

Strategies for Rehearsal

“What the Brain Likes”

Talking

- Reciprocal Teaching – A/B Teams summarize, generate and/or answer questions
- Tag Along – group members take turns stating key points and ideas
- Structured group work with individual and group accountability
- Storytelling - personal stories from the teacher and/or the student
- Putting significant historical events into story form
- The whole class reads/recites out loud for short periods of time

Simulations and Role Playing

- Please refer to the “Examples of Brain Compatible Teaching Strategies” section of handout

Positive Connections

To the material:

- Provide students with tailored learning choices
- Ask students to find three ways that the material relates to their own lives
- Students generate questions in advance of learning a topic
- Find out what the students want, and then make connections with what you need to teach them

To the teacher:

- Teacher shares personal anecdotes
- Teacher greets students at the door each day – shakes hands or says hello to each student
- Teacher makes eye contact with all students before starting the lesson
- End of unit written surveys include a question such as: “Is there anything you’d like me know about you, as it relates to this class, our school, or anything at all?”
- Teacher listens to her students

To the classroom:

- A section of a wall is called a “memory wall,” where highlights of the year are displayed
- A section of a wall is a students’ wall, where each student can bring in a personal item, picture, poem, to display
- Student work is displayed, and students have a hand in creating the displays
- There are personal touches in the room, such as plants, pets, photos, etc., that both teacher and students have a hand in setting up and maintaining.

Rhythm, Rhyme, Music and Rap

- Singing songs – students rewrite the lyrics to pop songs with content
- The class creates a song that names all fifty states
- Students make up content-based rhymes – “Learning the number line is easy and fun. Just start with zero – it’s shaped like a hamburger bun.”

Projects and Problem-Based Learning

- Please refer to the “Examples of Brain Compatible Teaching Strategies” section of handout.

Metaphor, Analogy, Simile

- “The _____ is like a _____ (household object) because...”
- Comparing the planning of D-Day to planning a surprise birthday party for a friend
- “Photosynthesis is like a lawnmower because...”
- The letter ‘b’ is like what object you’d find in your refrigerator?”
- The Tsar is like what fruit or vegetable and why?

Visuals, Graphic Organizers

- Drawing
- Diagrams: Venn, Hierarchy, cause-effect, characteristics wheel
- Collage
- Sculptures and models
- Student generated video
- Using pictures to generate story ideas, introduce a unit, provide closure.

Writing

- Reflection Journals
- Free-form writing
- Students write to their favorite cartoon character
- Students write to a student at a much lower grade level
- NoteTaking/NoteMaking: The left side of the paper is objective notes, the right side is questions, analogies, conclusions, pictures, etc. Can be used in a similar fashion as reflection journals.
- Students write summaries at the end of each week of what they did and learned in class that week. Some research suggests that this can be quite effective in raising test scores.

Meta-Cognition, Making Connections, Seeing the Big Picture

- Units start with concrete connections, global pictures, and road maps for the journey
- Lessons and units start by connecting to previous lessons and units
- Lessons and units end by touching on key points covered and looking to the next step
- Thematic instruction across the curriculum
- Students teach each other
- Clustering mind map
- Class and individual brainstorm
- Pre-expose students to a unit days or even weeks before you teach it (sneak previews)
- Students address the questions “what?,” “so what?” and “now what?”
- During motor learning, students talk with a partner about what they are doing while they do it
- Students take notes about how they are reading and discuss the process as well as the content

A Balance of Novelty and Routine

- Celebrations after student accomplishments
- Question of the day on the board, generated by either you or the students
- Classroom rituals
- Change where in the room you teach from, where students sit
- Use field trips, guest speakers, etc.
- Celebrate student birthdays
- Rotate student jobs in the classroom

Mnemonics

- Alliteration (“Reciprocal teaching really raises retention;” “Modeling, motivation, and movement maximize memory;” “Brain facts beget brilliance.”)
- “‘i’ before ‘e’ except after ‘c’,”
- “Thirty days have September, ...”

Physical Movement

- Non-competitive musical chairs. The person left in the middle without a chair picks the next criteria (get up and change seats if you are wearing green, e.g.).
- Ball or Frisbee toss with continuing a story, reciting math facts, brainstorming, saying one thing that’s been learned.
- Cross-laterals – march in place and touch right hand to left knee and then left hand to right knee (or give yourself a pat on the back on the opposite side). This gets blood to the brain and activates both the right and left hemispheres of the brain.
- Students march in place while sitting.
- Touch and Go: students touch something in the room that’s gold, that’s soft, that’s leather. Or they touch a right angle, rectangle, cylinder. Or items that cost a certain amount.
- Human knot. Students in groups of about eight face each other in a circle and grab random hands, so that every hand is attached to another. Then without letting go, they “unwind” into a circle.
- Triangle tag – three people hold hands and make a triangle. The fourth stands outside and tries to tag the back of whoever is “it.”
- Action thermometer. Go to this side of the room if you agree, that side if you disagree. This side for rap, the other side for pop. This corner if the historical figure you were assigned is from politics, that corner from art. This corner if your object is metal, that corner if it’s wood.
- Teacher (or a student) periodically directs students to take a deep breath and big exhale.

