

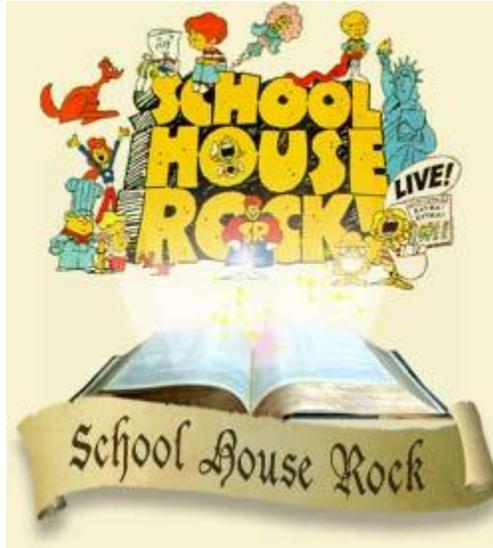


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## A TEACHERS GUIDE TO:



The Emmy Award - winning 1970's pop culture phenomenon comes to the musical stage! The action begins when a young school teacher nervous about his first day of teaching, tries to relax by watching TV. Suddenly the Schoolhouse Rock bunch appear in his home and help him to instruct his students on a variety of subjects including Math, Science, History, Politics and Grammar. Through a series of classic songs like "Unpack Your Adjectives" , "Just A Bill" and "Conjunction Junction" this multimedia treat shows a whole new generation of young people that learning can be as fun as you choose to make it.

*✍ Throughout the study guide, this symbol means that specific Sunshine State Standards are being addressed that directly correlate activities to FCAT testing. As new standards are created and approved by the Florida Department of Education, this may change. The Standards listed here are currently the most up to date. Please visit [www.floridastandards.org](http://www.floridastandards.org) for more information.*

*Due to space limitations it is impossible to list all the standards that apply from grades K-5. Please use the above link to customize this lesson plan for your grade.*

## Synopsis

In the dark we hear the sound of an alarm clock ringing and we are introduced to Tom, a young teacher preparing for his first day of school, standing in his bathrobe. As he rehearses what he will say, he hears the school bell and the sound of the children settling into their desks. One at a time we see Tom's "other sides", as they enter speaking his thoughts. We are introduced to George, the romantic side; Dori, the goofy side; Schulie, the sweet side; Joe, the cool side; and Dina, the mature side. They tell us his thoughts that range from "I love children" to "these monsters are going to eat me alive". Tom decides to try and watch some television while he settles down and collects his thoughts. When he turns on the TV we hear the theme to Schoolhouse Rock. The characters begin to sing one of the familiar songs that Tom instantly recognizes (Verb: That's What's Happening). As the song goes on, Tom is swept up in the excitement and begins to sing and dance with the others. As it ends, he is startled to find himself standing with a group of strange people that he does not recognize. They explain to him that they represent all of the thoughts in his head. They represent everywhere he has been, everyone he has known, and every person that he has ever met (A Noun Is A Person, Place Or Thing). They explain that they are there to help Tom remember that teaching is as easy as 1,2,3 (Three Is A Magic Number).

Still thinking that all of this is a hallucination, he continues to try and get rid of the others. They explain to him that he needs them; and "necessity is the mother of invention" (Mother Necessity). Tom is asked to remember why he wanted to be a teacher in the first place. He remembers that his grandmother and her mother before that were teachers. Teaching was one of the few opportunities for women to work at that time (Sufferin' Till Suffrage). He also remembers working at his grandfather's hardware store as a child and sneaking away on Saturday mornings to watch Schoolhouse Rock (Lolly, Lolly, Lolly). After Schulie and company sing "Unpack Your Adjectives", Tom reminds them that he not only has to teach grammar, but math, science, and social studies as well (Just A Bill / The Preamble). Caught up in the moment, Tom remembers one very important thing; that learning should be fun (Ready Or Not, Here I Come).

When the gang becomes exhausted from all of the excitement, Tom encourages them to stay active and to keep their blood moving (Do The Circulation). Joe then tells the group that he is ready to sing a song and will need the help of you, me, him, them, and her (Rufus Xavier Sarsaparilla). Dori enters with Tom's guitar and hands it to Schulie who says about her playing, "Oh ... on a scale from one to ten, I'd give myself about an eight (Figure Eight). Schulie reminds Tom that "Figure Eight" was the way she had learned her eight multiplication tables. Joe and Shulie enter in their leather jacket and poodle skirt and dance to George's rock and roll physics lesson (A Victim Of Gravity). George and Schulie then join together to sing "Zero, My Hero" while the rest of the gang acts out their duet.

