptu manner I decided to demonstrate for these two students how I would approach and take this type of test.

I started my demonstration by telling the students that I was only going to pretend to be a student taking the test and that I was not planning to give them the correct/incorrect answers. I went through the entire test talking out loud about the different strategies I would use (reading the entire test first, circling questions that I was not positive of the answer, using the process of elimination for other questions, etc) as I went through the mock testing session. Several times the students made comments like, “I never thought about doing that,” or “I do that sometimes too.”

I believe that it was an informative lesson for them and for myself. The students used many of the strategies I demonstrated while they took the test and they also seemed more relaxed than when they first entered the classroom. I decided to try



and do this **Think Aloud** demonstration as a planned lesson in the future for other students, particularly before future exams.

Felecia Rutigliano, Northborough/Southborough, MA

High School Special Education Science: I was nervous about teaching the metric measurement system to the students, but modeling the process worked for all of them. Students also voluntarily came up to the SMART Board to model their understanding. I initially modeled this the second day to help clear up some minor misunderstandings, had a student volunteer to **Think Aloud** as well, and then had the students model their work on the SMART Board, white boards, and construction paper to show other students. This strategy ended up working extremely well and most of my students (many who have severe learning disabilities in mathematics) did quite well at the task.

Shannon L. Fey, Solvay Union Free School District, NY

High School Science: We used **Three-Column Charts** in my co-taught biology class before finals. We had students go through all their materials for the semester and clip together their notes/labs/quizzes for finals. Then they went through and sorted their notes into three columns: **I Know It Well, I Need Practice, and I Do Not Know It at All**. Then we assisted them in using this technique to study for their final. It went well! Additionally, we are trying to use to a different color for each unit so students can easily put similar materials together.

Jessica Liess, New Trier High School, IL

High School Algebra: During a unit on linear equations, I thought that using **Three-Column Charts** would be an excellent way to check for understanding of material that we were studying. I gave the students a chart with columns titled:

- **What I Knew About Linear Relationships**
- **What I Now Know About Linear Relationships**
- **What I Still Don't Know and Wish I Had a Better Handle On.**

The students had to come up with a minimum of five for each column. They did this as an individual activity and were not allowed to discuss their thoughts or concerns with others in the class. I really wanted them to sit back and reflect on what was taught over the past few weeks. I needed to know if I could go forward or if I needed to change the way I might have taught something. The charts enabled me to see if students were grasping and retaining the materials and I was able to recognize areas in which all students felt they obtained mastery and where they all needed help.

This class is composed of students with various learning styles and learning disabilities. They are an eager group of students always willing to try anything to



be successful in mathematics. They are frustrated with not having understood material up to this level and are hoping to find a connection between mathematics and real life. Students were able to identify their areas of need without feeling silly in front of the class and were able to convey this information to me in an organized manner that was very useful.

Francene Gleason, Berlin-Boylston Public Schools, MA

High School ELL Math: I used **Three-Column Charts** in two 9th grade algebra 1 classes for ESOL students. We had just learned how to solve first-step equations and I wanted to plan the following classes. I know that students who do not master first-step equations get completely lost with more complex equations. I used the last ten minutes of class and explained to students that they were going to hand me a sheet of paper on their way out of the class with the following information (I wrote an example on the board). The three columns were:

- **I knew that before today's class**
- **I did not understand it before, but I do now**
- **I still do not understand**

The table had four lines: equations with addition, equations with subtraction, equations with multiplication, and equations with division. The results were very helpful in planning the following two class periods. In one class, roughly half the class felt comfortable with all categories of equations and I moved them to multi-step equations. The other half felt like they still could not do equations with multiplication and division, and I reinforced the concept with them. In the other class, only two students did not feel comfortable with all four categories of equations. I was able to spend individual time with them to help them along. I will use this simple strategy again. It is quick, easy to use, and very powerful!

Frederic Bouchet, Prince William County Schools, VA

High School Social Studies: We experimented with **Tic-Tac-Toe**. The students took nine assigned vocabulary terms from the day's lesson, and constructed eight sentences using the words. The students then handed the work in as a **Ticket to Leave** and a check for understanding. The strategy was a success. The students connected with the vocabulary words beyond merely copying them, and it increased their retention. They were also engaged in writing, which coincides with the district's literacy focus.

