

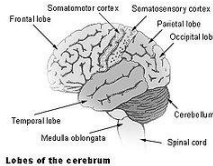


Singing Science - The Musical Connection to STEAM

Children learn best through movement and 'doing'.

Music uses more regions of the brain than any other activity, thus involving the whole brain in the learning process.

It only makes sense to use music to aid memory/retention of important facts / concepts. This can be done through activities that include:



- *Music (songs, rhythm activities); or
- *Movement (dance, drama, game).



BRAIN FACT Moving activates muscle memory, which is helpful for students who can only learn by moving. Hannaford, 2005

We're Balls of Energy

- *We are all made of energy.
- *Our brains are electrical. They run on water and oxygen.
- *gets children up and moving and then slows them back down.
- *Teaches control of energy level and volume of voice.
- *Bouncing - reinforces steady beat needed for reading proficiency
- *Spinning - strengthens the vestibular system
- *Swaying - works on balancing
- *Sequences forward and then backward

The words are: Energy, Energy. We're balls of energy. (loud and then soft)

There are five strands of science:

Physical Science
Life Science
Earth Science
Inquiry Science
Personal / Social Science

Vestibular system must be activated to learn

Music and movement get both hemispheres of the brain involved with the learning process, thus enhancing retention. This can be done through activities that include music (songs, rhythm activities) or movement (dance, drama, game).

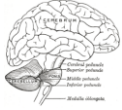


All areas of science use all areas of curriculum to include math and language.

INQUIRY

What's the Tool? (Celebrate Science - School Specialty)

Use a visual for each tool



BRAIN FACT

Music creates a positive state for learning because it helps to reduce stress levels, heighten attention, enhance concentration, reinforce memory and stimulate motivation. Campbell, 1997; Jensen, 2000

Howard Gardner says :

"The single most important thing in education is for each person to find at least one thing that he or she connects to, gets excited by, feels motivated to spend more time with."

He sites music as the first of the multiple intelligences to awaken in a person



Nearly 100% of past winners in the prestigious Siemens Westinghouse Competition in math, science, and technology (for high school students) play one or more musical instruments. The Midland Chemist 05

Inquiry Science

Tell Me The Word (Mr. Froggy's Friends' ABCs / Sky Glove)

- *Children hear rhyme. Makes brain have pattern to follow for answer
- *Must identify things in the sky

What's Up in the Sky? (Start Each Day / Sky Glove)

- *Knowledge of what is in sky
- *Basic vocabulary
- *Have children discuss what else is in sky

Four Seasons (Start Each Day with a Song)

- *Awareness that seasons change and what they are

A Rain Dance (Having a Ball with Music)

- *Children act out the motions in a rain storm
- *Good movement for rainy day

Personal/Social

Smart Woman



BRAIN FACT When children act out stories, they are reviewing the organization of the story and putting things in sequence. This is a science process skill. Epstein & Trimis 02

Wide-mouthed Bullfrog (WMBF)

book by Keith Faulkner

- *Children love this story. If you don't have book, use pictures or puppets.
- *Stay in one place or you become a moving target that is hard to follow.
- *Prediction - Cycles of life - what animals eat - BRAGGING!!!!



I Know a Smart Woman (Hear Me Sing; Watch Me Dance/School Specialty)

- *Uses tune of "I Know An Old Lady Who Swallowed a Fly"
- * Takes a different twist as the 'smart woman' eats from her food groups.
- *Have a food pyramid up front with the children each receiving a food.
 - ^ When their food is sung, they come up and place it on pyramid.
- *Everyone joins in on "She's a healthy woman!"

