Title: Understanding multiplication and division with fact families

Subject Matter Emphasis and Level: Math - 3rd Grade

Author: Holly Blum

School District: Platte Elementary

Email: holly.blum@k12.sd.us

Brief Description of the Lesson/Unit:

The students will be given three numbers that go with a fact family. The example being 21 - 3 - 7. The students will need to decide what can be done with these three numbers with making multiplication and division sentences. I will pair the students up to work with a buddy - to figure out the number problems. When all of the students have accomplished the task - he/she will teach their problem to the class.

As a whole group assignment the students will play a game called "What's my name" - this will reinforce the facts in a new motivational way. The students will have a nametag with a multiplication fact on it - ex - 6 X 8 = 48 and through the week this will be the child’s name. I will then introduce the centers to have the students explore and learn on their own. He/she will take a look at the "Triangular bonds" with a buddy. The students will work on the multiplication chart with each other to figure out the pattern and see how this tool can help within their fact families. Another group will be working on a computer program - dealing with the facts and families. My other group will be watching a video called RAP multiplication - he/she will be singing along with the video to work on the facts to become automatic.
**SD Content Standards:**

*Students are able to use the relationship between multiplication and division to compute and check results.*
*Students are able to use number patterns and relationships to learn basic facts*

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**Stage 1: Identify Desired Results**

1. **What enduring understandings are desired?**
   - Multiplication and Division go together - fact families
   - The students will also understand numbers and patterns.

2. **What essential questions will guide this unit and focus teaching/learning?**
   - How can multiplication and fact families help one in the real world?
   - Without multiplication how can you build a house?

3. **What key knowledge and skills will students acquire as a result of this unit?**
   - The students understand that multiplication and division go together as a fact family. Multiplication and addition go together to help with understanding the facts and numbers. The students will understand that addition and subtraction coincide like multiplication and division as fact families - patterns.

4. **What prior learning, interests, misconceptions, and conceptual difficulties might be brought to this unit?**
   - Prior knowledge - students will come with an understanding of the subtraction and addition fact families.
   - Conceptual difficulties might be the learning of multiplication and division facts in the higher numbers.
Stage 2: Determine Acceptable Evidence

1. What evidence will show that students understand?
The evidence will come from - kid watching, paper work, games, quizzes, and tests.

   Performance Tasks:
   *Hands on Work unfix cubes, and links
   *Flashcards - fact family cards of multiplication and division put together
   - "Around the World"
   *Game - What's my name for the week. The students will have a multiplication name tag and throughout the week - that is what the students and teacher needs to call them. Example - 7 X 3 = 21. As the teacher or the students he/she needs to be refereed as 21. Each student will have a different number in the classroom. Throughout the weeks - he/she will receive a new name.
   *Game - Howdy Partner Factor!
   *War - card game with multiplication - two people will play the game. Each will have a deck of cards. At the same time, one will flip a card over and say the answer, first one to answer, will get the point.

   Other Evidence:
   Quizzes, tests, prompts, kid watching, paperwork, games, pictures (digital camera)

   Student Self-Assessment -
   *Triangular Number bonds
   *Wrap - ups - self check
   *Numbers Chart

Teacher Assessments
*Test/Quiz
*Kid Watching
*What’s your response? - Response cards - yes/no/?
Stage 3: Plan Learning Experiences and Instruction

1. What sequence of teaching and learning experiences will equip students to develop and demonstrate the desired understandings?

*Step by Step - Order

**Major Learning Activities:**

*Hands - On - Manulatives
*Games - self check

**Materials & Resources (technology & print):**

*Facts in a Flash - (Computer Program)
*Website - www.aplusmath.com
*Video - Multiplication RAP
*Differentiated Instruction - Different Strategies for Different Learners - By - Char Forsten, Jim Grant and Betty Hollas

**Management:**

*Centers
*Journals
-Music - creates a comfortable mood - calmly transitions
-Highlighters - one writes or marks the ones that he/she feel confident with and knows successfully - repeated opportunity to reach proficiency.
-Pep Talks (Example - I am going to pay attention today!)
-Brain Buttons - Enables students to develop an internal support system

**Support Services and Special Teacher Notes:**

*Create an individualized learning plan to ensure the success of struggling learners
*One on One - High School students

**Extensions and Adaptation:**
2. What differentiated instruction strategies are being used in this lesson/unit?

**Differentiated Process:**

- **Time - Management - Multiple Intelligence**
- *CENTERS - One works at his/her own pace*
- *Use of a multiplication chart/flash cards helps to reinforce number-family relationships and helps students feel successful.*

**Multiple Intelligence - Logical/mathematical**

- *What's my name - This concept reinforces math facts in a new, motivational way.*

**Multiple Intelligence - Interpersonal (peer sharing)**

**Multiple Intelligence - Naturalist - Identification**

- *Triangular Number Bonds - this activity can help to reinforce students’ understanding of and skills with, number/fact families.*

**Multiple Intelligence - Visual/Verbal/Bodily Kinesthetic**

Capture Math facts with Captive Dice - The use of these manulatives helps for practicing math facts along with the fact families.

**Multiple Intelligence - Visual**

- Music helps in the category of musical rhymes -
- Create a comfortable mood - calmly transitions

**Differentiated Content:**
*Content - Support Systems/peer buddies
*Smaller Steps
*Lower Number - fact families

**Differentiated Product:**

*Readiness
*Interest
*Learning Profile
*Extensions - Tired Assignments