Tom goes over all of the parts of speech that they have covered (adjectives, adverbs, pronouns, nouns, and verbs) and wonders what they have left out. Conjunctions! - and where do they come together - at the junction! (Conjunction Junction). Joe reminds Tom that English will not be the first language of many of his students. School will be a very important transition to America for many of his students, just as America went through an important transition as it struggled to expand and continues to expand (Great American Melting Pot / Elbow Room / Interplanet Janet). Hey! Wow! The thought of going to the moon has the whole group energized, and what kind of word bet expresses that energy - "Interjections". Tom then thanks them all for helping him remember that learning can be fun. As the song ends, all of the characters are gathered around Tom as if he were teaching. "Any questions, kids?", he asks - and on the final beat we see Schulie's hand go in the air.

# THE ACTIVITIES

## BEFORE THE PLAY:

### THE THEATRE IS A SPECIAL TREAT

Let us concentrate for a moment on a vital part of youth theatre: the young people. Millions of youngsters attend plays every season, and for some the experience is not particularly memorable or entertaining. The fault may lie with the production – but often the fault lies in the fact that these youngsters have not been properly briefed on appropriate theatre manners. Going to the theatre is not a casual event such as flipping on the TV set, attending a movie or a sports event. Going to the theatre is a SPECIAL OCCASION, and should be attended as such. In presenting theatre manners to young people we take the liberty of putting the do's and don'ts in verse, and hope that concerned adults will find this a more palatable way of introducing these concepts to youngsters.

### MATINEE MANNERS

By PEGGY SIMON TRAKTMAN

The theatre is no place for lunch,  
Who can hear when you go "crunch?"  
We may wear our nicest clothes  
When we go to theatre shows.  
Do not talk to one another  
(That means friends or even mother)  
When you go to see a show,  
Otherwise you'll never know  
What the play is all about  
And you'll make the actors shout  
Just to make themselves be heard.  
So, be still - don't say a word  
Unless an actor asks you to...  
A thing they rarely ever do.  
A program has a special use  
So do not treat it with abuse!  
Its purpose is to let us know  
Exactly who is in the show  
It also tells us other facts  
Of coming shows and future acts.  
Programs make great souvenirs  
Of fun we've had in bygone years  
Keep your hands upon your lap

But if you like something you clap  
Actors like to hear applause.  
If there is cause for this applause.  
If a scene is bright and sunny,  
And you think something is funny  
Laugh- performers love this laughter  
But be quiet from thereafter.  
Don't kick chairs or pound your feet  
And do not stand up in your seat,  
Never wander to and fro -  
Just sit back and watch the show.  
And when the final curtain falls  
The actors take their "curtain calls"  
That means they curtsy or they bow  
And you applaud, which tells them how  
You liked their work and liked the show.  
Then, when the lights come on, you go  
Back up the aisle and walk - don't run  
Out to the lobby, everyone.  
The theatre is a special treat  
And not a place to talk or eat.  
If you behave the proper way  
You really will enjoy the play.

**CREDITS:** *School House Rock Live is based on the ABC-TV educational animated series which aired from the 1970s -1980s.*

**SCHOOLHOUSE ROCK LIVE!**

*Originally Adapted and Produced for the Stage by Theatre BAM*

*From the Series Created by George Newall and Tom Yohe*

*Based on an Idea by David McCall*

*Book by Scott Ferguson, George Keating and Kyle Hall*

*Music and Lyrics by Lynn Ahrens, Bob Dorough, Dave Frishberg, Kathy*

*Mandry, George Newall and Tom Yohe*

*Schoolhouse Rock Live!*

*Is presented through special arrangement with Music Theatre International (MTI).  
New York, New York.*

**BEFORE THE PLAY: READING/LANGUAGE ARTS**

1. Play some of the original animated songs from the School House Rock series for your students. Explain to them that the version they will see live on stage will not be exactly like the one they watch on TV. How have the authors created a story tying the songs together?

 **TH.C.1.1.2 (PreK-2) The student understands how we learn about ourselves, our relationships and our environment through forms of theater (e.g., film, television, plays, and electronic media)**

 **TH.E.1.2.2 (3-5) The student understands the artistic characteristics of various media and the advantages and disadvantages of telling stories through those artistic media.**

 **LA.A.2.2.7 (3-5) The student recognizes the use of comparison and contrast in a text**

2. Ask your students to discuss the difference between television and live theatre. It is important that they know about “theatre etiquette,” or manners. Refer to the poem “Matinee Manners” listed on the previous page.