Extensions:

Graphing and Sorting

Personal preferences

Multicultural - different families eat different ways

Smart Woman Merengue (Mr. Froggy's Fitness Fun)

- *Each child gets a food to feed the woman
- *After each food group, there is a movement

Dance For the Food Groups (A Musical MARathon)

- *Review food groups
- *Each group has its own dance
- *Children hear all groups and then must remember from sound and do dan



The arts make better math and science students, enhance spatial intelligence in newborns, and are a compelling solution to teen violence. Michael Greene, Recording Academy Pres/CEO 42nd Annual Grammy Awards, Feb 2000

Life Science

Caterpillar (More Music with Mar./Bk + 4) metamorphosis

Can have children bring in socks (remind parents to Wash Them First!)

On one side, put wings and antennae; on the other legs. Have children pull sock off into reverse position to show the change from caterpillar to butterfly.

It's Alive / Non-living (Music Makes it Memorable)

Song helps to review the basic characteristics of living / non-living.

- *Make it playful.
- *Can have list up on board and words.
- *Children place words into the proper category.

Living things breath; living things grow
Living things reproduce; don't you know?
If none of that happens, it's just a thing.
It's not alive - it's non-living!

Scales, Feathers or Fur (A Musical MARathon)

- *Children hear different animals sing and guess what group

Habitat Scat (Music Makes it Memorable)

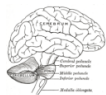
- *Scatting is a style used in Jazz; Scatting plays with syllables and sounds
 - ^good for language; drills on rhyming
 - ^It's silly

Have pictures of Habitats up front

Have children put animal into its proper habitat

Who's in the Barnyard? (Mr. Froggy's Friends' ABCs/Barn Glove)

- *Use glove to bring animals out as children identify them
- *Give sound of animal as clue; children feel successful



BRAIN FACT

Although test scores of use of music and no music may exhibit equal results, when memory of knowledge is compared later on, the students who learned through music and movement had better retention. (Altenmuller et al 1999).

What Animal's Missing?

- *Sequencing
- *What is missing from sequence?

Visuals and labeling are excellent for children learning a new language.



PIG



DUCK



COW



HORSE



GOAT

Some Animals (Celebrate Science - School Specialty)

- *Identifies different animal characteristics
- *Children can add their own



In a 2000 Gallup Poll, seventy-five (75) percent of respondents believe music helps students do better in other subjects, such as math and science.- Gallup Poll Shows Strong Support for Putting Music in Every School's Curriculum, Giles Communications, 2000.

Physical Science

The Blending Song (Songs for a Great Day!/Bk + 4)

1. Calypso dancing
2. Science/Art - blending of colors
 - a. can make color wheels or use overhead projector
 - b. can have cooking project - make instant pudding with food coloring

Can You Predict It? (Music Makes It Memorable)

*Children hear an event and must predict outcome

Sounds All Around (Celebrate Science - School Specialty)

Explore four types of sound - voice, everyday (environment), nature, musical

Peanut Butter (Hear Me Sing)

Peanut. Peanut butter (full voice) And, jelly (whisper voices)
First you take the peanuts and you crack 'em. Then you squash them. (Peanut etc)
Then you find some grapes and you pick 'em. Then you smash them. (Peanut etc)
Then you get some bread and you spread 'em. Then you bite it.
(Sing again but as if mouth was full.)

- *Allows children to play with voices
- *Teaches where peanut butter and jelly come from
- *Shows process of the making the sandwich
- *Vocal chord exercise back and forth between whisper and sing

Quotes

Creativity is seeing what everyone else sees, but then thinking a new thought that has never been thought before and expressing it somehow. The difference between scientific creativity and any other kind of creativity, is that no matter how long you wait, no one else will ever compose "Beethoven's Ninth Symphony" except for Beethoven.

Kids are never the problem. They are born scientists. The problem is always the adults. They beat the curiosity out of kids. They outnumber kids. They vote. They wield resources. That's why my public focus is primarily adults. Neill deGrasse Tyson

The poets did well to conjoin music and medicine, in Apollo, because the office of medicine is but to tune the curious harp of man's body and reduce it to harmony. Sir France Bacon

***Banana Slugs have GREAT!!!! Science songs.
Singing Science by Tickle Tune Typhoon***