Title: Think, Pair, Share

Subject Matter Emphasis and Level: Math

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Brief Description of the Lesson/Unit:

This lesson is more of a method on how to differentiate any math lesson in any classroom.

SD Content Standards:

This lesson can be adapted and used with any of the South Dakota math standards.
Stage 1: Identify Desired Results

1. What enduring understandings are desired?
   Students will have a better understanding of the methods behind the math, instead of just memorizing how to solve a problem using an equation or number sentence.

2. What essential questions will guide this unit and focus teaching/learning?
   How do you know?
   Will that always work?
   (Student name), can you explain how (student name) solved that problem?
   What do we already know?
   What do we need to know?
   Where do you think you should start?
   Is there another way to solve this problem?
   Will that always work?

3. What key knowledge and skills will students acquire as a result of this unit?
   Students will gain a better understanding of the concepts behind the math. For example, what the equals (=) sign really means.

4. What prior learning, interests, misconceptions, and conceptual difficulties might be brought to this unit?
   Students will have a hard time working through a problem on their own because they are used to the teacher standing up front and telling them exactly how to do it.

Stage 2: Determine Acceptable Evidence

1. What evidence will show that students understand?
   Performance Tasks:
Students will be able to explain to the teacher or to their classmates what they did to solve their problem. If they are unable to explain it so the rest of the class understands, then I know they aren’t quite sure what they did.

**Other Evidence:**

*Quizzes, Tests, Prompts, Work Samples (summarized):*

Students will be able to solve a story problem using more than one method so when given a test, they aren’t stuck wondering how to solve it. The students will be more apt to at least start trying something instead of just giving up and skipping the problem.

*Unprompted Evidence: (observations, dialogues, etc.)*

As you walk around the room, you will be asking the student you are working with questions about what they did and how they found their answer. This will give you a great understanding of what he/she truly understands.

**Student Self-Assessment**

The students are strongly encouraged to try more than one method to solve the problem. If they come up with two different answers then they know they need to go back and take a look. Also, the students are more apt to check over their work because they might be sharing in front of the whole class and they find their own mistakes just by double checking/

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**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?**

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

Any kind of math manipulatives
- Examples: coins, counters, clocks, Cuisenaire rods, blocks, rulers, number lines, etc.
Story problems based on the standards for your grade level
Overhead transparency or chart paper

**Management:**
You will have to set up group norms and review them over and over the first few days or weeks (depending on the class). Group norms range from students respecting the 3-5 minutes of quiet “think” time to allow all students to try the problem to giving constructive criticism. Instead of saying, “That’s wrong.” Students will learn to say it more politely, “I don’t agree with that because…”

**Extensions and Adaptation:**

This can be adapted to fit any math lesson with any standard that you have at your grade level.

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**Stage 4: Plan Differentiation**

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

**Differentiated Process:**

In the story problem, you give the students a variety of number choices to use. For example, here’s a simple story problem that shows you how I differentiate for the different levels of students in my classroom:

Over on the fence there are (6, 13) birds. A dog barks at them and (3, 5) birds flew away, how many birds are left on the fence?

If the student decided to start with 6 birds in the fence, then he/she knows he/she needs to use 3 also and vice versa.

You can also put up to three numbers in the parenthesis. For example, there are (6, 13, 21) birds and (3, 5, 12) flew away.

The students are given 3-5 minutes (depending on the class and difficulty of the problem) of quiet think time to give the story problem a try. After that, they pair up or are put into small groups (not necessarily grouped by who solved the problem using what numbers but random groups) to share their methods of solving it. As you ask questions and observe, you pick 2-3 students to share to the large group. Have these students put their work on the overhead or chart paper ahead of time to save some time. The students that you chose then share their method with the entire class.
and his/her classmates are able to ask questions if they aren’t sure how he/she solved it. You will be surprised at some of the methods students can come up with!

**Differentiated Content:**

The different numbers in the story problem is where your differentiation plays a big role. The students are pretty good at picking the numbers that they are able to do. If a student solves the first set of numbers (the easiest), I tell them they can go ahead and try the next set of numbers but you have to make sure they can still explain it to you. If they can’t, they don’t understand what they are really doing, they are just putting the numbers in and solving it.

**Differentiated Product:**

Each student is solving the same story problem and the same concept but using numbers that are more manageable for their level. Each student feels a sense of accomplishment without realizing why there are different numbers.