 **TH.E.1.2.3 (3-5) The student understands theatre as a social function and theatre etiquette as the responsibility of the audience.**

3. Have the students learn the following **vocabulary words** and listen for them during the play. See how many words they can recall and how the characters used them in the context of the play.

imagination	verb	subject	intense	action	object
flora	fauna	bandit	ferry	tripod	triangle
tricycle	multiply	necessity	invention	adverb	adjective
noun	modify	lair	principles	circulation	arteries
ventricle	atrium	nutrition	gravity	pronoun	infinity
conjunction	junction	phrase	clause	immigrant	ingredient
solar system	galaxy	astronaut	interjection	exclamation	

✍ **LA.A.1.1.3 (PreK-2)** The student uses knowledge of appropriate grade-, age-, and developmental-level vocabulary in reading.

✍ **LA.A.1.2.3 (3-5)** The student uses simple strategies to determine meaning and increase vocabulary for reading including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.

4. The following activity from teachers.net is perfect for School House Rock/Grammar Rock. Be sure and incorporate some of the classic songs like Conjunction Junction, Unpack Your Adjectives, A Noun Is a Person, Place or Thing and Interjections!

✍ **LA.C.1.1.1 (PreK-2)** The student listens for a variety of informational purposes, including curiosity, pleasure, getting directions, performing tasks, solving problems, and following rules.

✍ **LA.C.1.2.5 (3-5)** The student responds to speakers by asking questions, making contributions, and paraphrasing what is said.

Objectives: At the end of this lesson, the students will be able to write sentences hi-lighting different parts of speech. Students will to be able to:

- Apply knowledge of language structure and language conventions (i.e. spelling and punctuation) to discuss and write sentences using different parts of speech.
- Listen, read, and write for information and understanding.
- Listen, speak and write for social interaction.
- Be knowledgeable about and make use of the materials and resources available for participation in the arts in various roles.

Materials:

- Dictionary for each table group
- Thesaurus for each table group
- Movie-“School House Rock: Grammar Rock”
- Film Strip packet- one for each student
- Scissors- one pair for each student

- Crayons, markers, or colored pencils- one box for each student
- Stapler- one for each table group
- Chart Paper
- Teacher markers
- Movie sheet

#### Anticipatory Set:

- The class will sit on the rug and watch “School House Rock- Grammar Rock”. The students will be told that they should take notes on the different parts of speech for an activity they will be doing later on that day (see attached).
- The teacher will hang chart paper in different parts of the room. The teacher will ask the students to recall (raise their hand and wait to be called on) the definitions of the following words: noun, adjective, adverb, verb, preposition, conjunction, article, and an interjection. On each piece of chart paper the teacher will list the word and its definition (the one the student gave).
- Next the teacher will divide the class into 8 equal groups. The teacher will model how to go to the station their group number represents. (Each piece of chart paper with a definition and part of speech is a station) Once your group is at your station you will have 2 minutes to write down, with a marker, as many words as you can that should be included in that category (part of speech).
- After the two minutes are up each group will go back to their desks for a class discussion. They will discuss each sheet and which words fit into that category and which words do not. The teacher will also ask for more examples if needed.

#### Procedure/Independent Practice:

- The teacher will explain they are going to make a paper film strip (to review the parts of speech).
- The teacher will model how to put the film strip together (stapling it, cutting it, etc). She/he will explain if they do not follow the direction, their filmstrip will not look the same as the model.
- Each student will be asked to label the front page (8 individual boxes) with the parts of speech (noun, adjective, adverb, verb, preposition, conjunction, article, and an interjection).
- Along with the title (the parts of speech) they will also have to draw a picture. The picture should represent the sentence they will be writing on the second page (under the flap). Each sentence, under the first flap, should have an underlined word that represents that part of speech that is labeled on the front page of the flap.
- On the front flap they should also list a brief definition of the part of speech and an example. The example should be the word that you will be using on the next page in your sentences (i.e. “tall” for an adjective).
- The teacher will show a model of a completed filmstrip that they can look at if they are not sure what is expected of them.
- The teacher will explain that the students will be graded on their spelling, punctuation, correct use of the underlined word, neatness, and effort.

#### Guided Practice:

- The teacher will circulate and provide assistance as the students put together their film strips and start to write their sentences.
- The class will have 20 minutes to work on their film strip. At the end of the allotted time, the teacher will ask for volunteers to show and explain one of their boxes of their film strip. The teacher will write the answer on the board.

Closure:

- The teacher will close the lesson by reviewing the parts of speech (vocabulary) they had learned that day and answer any questions they may still have about the film strip.

Assignment/Homework:

- Students should complete their film strip and hand-it in the next morning to be graded.

Assessment:

Students will be assessed on their ability to:

- Demonstrate their understanding of parts of speech taught by active participation in their group activity.
- Complete the class/homework activity correctly.
- Corrections will be made as needed (on the filmstrips), in order to hang them on the bulletin board outside the classroom.

Name \_\_\_\_\_

“School House Rock- Grammar Rock”

Write a definition for each word.

