Lesson Plan #8

12's as Factors

Performance Objective: Given the opportunity to work in groups, students will be able to

decompose and solve at least 8 out of 10 multiplication problems correctly with 12 being a factor.

Resources or Materials Needed:

- White board
- Skip counting Power Point Slides-10's and 2's
- Dry erase marker
- 12's worksheet for assessment
- Chromebook

Time: 60 minutes

Step 1: Pre-Instructional Activities:

- As a class, students will be chanting to skip count by 2's, and 10's using a PowerPoint that

  will be shown to the students

    o Chant 2's to the melody of "Skip to my Lou my Darling"

    o Chant 10's to the melody of "Ring Around the Rosies"

Step 2: Content Presentation:

- Utilizing our knowledge from previous lessons we will begin by discussing our 2's

    o How do would we go about solving multiplication sentences that have a factor of 2?

        ▪ Student comments: "Well, remembering with what we did a couple days ago

          with 2's and playing the game "Do the D's", we know that whenever we

          multiply by 2 we just double that number".

    o If we multiply anything by 2, would it be safe to assume that doubling that factor

      would solve our multiplication equation?

        ▪ Student comments: "Yes, because whenever you multiply anything by 2, you

          have to double that number".

- In lesson 4, we discussed ways to solve our multiplication facts that had 10's in it. What was a takeaway that we had from that lesson?
  - Student comments: "One thing that we took away from that lesson was that anything that you multiply by 10, you just add a zero to that factor. For example, 4 x 10 would be 40. We just added a 0 to the 4"
- Today we will be utilizing our strategy of solving our 2's and 10's to solve multiplication equations that have 12 as a factor. On our whiteboards, write down the 5 x 12. (Students will write 5 x 12). Once we have this multiplication equation written down, let's decompose 12. Decomposing is when we break down a number, like what we will be doing with 12. We will now break 12 down as 10 and 2. On our board, we can see that we have 5 x 12 that now looks like 5 x 12 with 10 and 2 written under 12. With this, we can rewrite our multiplication sentence by making 2 new ones. 5 x 2 and 5 x 10. This will make solving 5 x 12 easier than trying to solve it on its own. Solving 5 x 2 we get 10 and solving 5 x 10 we get 50. If we add our products together, we will get 60. So, 5 x 12 is 60. We can easily work this out not only on paper, but also in our heads if we know our 2's and 10's facts. Let's work on doing this strategy of decomposing 12 by multiplying 12 with other factors.
  - Students will practice on whiteboards by decomposing 12 with a series of factors. Factors could include any number between 1-9.

Step 3: Learner Participation:

- At this time, students will continue practicing decomposing 12 with other factors as stated above. Students will get to utilize their group to help each other and to help those who may be struggling.

Step 4: Assessment:

During this time, students will be instructed to do this quiz as an assessment and to try their best at picking the best answer for the equation. With this, students will be able to work with heir group to solve equations. Students are encouraged to talk to one another. They will have 10 questions to work through to which they will need to have 8 out of the 10 correct.

Step 5: Follow-Through Activities:

There will be no follow through activities for this lesson as 12's are not a required standard for students to achieve in 3rd grade.

Lesson Plan Summary: In this lesson, the instructions is more teacher directed but students are encouraged to have discussions with partners, especially during times where students have the opportunity to decompose 12 with other factors. Students use whiteboards to solve problems based on the strategy that is being used. Students also access prior knowledge to help them better understand current facts, such as 10's and 2's. Cognitivism is present in this lesson as students are constantly building upon what they know from repeated addition to skip counting. (Ertmer, P.A., & Newby, T.J., 2013).

Name

Date

12's

1. 12 x 8 = ____

2. 12 x 6 = ____

3. 12 x 9 = ____

4. 12 x 7 = ____

5. 12 x 1 = ____

6. 12 x 2 = ____

7. 12 x 3 = ____

8. 12 x 4 = ____

9. 12 x 5 = ____

10. 12 x 3 = ____

12's

1. 12 x 8 = 96

2. 12 x 6 = 72

3. 12 x 9 = 108

4. 12 x 7 = 84

5. 12 x 1 = 12

6. 12 x 2 = 24

7. 12 x 3 = 36

8. 12 x 4 = 48

9. 12 x 5 = 60

10. 12 x 3 = 36