Examples of Brain Compatible Teaching Strategies

The strategies below are loosely categorized by content, but many can be used for almost any content area. Each strategy works best with a debriefing period at the end, where students can reflect (through writing, talking, thinking, drawing) on what they did, what they learned, and “big picture” implications.

Math

Road maps for Algebra

Using a road map of their local city, students use the X and Y axis of latitude and longitude to locate their favorite places, create or solve a treasure hunt.

Algebra Walk

A large xy axis is drawn on the parking lot, field, or multi-purpose room, with integers at least 24 inches apart. Students then become the appropriate points on the axis, according to instructions from the teacher.
-MCTP, Australia-

Number Line Walk

Students take their places on a large number line, and move forwards or backwards, depending on the equation that the teacher provides. -Pamela Bird Cremen in [The Arithmetic Teacher](#), 3/93

Recipes for Math

Students are given recipes and asked to change the number of servings.

Arithmetic Mean

In order to teach the concept, students determine mean averages by exchanging items until each has the same number. Items can be blocks or M&Ms that represent the numbers in the math problem that the teacher provides. -Theodor and Patricia Korithoski in [The Arithmetic Teacher](#), March 1993-

Math Walk

Take kids on a math walk, where they discover and use math all around the classroom and school campus. Student teams can design math treasure hunts, where they create a map of part of the campus that guides the user into doing related math problems along the way (measure the height of the cafeteria roof in feet, add this to the number of student desks that can fit inside of the infield; use shadow ratios to measure the height of the backstop in feet; figure out how many feet of boards were needed to make the bleachers, etc.).

Social Studies / English / Foreign Language / ELD

Interview with Historical Figures

This can be a presentation, a writing assignment, video, class “tea party,” or a game where class members try to guess who the historical figures are. The figures can be from any subject area, and can be fictional. Variation: Students get taped to their backs a name of a person or event that is being studied. They walk around asking yes or no questions of others to find out who they are.

Supreme Court Cases

The class reads summaries of famous cases. Each student “rules” in favor of one side or the other. Students then try to change each other’s minds (Houghton Mifflin has a book called *Great Cases of the Supreme Court* written at a middle school reading level).

Picture Personification

Students become a person in a picture and write or speak a journal entry, letter or story, as if that person were doing the writing or speaking. This works effectively in creative writing, drama, as well as in history classes. Alternative: students “become” people in a slide that's projected on the wall, and they act out who they are and how they feel.

Experiencing the Assembly Line

This can be done with drawing a picture of a person, where each person in the line has a different body part to draw. It can also be done with the manufacture of paper airplanes. The teacher simulates the role of taskmaster, pushing the students to produce in an efficient manner. –History Alive, Developed by TCI-

McCarthyism

Each student gets a piece of paper that is either blank or has a dot on it. The papers are kept secret. The goal is for the “non-dot” students to form a large group. Students determine the “truth” through questioning and suspicion. Within minutes the classroom is filled with fear of dots and paranoia about being associated with them -History Alive, Developed by TCI-

Biographies/Obituaries

Any famous person or person in your class can be the subject. As a newspaper piece, it can include a summary of the person’s life, an inset of key highlights, opinion articles from others, poems and/or drawings.

Debates

Any issue that has two sides, whether it’s a national, moral, or school issue, can be debated by students. It’s often valuable to have students debate the opposite side of what they truly believe. Variation: Have students role play actual or fictional historical debates, such as “to split the union in to two countries,” or “the trial of king George III,” or “the murder trial of George” in *Of Mice and Men*. Variation: Pause your lesson and have students argue two sides of an argument related to the lesson, then switch (60 secs each).

Social Studies / English / Foreign Language / ELD (continued)

Punctuation Role Play

Students have a structured conversation, and physically act out each punctuation mark as they speak (curved hand at the side equals a comma, hands on head equals quotation marks, e.g.) –Ramona Smith-

Contraction Kid

Students stand in front of the class holding cards with letters that spell out the word or words to be contracted. A different student comes forward holding the apostrophe card, and taps the appropriate student on the shoulder and replaces her.

Compound Words / Prefixes and Suffixes

Each student receives a large card with a short word on it. He or she then looks to join another to form a compound word. The words can be real or made up, with made up definitions. This can also be done with prefixes, suffixes, and word roots - or Latin or Greek roots.

Vocabulary Hide-the-Word

Students write a paragraph where the last word of the last sentence is one of their vocabulary words. They take turns reading their paragraphs out loud. When they get to the last word, they say “blank.” Other students try to guess the right word. Options: students can use several vocabulary words in their paragraph, saying “blank” only for the last one. Student guessers can be allowed to look at their vocabulary lists initially, but then try guessing without the list as the game continues.

Literature Simulation

Students play the parts of the characters they are studying. They act out scenes that are not in the book. *Variation:* Students act out a relatively typical scene in their lives that can be related to what the characters in the book will go through.