1. Noun-
2. Adjective-
3. Article-
4. Preposition-
5. Verb-
6. Adverb-
7. Conjunction-
8. Interjection-

## AFTER THE PLAY:

1. Ask your students to write letters, or draw pictures, to send to the cast of School House Rock. What did they like about the play? Who was their favorite character? What did they learn from the story and songs?

 **LA.B.1.1. 2 (PreK-2)** The student drafts and revises simple sentences and passages, stories, letters and simple explanations that: express ideas clearly; show an awareness of topic and audience; have a beginning, middle and ending; effectively use common words; have supporting detail; and are in legible printing.

 **LA.B.1.2.3 (3-5)** The student produces final documents that have been edited for: correct spelling; correct use of punctuation, including commas in series, dates, and addresses, and beginning and ending quotation marks; correct capitalization of proper nouns; correct paragraph indentation; correct usage of subject/verb agreement, verb and noun forms, and sentence structure; and correct formatting according to instructions.

## AFTER THE PLAY; SOCIAL STUDIES/ HISTORY:

1. Have your students pick one of the historical figures/inventions listed below that are mentioned in the show, and write a 2-3 sentence explanation of who they are and why they were important to our country. This is perfect for a quick internet research exercise.

### HISTORICAL FIGURES/INVENTIONS

cotton gin	Thomas Edison	Samuel Morse	sewing machine	Henry Ford
The Beatles	The Monkees	Chubby Checker	Wright Brothers	Susan B. Anthony
Julia Howe	Lucretia Mott	Robert Fulton	Marconi	Betsy Ross

 SS.5.A.1.2: Utilize timelines to identify and discuss American History time periods.

Depth of Knowledge: N/A    Date Adopted or Revised: 12/08

2. Discuss one of the general topics listed below and how it affects each of us as a citizen of The United States. These subjects are all brought up in the show.

Constitution	preamble	liberty	melting pot	19 <sup>th</sup> amendment
Immigration	Louisiana Territory (Lewis & Clark)		manifest destiny	
Congress	House of Representatives	Senate	Capitol Hill	White House

SS.3.C.1.1: Explain the purpose and need for government.

Depth of Knowledge: N/A Date Adopted or Revised: 12/08

SS.3.C.1.2: Describe how government gains its power from the people.

Depth of Knowledge: N/A Date Adopted or Revised: 12/08

SS.3.C.1.3: Explain how government was established through a written Constitution.

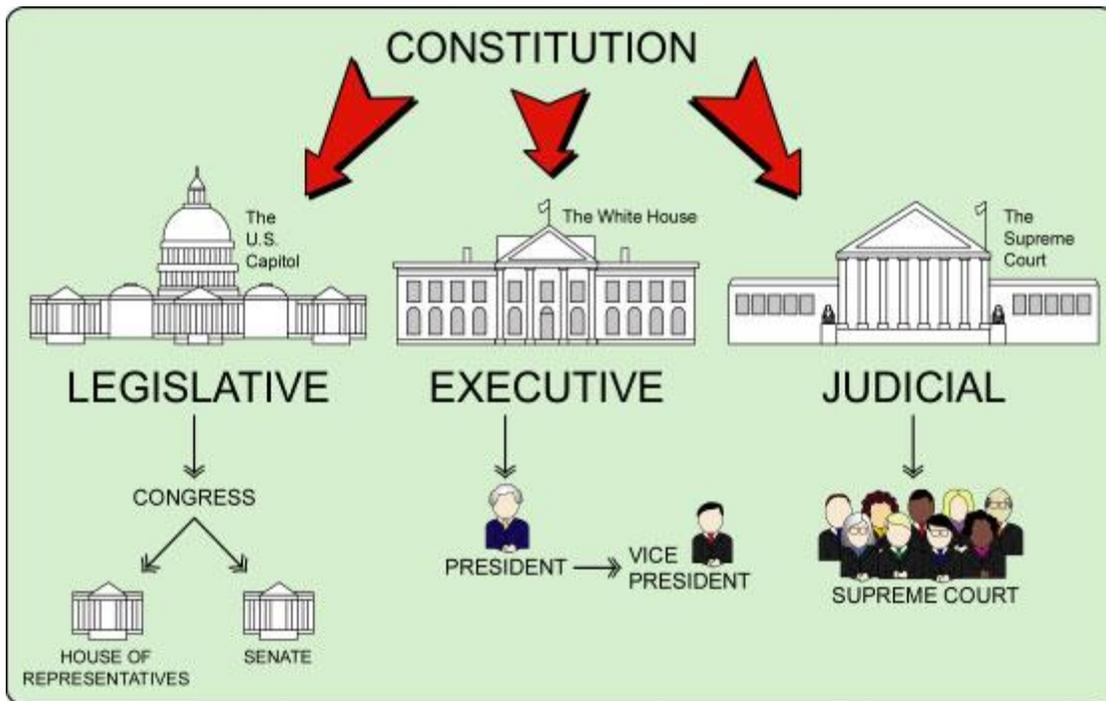
Depth of Knowledge: N/A Date Adopted or Revised: 12/08

3. One of the most popular segments of the show is when “Bill” takes us on a journey of how an actual bill is introduced to Congress. The audience gets to experience the rigorous process that it takes to become a law in the U.S. government. Review the following branches of our federal government with your students. Discuss our forefathers and the framers of The Constitution. Imagine the amazing foresight these great Americans must have had to create a document that has stood the test of time and is arguably the best government ever created.

