

Adding in Any Order

By Jaime Trauger

Slide 1:

Target Audience- Milton Ave Elementary School, Chatham, NJ
1st grade class, 20 students with mixed ability levels. Two of the students are in a Basic Skills Program that provides extra help. The Basic Skills instructor comes in during the math block to support these two students.
60 minute block

Classroom Environment- safe, nurturing, fun, students know they can take risks, learn from mistakes!

Part of limbic system-Hypothalamus: Because of the safe, comfortable and nurturing environment, the student's bodies are at a normal state of balance. They are now ready to learn. (Sousa, 2005) Amygdala: (uh-mig-duh-la) I try to make my class as fun as it can be. A place where it is alright to make mistakes and take risks. I always remind the students that we can learn from our mistakes. From all of these positive situations I support in my class the students are happy. This emotion will help the students learn and become interested in the lessons I teach.

Slide 2:

Goals and Objectives

Goals-To apply properties of operations as strategies to add and subtract
To understand that two addends may be added in any order and will result in the same sum

Objectives: Students will be able to add in any order
Identify the parts and whole of an addition sentence

Slide 3

Primacy and Recency (Sousa, 2005)

Prime Time 1: At this important time of learning, the class will first review skills from the day before while completing the Daily Common Core page. This will help students connect what they have already learned with what they will learn today. This gives sense to this lesson! It fits into what the learner already knows. We will then move into the Problem-Based Learning activity. This is where the students will be using hands on manipulatives to figure out the problem at hand. How can

you show $2+5$ in another way using cubes? The students are solving the problem themselves with cubes. This gives meaning to this lesson! The students will realize once they know $2+5$ they also know $5+2$. Once sense and meaning are in place for the student the hippocampus can give meaning to this information and can be stored to long term memory. During this time I also model the correct way to solve this problem. Prime Time 1 ends with a short (2 minute) video played on the smartboard that serves as the visual bridge before guided practice begins.

Downtime: This is when the students will be applying what they just learned. We do a few problems together during guided practice. Then the students work independently on problems.

Prime Time 2: This last part of the lesson is when the students complete their math packet with word problems (Problem Solving). These problems are often challenging and open ended. When they are finished they will go into their math centers (math games, netbook games or small group instruction). We end the lesson with an exit slip. The students are asked to go back to their seats and to take out their whiteboards. They have to write two facts that show that they can add in any order.

Slide 4

Evaluation and Assessments

Formative:

Teacher observations during independent practice

Exit slip (Check for Understanding)

Quick check worksheet the following day

Summative: (long term storage)

End of unit test

Cumulative test

Slide 5

Technology

Computer-Where I will be using the Envision online math program and I will also have a document on screen to show what the math centers are for the day.

Smartboard- I use the smartboard for lots of things in my classroom. It is my "chalkboard." Also anything projected from the document camera and computer will be on the smartboard.

Projector- Used to project from the computer and document camera

Document camera- Used during Prime Time 1, while students are using cubes to show their ideas on the smartboard. I also model under the camera and it is projected onto the smartboard.

EnVisions online math program- This math program is heavily based online. It will display the Daily Common Core Review page, students' math page, homework, and visual bridge video.

Netbooks- We have a class set of 8 netbooks. Anywhere between 4-6 students will be playing math games on the computer during math center time.

Whiteboards- Each student has a small whiteboard in their desks. At the end of the lesson, I will ask them to write two addition sentences that show the adding in any order strategy. This is their exit slip.

Overall, I feel that all of these technologies make learning fun. It also keeps the students engaged throughout the 60 minute block. The students love to come up to the smartboard to write, play on netbooks, and show their work to the class using the document camera. When you make learning fun (emotions), the students are more likely to understand and learn what you are teaching. Long term memory is located in the emotional section of the brain! (Sousa, 2005)

Slide 6:

Learning Styles

From the Gregorc Model we learned there are four different learning styles. (Gregorc, 1985)

During this lesson there are activities and instruction that highlight each of the learning styles.