Concept Skits

Small groups of students prepare and perform a short skit that demonstrates a concept or vocabulary word that is being studied. *Examples:* "Anger Management," "Democracy," "Appeasement," "The differences between loyalty and honesty," "Appropriate playground behavior," etc.

Muffin Mania

Fourth Grade students in Massachusetts successfully lobbied the legislature to make the corn muffin the official state muffin. -Jay Sugarman, Brookline, Mass-

Water Conservation

Eighth grade students in Walnut, California researched and drafted a water conservation bill that required use of drought-resistant plants around new state buildings. They then lobbied it through the legislature by writing letters, preparing press kits, appearing on the radio, and testifying in Sacramento. -Alan Kaskvitz, Suzanne Middle School-

Science

Simulation of an Atom

Students “become” either protons, electrons, or neutrons. They simulate an element (this works best on a large field, in order to convey a sense of the relative sizes and distances between the particles). Neutrons make a big ‘0’ with their hands over their heads (neutral), protons make crosses with their arms (positive) and electrons take an Egyptian stance with arms pointing front and back and run about in a haphazard manner. -Alan Fisk-Williams-

Lost Wolf Pup Simulation

Students “become” lost wolf pups who can only rely on their sense of smell to find the rest of the pack. Each receives a cotton ball with a scent (lemon, vanilla, mint, maple, coconut, licorice, cherry, almond, and/or cinnamon, etc.). Without talking, they find their “family” groups by scent, and then sit with their groups for the next assignment. -Learning about Learning GEMS Guide, Lawrence Hall of Science-

HIV Spread Simulation

All students but one in the class are given test tubes half filled with water. One student instead receives sodium hydroxide. No one knows who has it. Students are then given a number, which corresponds to the number of sexual partners each one would have over a lifetime. For a few minutes, students “exchange bodily fluids” by mixing their test tubes with their designated number of partners. Then the teacher puts a drop of phenolphthalein in each test tube. Those whose liquid changes color have been exposed to HIV. -Mary Doran-

Potato/Candle Observation

Cut a potato into candlestick shape using the core of the potato (no skin). Sliver an almond to make a thin wick. Take the “candle” to class and light it (the almond) and have the kids write down all their observations- what they see happening- in precise scientific detail. When they are done, blow out the candle and pop it into your mouth and eat it. Then discuss the things they wrote. Kids will write things like they saw wax melting and saw a flame (which they didn’t) which leads to a discussion of scientific observation and the problem of making assumptions.

All Subject Areas

Newspapers from History

These can include lead articles, eyewitness accounts, letters to the editor, advertisements, pictures. Newspapers can be used in just about any subject area. *Examples:* “Lusitannia Sinks,” “DNA Discovered,” “Euclid Presents His ‘New Geometry’ to the Greek Mathematics Tribunal,” “Hamlet Deliberates,” “Picasso unveils his ‘Cubist’ Style.”

Vocabulary Partnering

Half the students are given large cards with a vocabulary word. They circulate around the room to find their partner who is holding up the definition.

All Subject Areas (continued)

Vocabulary Lapel Pins

Students are each given a lapel pin to wear all day (or during a class “tea party.”) The pin says “ask me what a hexagon is” or “ask me what ‘irony’ means.” By repeating the answer to passersby, they will tend to remember it.

Travel Brochures

Social Studies - Students research and design travel brochures, including trips with realistic itineraries and tourist highlights, country backgrounds, and currency exchange. They can make brochures for different parts of the school or community where they live. Science - they can create travel brochures for different planets, celestial bodies, or parts of the body. English – they can make brochures for places in a story

TV Commercials

Students work in teams to make a commercial about the material and act it out. This can be a long term project or a five minute brainstorm. Option: videotape it and show it back to the class. Variation: a magazine ad or poster instead.

Sales Pitches

Students “sell” an aspect of what they are studying: an element of the periodic table; a planet; a shape; a historical figure; a character in a novel or story; which current event should be the top story; why integers are more “cool” than irrational numbers. Sales can be one sentence slogans or whole projects.

Storyboards/Timeline Chronology

Students are given large cards representing either part of a story, an historical event, or a process, such as long division or the cycle of water. They try to put them in order by lining up correctly. Variation: they line up randomly, and try to tell the story in the new sequence.

Silent Movies

Students watch a short section of a video *with the sound off*. They then discuss what they think is being said before watching it again with sound. The speculation helps them retain what they are viewing, helps their critical thinking skills, and captures their attention.

Rubrics

Give students a say in designing rubrics for grading assignments and projects. Use rubrics for teaching behavior and procedure as well as content. Examples of visual rubrics for procedures: lining up, forming groups, cleaning up, setting up labs, choosing teams.

Tests

Before tests, focus with the students on test-taking strategies, as well as relaxation strategies. During tests, have questions or “pop-up boxes” that remind the students to relax and breathe, as well as coach them on how to go about pacing themselves and taking educated guesses.

Brain Education

Talk to your students about how the brain works. Explain why you have them do some of the things that they do in class.