SS.3.C.3.1: Identify the levels of government (local, state, federal).

Depth of Knowledge: N/A Date Adopted or Revised: 12/08

# Branches of Government



The [Founding Fathers](#), the framers of the [Constitution](#), wanted to form a government that did not allow one person to have too much authority or control. While under the rule of the British king they learned that this could be a bad system. Yet government under the [Articles of Confederation](#) taught them that there was a need for a strong centralized government.

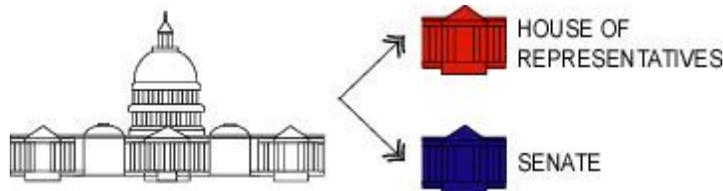
With this in mind the framers wrote the Constitution to provide for a [separation of powers](#), or three separate branches of government. Each has its own responsibilities and at the same time they work together to make the country run smoothly and to assure that the rights of citizens are not ignored or disallowed. This is done through [checks and balances](#). A branch may use its powers to check the powers of the other two in order to maintain a balance of power among the three branches of government.

The three branches of the U.S. Government are the legislative, executive, and judicial. A complete diagram of the branches of the U.S. Government may be found in the [U.S. Government Manual](#) (PDF).

## Legislative Branch

The legislative branch of government is made up of the Congress and government agencies, such as the Government Printing Office and Library of Congress, that provide assistance to and support services for the Congress. Article I of the [Constitution](#) established this branch and gave Congress the power to make laws. Congress has two parts, the House of Representatives and the Senate.

## The U.S. Congress



The U.S. Congress is made up of two parts, the House of Representatives and the Senate. Congress meets at the U.S. Capitol in Washington, D.C. Its primary duty is to write, debate, and pass bills, which are then passed on to the President for approval.

### Other Powers of Congress

- Makes laws controlling trade between states and between the United States and other countries.

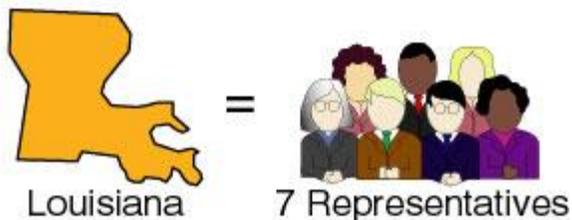
- Makes laws about taxes and borrowing money.
- Approves the making of money.
- Can declare war on other countries.

Each Congress lasts for two years. When the two years are over, new Members of Congress are elected. We are currently in the 110th Congress. Congress meets once every year and usually last from January 3rd to July 31st, but in special cases, it can last longer.

The way that states are represented in the House and the Senate is different. Why is this? Well, when the Founding Fathers were drafting the Constitution, there were debates over how states would be represented. States with larger populations wanted more representation than states with smaller populations. Meanwhile, states with smaller populations favored equal representation. So, a compromise was made -- Representation in the Senate would be equal, while representation in the House would be based on population.

## The House of Representatives

In the House, representation is based on the number of people living in each state. There are a total of 435 representatives in the House. Each member represents an area of the state, known as a congressional district. The number of representatives is based on the number of districts in a state. Therefore, states with larger populations have more representation than states with smaller populations. Each state has at least one congressional district and therefore one representative in the House.



### Representatives must:

- Be at least 25 years old.
- Be a U.S. citizen for the past 7 years.
- Live in the state they represent.

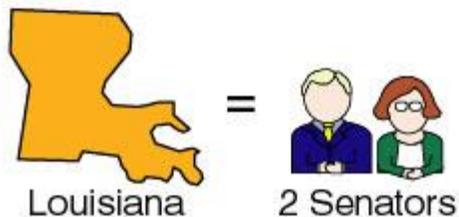
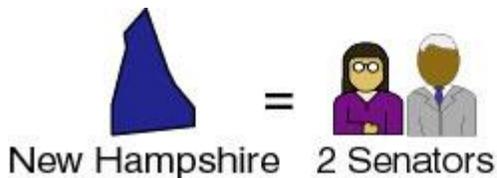
Each representative serves a term of 2 years. When the term is over, people from that state may choose to elect a new representative or keep the same one. There is no limit on the number of terms a representative can serve.