Jeff Holcomb, Greece Central School District, NY

High School World Languages: I used **Tic-Tic-Toe** to reinforce Latin time and place expressions as a five-minute opening warm-up exercise in class. I put cards out on the front desk and asked for volunteers to participate in a new learning experience. The volunteers created sentences using words from the cards. Together the class critiqued sentences and made appropriate changes. The



strategy also enabled me to get a snapshot of my students' understanding of the concepts. Overall, it allowed me to re-teach and emphasize certain points without re-doing everything.

Matt Sparapani, New Trier High School, IL

High School Science: My chemistry students made their own term cards off of a 20 term list. In groups of two, the students chose nine terms at random and placed the cards down 3 x 3 for **Tic-Tac-Toe**. The review aspect came when each student group had to form relationships going across, going down, and making an "X." The relationships could come in the form of similarities, opposites, or consequences. For example, an aldehyde becomes an alcohol if an oxygen is added. The compound then becomes a carboxylic acid with the addition of a double bonded oxygen. The students did well on the test and said the review made them think of the relationship, not just the meaning of the term. I would definitely use this strategy again.

Emily O'Brien, New Trier High School, IL

High School Science: I used **Tic-Tac-Toe** as a class assignment to prepare for a chemistry quiz and to make connections between terms. The students do really well with this exercise in terms of connecting topics. I have also used this as a quiz.

Heather Miller, Greece Central School District, NY

Middle School Math: I use **Ticket to Leave** as an assessment tool for math. I give my students one to five math problems to complete which match the content of the lesson taught that day or previews content I will be teaching the following day. Sometimes I plan what the questions will be before I teach the lesson. Other times, depending on how a particular lesson is going, I do this impromptu.

I use this formatively to help guide future instruction. I keep a pile of blank "exit slip" sheets on hand. I like using blank sheets because I have direct control over the type of questions to be asked.

Nicole Lawson, Solvay Union Free School District, NY

High School Science: When I returned a recent test on bonding, I pointed out that topics that were assessed on that test were essential to understanding what we are currently studying. I also explained that the best way to avoid repeating mistakes is to be sure that you know why you made those errors. The students took a few minutes to individually go through their tests. I then answered their questions about the problems they couldn't correct for themselves. As we discussed the questions, students filled out their **Error Analysis**. When I looked at their papers, I found that many of the students took the trouble to specify the nature of their errors more clearly than I had anticipated. Furthermore, I was



pleased to see that they accurately attributed some errors to their failure to review certain sections adequately. I heard no arguments about why I had taken off partial points, perhaps because they were looking for incomplete responses, etc.

I felt that the time devoted to going over this test was far more productive than is often the case. Many of the students in the class have previously looked at their score, counted up the points to check for a calculation error, then tuned out during the discussion. This assignment gave them a “need to know,” which was probably amplified by the close ties between that unit and the next one. This test was one which lent itself to analysis by checklist because of the common errors made by students. While I think it might be more difficult with some topics, I will nevertheless use this technique more frequently.

Gillian Thomsen, New Trier High School, IL

High School Special Education: Many of the students I am working with this year are being exposed for the first time to general education curriculum, having just come out of the self-contained setting. Therefore, they are not quite prepared for the structure and rigor of the summative state assessments they will have to take over the next couple of years. Given the depth of the content they will need to know for the Regents examination, I am exposing them to higher level questioning throughout the school year on the **formative assessments** I am giving them. I tried incorporating the **Two-minute Warning** into my toolbox of assessment strategies. Near the end of the period, I allow my students several minutes to look back at their notes or review sheets to look up pieces of information they may be having difficulty with. As Baker stated, in his paragraph on **Two-Minute Warnings**, you can watch the students get better at taking notes and knowing where to look in their texts and notes. Over the last couple of months, I have seen my students putting more effort into their review sheets, as well as keeping their binders more organized and in order so they know where to look for information.

Ryan Hasto, Solvay Union Free School District, NY



Where to Find These Strategies in
Active Learning and Engagement Strategies
By Paula Rutherford

Bingo	15
Class Mind Maps	59
Graffiti	35-36
I Have the Question	40
Numbered Heads Together	63-64
Scavenger Hunt	82
Signal Cards	84
Slates (white boards)	85
Sort Cards	87-88
Stir the Class	90
Three-Column Charts	105-106
Through the Voice of...	108
Tic-Tac-Toe	109
Ticket to Leave	110