Concrete Sequential- These learners will benefit from our daily math structure and routines. Every day during our 60 minute block we have the same routines. The **stability** of knowing what is expected each day will help the concrete sequential learner. This learner also enjoys guided practice (downtime). This is when we practice a few problems as a class and review expectations and directions.

Abstract Sequential- These learners will work best when completing the independent practice (working alone). They would also enjoy working on finding solutions to word problems on the back page of their math packet.

Concrete Random- The hands on activity at the beginning of the lesson (problem-based learning) with cubes would greatly help these learners. They would also enjoy open ended word problems that are not looking for an exact answer.

Abstract Random- These children are working best during math center time. This is a time when students are working in partners or groups playing math games. If their group that day is called for small group instruction the AR learner will enjoy the one on one attention.

Slide 7:

Multiple Intelligences

This lesson touches on all of Gardner's multiple intelligences. (Gardner, 1983)

Linguistic- In this math program there is many times when students are asked to explain their answer verbally. The linguistic learner would shine during these explanations. Also the linguistic learner would enjoy writing out word problems which is always the last questions on the problem solving page.

Logical/Math- Since this is a math lesson, the logical/math learner would greatly enjoy most and all activities during this lesson. The problem solving section of the students' math page is where there are harder mathematical challenges. The logical/math learner would really appreciate this section. During math centers, a choice of game to play on the netbook is Math Blasters. This is a math fact practice game.

Visual/Spatial- There are many times throughout this lesson where the visual/spatial learner would benefit. This math program is very visual and even has a 2 minute video of a cartoon explaining the lesson. They will be very engaged during this part. This learner will also enjoy drawing part/part/whole diagrams to show their answers.

Music- These students will enjoy the music that is played during the visual bridge movie. Later in this addition unit, we have poems/songs to help remember our math strategies.

Bodily/Kinesthetic-This learner will enjoy the hands on experience during Prime Time 1, when we are using cubes to show addition sentences. They will enjoy moving around during math center time going to different centers. One of these centers is called Dice Sum. The students need to roll the dice, add up the numbers and fill in the graph. All of this movement (rolling the dice, touching the dots to add, and coloring a graph) will help the bodily/kinesthetic learner.

Interpersonal- This learner will enjoy the problem-based learning time during Prime Time 1, where the students work with partners to discuss their answers and solutions. Also if I am meeting with interpersonal learners that day for small group instruction, they will be able to give me feedback about their math problems.

Intrapersonal-These students will enjoy the independent practice section of their math page when they can work on their own. The intrapersonal learner will also enjoy the choice I give to students when working on the problem solving section of their math page. They can work on their own or work with a buddy.

Naturalistic- After this lesson, these learners can apply these math strategies to count/add acorns or plants.

Existential- These learners often look at the big picture. They will see that we are only adding in any order but we are learning the commutative property which can be applied to many different things.

Slide 8:

Brainy Bits

Cerebral Lobes-The following parts of the brain are being stimulated at multiple times throughout this lesson. (Sousa, 2005)

- Frontal Lobe: high order thinking word problems- Using what you have learned and applying them new situations. Having fun when playing math games-emotions
- Temporal Lobe: listening to directions, explaining answers (speech)
- Occipital Lobe: visually processing numbers/symbols that are seen many times throughout the lesson
- Parietal Lobe: calculating answers to math facts, number recognition, using spatial orientation when using cubes

Slide 9:

Brainy Bits II

Sensory Input

Throughout the lesson, the students are constantly taking in information from the environment around them. Using all the senses around them, the sensory register system can determine the importance of the sensory stimuli. The thalamus sorts through all the senses (except smell) and sends messages by neurons to the specific sections of the brain. (Sousa, 2005)

Sight-The students are constantly looking at the smartboard to see their math page, other students showing their work (through the document camera), and to watch a short movie about the lesson (visual bridge).

Touch (kinesthetic) - During Prime Time 1, the students are using cubes to show addition facts. The students also use dice/makers during a math game called, Dice Sum.

Hearing- The students are listening to my directions, and also are listening to their classmates explain their answers.

Slide 10:

References

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