**The House has special jobs that only it can do. It can:**

- Start laws that make people pay taxes.
- Decide if a government official should be put on trial before the Senate if s/he commits a crime against the country.

## The Senate

Each of the 50 states sends 2 people to the Senate, so there are a total of 100 senators. This means that each state has equal representation in the Senate. Each senator serves a term of 6 years. When their 6 year term is over, the people from that state may choose to elect a new senator or keep the same one. There is no limit on the number of terms a senator can serve.



**Senators must:**

- Be at least 30 years old.
- Be a U.S. citizen for the past 9 years.
- Live in the state they represent.

**The Senate has special jobs that only it can do. It can:**

- Say yes or no to any treaties the president makes.
- Say yes or no to any people the president recommends for jobs, such as cabinet officers, Supreme Court justices, and ambassadors.
- Can hold a trial for a government official who does something very wrong.

**MATHEMATICS:**

1. Refer to the song Three Is a Magic Number from the play. Use the following exercise to learn multiples of three.

✍ MA.1.A.1.1: Model addition and subtraction situations using the concepts of "part-whole," "adding to," "taking away from," "comparing," and missing addend."  
Depth of Knowledge: Moderate    Date Adopted or Revised: 09/07

✍ MA.2.A.4.1: Extend number patterns to build a foundation for understanding multiples and factors – for example, skip counting by 2's, 5's, 10's.  
Depth of Knowledge: Moderate    Date Adopted or Revised: 09/07

## ***Multiplying by 3***

**Jennifer Catlett**  
**Bay District Schools**

### **Description**

The students practice the multiples of three as an introduction to multiplying by three.

### **Standards**

#### **Florida Sunshine State Standards**

✍ MA.A.3.2.1

The student understands and explains the effects of addition, subtraction, and multiplication on whole numbers, decimals, and fractions, including mixed numbers, and the effects of division on whole numbers, including the inverse relationship of multiplication and division.

✍ MA.D.1.2.1

The student describes a wide variety of patterns and relationships through models, such as manipulatives, tables, graphs, rules using algebraic symbols.

#### **Florida Process Standards**

##### **Effective Communicators**

02 Florida students communicate in English and other languages using information, concepts, prose, symbols, reports, audio and video recordings, speeches, graphic displays, and computer-based programs.

##### **Numeric Problem Solvers**

03 Florida students use numeric operations and concepts to describe, analyze, communicate, synthesize numeric data, and to identify and solve problems.

### **Materials**

- Beacon Student Web Lesson Access
- Number lines (0-30) drawn on 6-8 feet of paper
- Counters
- Paper plates
- Index cards
- Baggies
- Math Journals

## Preparations

Collect and prepare materials to be used. (paper plates, counters, Web School link--3 is the Magic Number-, baggies, pens, index cards, butcher paper (6-8 feet long and draw the number line 0-30 on it), Math Journals

Task cards for centers if necessary

## Procedures

1. Count by 1s, 2s, and 3s around the room.
2. Add.  $3+3$ ;  $3+3+3$ ;  $3+3+3+3$ ;  $3+3+3+3+3$ .
3. Model any number that is a multiple of 3 using counters and circles on the overhead, and show a multiplication problem.

Example:  $24=3 \times 8$ ; Draw 3 circles and place 8 counters in each circle.

### Group Work:

Divide the students into groups of four or five for centers. Try to rotate the groups every 10-15 minutes.

Center #1 Beacon Interactive Web Lesson: 3 is the Magic Number

Center #2 Give the group paper plates and counters. Using multiples of three, come up with as many multiplication problems as possible. Make sure that one student is the recorder.

Center #3 Have students make their 3s multiplication facts for their personal multiplication baggy book. Teacher assistance is required. Note: Use index cards and plastic baggies.

Center #4 Numberline activity.

Materials: counters, number line(0-30) drawn on 6-8 feet paper.

\* Students use counters to show  $3+3+3$ .

\* Place the numberline on the floor. Students demonstrate skip counting by hopping from 3 to 6 to 9.

\* Students repeat the process to find  $3 \times 4$ ,  $3 \times 7$ , and so on.

\* They use repeated addition to check their products.

Center #5 Math Journals

Students will write the multiplication facts for 3s and check their answers together. They will respond to the prompt -How do you multiply by 3s?-

### Wrap-Up:

1. Have students return to their seats.

2. Discuss what they know about multiplying by three. Review examples of multiplying by 3s

on the board allowing students to generate the answers.

