**Math Design**

* + The goals and objectives of the instruction

Math Goal: Solve subtraction word problems, and subtract within 10, e.g., by using objects or drawings to represent the problem

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| Lesson | Objective |
| Math-1  Subtraction Vocabulary | Kindergartners will be able to 100% accurately show the meanings of the vocabulary “take away,” “left over,” and “minus,” as they are given instructions for using manipulatives. |
| Math-2  Using Manipulatives | Kindergartners will use manipulatives to correctly solve story problems given to them verbally involving subtraction. |
| Math-3  Drawing Pictures | Kindergartners will draw pictures to solve story problems that are verbally told to them with 90% accuracy. |
| Math-4  Writing Subtraction Sentences | Kindergartners will correctly write 8 out of 10 subtraction sentences to go along with a story and picture that has been given to them. For example, 5 take away 3 is 2. |

* + Pre-requisites

The pre-requisites for this subject are that the students have the following skills:

-Recognize numbers 1-10

-Count using one-to-one correspondence to at least 10.

-Understand the vocabulary terms “more,” and “fewer.”

* + Learner Characteristics

The students in my class were at 78% on or above benchmark for the Winter assessment in Number Identification. 32 students were above benchmark, 5 were below benchmark, and 4 were well below benchmark. Knowing who these students are I can give extra attention and focus to them as we review the number names.

Math Lesson #1

* + Testing and evaluation strategies to be used in the instruction, as appropriate:

I will evaluate the students during this lesson by walking around the room as I give students instructions using the vocabulary that was taught. I will use a checklist to mark if they are correctly responding to the instructions or not. During this lesson I will not be looking to see if they correctly solved the problem, but whether or not they understood the vocabulary used. For example, I might say “take away” 5 counters. Show me the group that is “left over.” And evaluate if they did those things.

* + Feedback mechanisms that will support testing and evaluation:

During the evaluation I will correct mistakes and make note of them on my checklist. I will praise the right responses.

* + Practice activities to be used in the instruction including feedback strategies:

I will begin instruction by having students come up and act out stories, stressing the vocabulary used. We will discuss their meanings, and then let the students work on their own with farm manipulatives.

* + Examples and non-examples of the procedure or concept (as appropriate):

4 students come up to the front and I say “4 cows were grazing in the pasture. 2 of them left. How many are ***left over***?” Students act out the story and discuss what happened and what the term “left over” means.

* + Motivational strategies to be used in instruction:

I will involve and engage students by having them participate by coming up to act out stories, and then by letting them appropriately use the farm manipulatives.

* + Basic plans for instructor materials:

I will need the following materials:

* + - farm manipulatives (could use basic counters if farm related aren’t available.)
    - Checklist with student names and places for comments.
    - Farm related subtraction story problems.

Math Lesson #2- Subtract Using Manipulatives

* + Testing and evaluation strategies to be used in the instruction, as appropriate:

To evaluate this lesson I will again walk around the classroom and use a checklist/anecdotal notes as I give verbal math story problems. As opposed to the previous lesson, I will look to see if the students are correctly solving the problem using the manipulatives.

* + Feedback mechanisms that will support testing and evaluation:

During the evaluation I will correct mistakes and make note of them on my checklist. I will praise the right responses.

* + Practice activities to be used in the instruction including feedback strategies:

I will show the Pearson Mathematics Animated story, 11-1. We will discuss how the manipulatives were used to show the story. I will then give the student their own manipulatives and verbally tell them stories to practice.

* + Motivational strategies to be used in instruction:

I will involve and engage students by using questioning techniques during the online animation and correctly using manipulatives to practice.

* + Basic plans for instructor materials:

I will need the following materials:

* + - farm manipulatives (could use basic counters if farm related aren’t available.)
    - Checklist with student names and places for comments.
    - Farm related subtraction story problems.
    - Computer for online animation, projector

Math Lesson #3 Draw Pictures to Solve Story Problems

* + Testing and evaluation strategies to be used in the instruction, as appropriate:

I will evaluate the students during this lesson using a worksheet that I will create.

* + Feedback mechanisms that will support testing and evaluation:

I will walk around the classroom as they are working on the worksheet and point out their successes and correct those making mistakes. I will make use anecdotal notes to record those I helped.

* + Practice activities to be used in the instruction including feedback strategies:

I will begin this lesson by telling a story using no words, but only drawing pictures on the doc cam. I will then explain that I used pictures to show what happened in the story, and that I can do the same thing when I hear a story about taking away. I will let the kids practice on white boards with the manipulatives to start out with, and take away the manipulatives as we go on. I will give constructive feedback about what they are drawing. Then I will give them a worksheet to draw pictures from a story that I will tell them

* + Motivational strategies to be used in instruction:

I will involve and engage students by using the whiteboards, and positive feedback and praise.

* + Basic plans for instructor materials:

I will need the following materials:

* + - farm manipulatives (could use basic counters if farm related aren’t available.)
    - Doc Cam
    - Blank Paper, Story Problem
    - WhiteBoards, Markers
    - Worksheet.

Math Lesson #4 Writing Subtraction Number Sentences

* + Testing and evaluation strategies to be used in the instruction, as appropriate:

I will evaluate the students during this lesson using a worksheet created from the Pearson Mathematics program.

* + Feedback mechanisms that will support testing and evaluation:

I will walk around the classroom as they are working on the worksheet and point out their successes and correct those making mistakes. I will make use anecdotal notes to record those I helped.

* + Practice activities to be used in the instruction including feedback strategies:

I will begin instruction by watching the Pearson Online Animated Story 11-2. This talks specifically about writing the number sentence. I will ask students what the numbers in the sentence represent. I will then write different number sentences on the doc camera and make up a story for each one. I will ask the students to show me the number sentence by either drawing a picture, or using manipulatives. I will then give them the worksheet.

* + Motivational strategies to be used in instruction:

I will involve and engage students by using engaging questioning techniques (choral response, random call on, partner shares). I will also engage them by having them interact with the stories that I tell.

* + Basic plans for instructor materials:

I will need the following materials:

* + - farm manipulatives (could use basic counters if farm related aren’t available.)
    - White boards
    - Computer for online animation.
    - Pearson Worksheet