3. Homework: Practice finding multiples of three in the real world. Record findings in journal.

## Assessments

Assess students through

1. observation of students talking about applying how to multiply by three using multiples at station work
2. Completed Math Journal that explains how to multiply by three and how to use multiples of three to check the answers
3. Students' work samples that show application of using multiples to solve problems

## SCIENCE

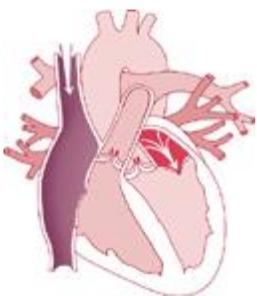
1. In the song Do the Circulation, the cast simulates through singing and dancing how blood flows through the heart and body. Use the charts below to explain this process to your students. Afterward, try the activity at the end of this section that allows the students to act out the process of circulation.

 HE.4.C.1.6: Identify the human body parts and organs that work together to form healthy body systems.

Depth of Knowledge: N/A    Date Adopted or Revised: 12/08    Standard: Comprehend concepts related to health promotion and disease prevention to enhance health.

How does blood flow through the heart?

**The right and left sides of the heart work together**



**Right Side:**

Blood enters the heart through two large veins, the inferior and superior vena cava, emptying oxygen-poor blood from the body into the right atrium.

**Left Side:**

The pulmonary vein empties oxygen-rich blood, from the lungs into the left atrium.

**Atrial contraction:**



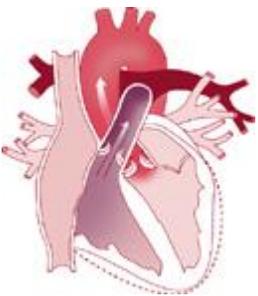
**Right Side:**

Blood flows from your right atrium into your right ventricle through the open tricuspid valve. When the ventricles are full, the tricuspid valve shuts. This prevents blood from flowing backward into the atria while the ventricles contract (squeeze).

**Left Side:**

Blood flows from your left atrium into your left ventricle through the open mitral valve. When the ventricles are full, the mitral valve shuts. This prevents blood from flowing backward into the atria while the ventricles contract (squeeze).

**Ventricular contraction:**



**Right Side:**

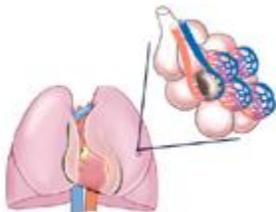
Blood leaves the heart through the pulmonic valve, into the pulmonary artery and to the lungs.

**Left Side:**

Blood leaves the heart through the aortic valve, into the aorta and to the body.

This pattern is repeated, causing blood to flow continuously to the heart, lungs and body.

**How does blood flow through your lungs?**



Oxygen and carbon dioxide travels to and from tiny air sacs in the lungs, through the walls of the capillaries, into the blood.

Once blood travels through the pulmonic valve, it enters your lungs. This is called the pulmonary circulation. From your pulmonic valve, blood travels to the pulmonary artery to tiny capillary vessels in

the lungs. Here, oxygen travels from the tiny air sacs in the lungs, through the walls of the capillaries, into the blood. At the same time, carbon dioxide, a waste product of metabolism, passes from the blood into the air sacs. Carbon dioxide leaves the body when you exhale. Once the blood is purified and oxygenated, it travels back to the left atrium through the pulmonary veins.

## **CIRCULATION ACTIVITY**

Posted by Christina L Dunbar

Materials Required: students, 2 chairs, red and blue object or colored paper

Activity Time: 1 class period- 10 min.each,explain,setup,run

Concepts Taught: teaches heart anatomy, blood circulation concepts

This is a fun way for students to learn how the blood circulates through the heart, while using their bodies, and running around! Set up a heart using students as the walls, atriums, ventricles, and valves. They should hold hands, or touch hands- except the people representing the valves-they will open and close as the "Blood" people pass through. Select 2 students to be the "blood". Set up a chair on each side of the "heart" to represent the lungs-or you could use students. Place a red object or paper at each lung-this represents an oxygen molecule that is picked up by the "blood". The "blood" will travel through the atriums to the ventricles ( you can have the atrium students gently "squeeze" the blood people through the valves- which will open and close their outstretched arms. Show oxygenation of the blood by picking up the red object at the lungs, traveling through the heart, and picking up the blue object to show de-oxygenation and use of oxygen by the body. You might have to take several runs-students will want a chance to be the "blood"! You may want to use a 2 chambered heart for younger students. \*\* Remember blood is never blue-just purple-red - and it doesn't turn red when exposed to air. Have fun!

2. In the 50's sock-hop style song called ***A Victim of Gravity***, the cast has fun with the concept that Galileo knew hundreds of years ago; the power of gravity keeps us all from floating into space. Have your students "google" some of the early scientists that studied the earth's gravity and discuss their findings. How does this information compare to what modern scientists know today?

 SC.K.E.5.1: Explore the Law of Gravity by investigating how objects are pulled toward the ground unless something holds them up.

Depth of Knowledge: Moderate      Date Adopted or Revised: 02/08

3. **Solar system:** School House Rock introduces the solar system by cleverly using a character named ***Interplanet Janet***. As this space explorer travels the galaxies, she explains a little about each planet. How have current scientific discoveries changed our view of the solar system? What about Pluto getting the boot as a planet? Use this opportunity to make the point to your students that even science can change as technical advances help us to get more accurate information about our world.

✍ SC.2.N.1.6: Explain how scientists alone or in groups are always investigating new ways to solve problems.

Depth of Knowledge: Moderate    Date Adopted or Revised: 02/08

✍ SC.5.E.5.2: Recognize the major common characteristics of all planets and compare/contrast the properties of inner and outer planets.

Depth of Knowledge: Moderate    Date Adopted or Revised: 02/08

✍ SC.5.E.5.3: Distinguish among the following objects of the Solar System -- Sun, planets, moons, asteroids, comets -- and identify Earth's position in it.

Depth of Knowledge: High    Date Adopted or Revised: 02/08

## The Art of FCAT

Contributed by Patricia Linder

**✍ Visual and Performing Arts Field Trips provide an excellent source of support for the development of skills necessary for success on the FCAT. We invite you to use these instructional strategies to enhance FCAT preparation through your theatre field trip.**

### Theatre Activities

#### FCAT Cognitive Level 1

Read the story (or play) your field trip performance is based on.

Name the main character.

List all the characters.

Identify the setting.

List the story events in the order they happened.

Describe a character (or setting).

Explain the problem (or conflict) in the story.

Explain how the actors used stage props to tell the story (or develop characterization).

Discuss how the blocking, or positioning of the actors on stage affected the performance.

Discuss how unusual technical elements (light, shadow, sound, etc.) were used in the performance.

Draw a picture of a character.

Illustrate or make a diorama of a scene from the performance.

Draw a poster to advertise the performance.

Work with other students to act out a scene.

Demonstrate how an actor used facial expression to show emotion.

Write a narrative story to summarize the plot of the performance story.

Use a map and/or timeline to locate the setting of the story.

Make a mobile showing events in the story

## **FCAT Cognitive Level II**

Would the main character make a good friend? Write an expository essay explaining why or why not.

Create a graph that records performance data such as: female characters, male characters, animal characters or number of characters in each scene, etc.

Compare/Contrast a character to someone you know or compare/contrast the setting to a different location or time.

Solve a special effects mystery. Use words or pictures to explain how “special effects” (Lighting, smoke, sound effects) were created.

Imagine the story in a different time or place. Design sets or costumes for the new setting.

You’re the director. Plan the performance of a scene in your classroom. Include the cast of characters, staging area, and ideas for costumes, scenery, and props in your plan.

Create a new ending to the story.

Did you enjoy the performance? Write a persuasive essay convincing a friend to go see this production. Write a letter to the production company nominating a performer for a “Best Actor Award.” Explain why your nominee should win the award.

Create a rubric to rate the performance. Decide on criteria for judging: Sets, Costumes, Acting, Lighting, Special Effects, Overall Performance, etc.

## **THE PRODUCER**

**STAGES PRODUCTIONS** is a professional theatre ensemble that specializes in bringing classic fairy tales to over 150,000 young people each year throughout the Southeast.

STAGES' show credits include critically acclaimed performances of: *Mother Goose, Snow White, The Three Little Pigs, Let Freedom Sing* and *The Princess and the Pea*. Be sure to join us for our 27<sup>th</sup> anniversary season featuring; *School House Rock Live!, Santa’s Holiday Revue, Charlotte’s Web, The Adventures of Tom Sawyer and Cinderella*.

STAGES PRODUCTIONS is dedicated to making drama an integral part of education, and lesson plans help incorporate these plays into the student’s curriculum. Thank you for supporting this mission by choosing a STAGES PRODUCTIONS play! [www.stagesproductions.com](http://www.stagesproductions.com)

## **THE REFERENCES**

[www.floridastandards.org](http://www.floridastandards.org)

Traktman, P., Matinee Manners.

Linder, P., The Art of FCAT.

Catlett, Jennifer

Dunbar, Christina

[www.bensguide.gpo.gov](http://www.bensguide.gpo.gov)

[www.teachers.net](http://www.teachers.net)

[www.schoolhouserock.tv](http://www.schoolhouserock.tv)

[www.clevelandclinic.com](http://www.clevelandclinic.com)

[www.mtishows.com](http://www.mtishows.com)