Jamie Andrews, Sydney Bolton, Kathleen Wick
February 6th, 2020
Assignment #2
EDCI 405, A01
Tim Pelton

Mini Lesson Plan

Description:

This lesson plan is designed to improve the fluency of addition and subtraction computations of Grade 2 students. The Big Idea addressed is "Development of computational fluency in addition and subtraction with numbers to 100 requires an understanding of place value". The curricular competencies that are supported by this lesson are "Develop mental math strategies and abilities to make sense of quantities" and "Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving". The content pieces of the curriculum are "addition and subtraction to 100" and "addition and subtraction facts to 20".

Required Materials:
a.   Class set of MATHO cards (30)
b.   30 MATHO dabbers
c.   learners will need a pencil, an extra piece of paper (to perform calculations), and a calculator (optional)
d.   Math manipulatives

Terms introduced/reinforced in lesson:
a.   Sum
b.   Difference
c.   Adds to
d.   Equals
e.   Greater than
f.   Less than

Timeline for the lesson:
a.   Introductory Math Story (10 minutes)
b.   Transition to MATHO activity (5 minutes)
c.   3 Rounds of MATHO (30 minutes)
d.   Clean Up (10 minutes)

Description of Intro Activity:

We will be reading a math story that gets the kids' brains engaged in the concepts of addition and subtraction

The purpose of this activity is to encourage the students to begin thinking about their prior knowledge

Simple script with key questions

a.   Lindy, Marva and Darius have just returned from trick-or-treating and have emptied their pillow cases full of treats out onto the living room floor. Lindy has 7 chocolate bars, Marva has 23 chocolate bars, and Darius has 5. If they were to put all their chocolate bars together, how many chocolate bars would they have?

b.   Wow, what a beautiful Spring day it is! Birds are singing, the flowers are blooming and Ol' man Bill is mowing his lawn. Bill takes a lunch break and is extremely hungry so he makes

himself 15 small sandwiches. Turns out his eyes were larger than his stomach and he only eats 9 of them. He gives the rest to the birds. How many sandwiches did he give to the birds?

c.   Diane and Jane each have an amazing superpower. Diane can make plants grow out of thin air with his mind and Jane can turn plants into ponies. Diane takes a trip to the desert and makes a little oasis for some shade to rest in. In doing this, he creates 87 trees. Then, in the middle of the night, Jane arrives at the oasis with 15 friends who are all really tired. To ease their travels, Jane turns 15 of the trees into ponies. How many trees remain?

d.   Samantha the sea lion sees six sea cucumbers silently sitting in the sun. Suddenly, seventy sea cucumbers slide into the scene and start singing. The six silent sea cucumbers join the symphony of sounds. How many singing sea cucumbers does Sam the sea lion see?

e.   This number found in column T is smaller than the sum of 11+7-5 and larger than the difference of 80-69

f.   This pomegranate has 90 seeds. I eat 10 of them in my salad! How many seeds are left?

g.   I was making strawberry jam on my summer vacation. I bought a box of jam jars that had 10 jars in it. I used 6 jars, how many jars do I have left?

h.   Keara and Corbin went to the farmers market on Saturday and brought $30 to spend. They spent a total of $20 at the farmers market. How much money do they have left?

i.   I wanted to go fishing so I went to the corner store to buy worms for bait. I bought two jars with 25 worms each in them. How many worms did I buy?

j.   Lauren has $100 in her bank account. Lauren's mother gave her $60 of the dollars in the account. How much money did Lauren put in her bank account?

k.   I wanted to make cookies for my cohort friends because they are lovely. I know that there are 32 people in my cohort and 36 cookies in three batches of cookies. How many cookies do I have left over when I make 36 cookies (or 3 batches)?

l.   Lindsey has a total of 15 marbles in her collection. She started with 8 marbles and then her friend Jake gave her some marbles. How many marbles did Jake give Lindsey?

Descriptions/samples of activities games or exercises for students:

a.   MATHO template is provided in the appendix
- Students will each receive one blank template which they fill in individually as mentioned above

b.   Math story is provided in the appendix
- Story is for the teacher to read at the beginning of the lesson to review addition and subtraction with students as well as to engage them in the lesson

Description of accommodations to meet diverse needs:

Allow students to fill in their MATHO cards with numbers of any size between 0 and 100. Students who are not yet comfortable with larger numbers can choose to fill their cards with numbers less than 20 and students who feel more confident in math can choose larger numbers. Allow students to work together, use manipulatives, number lines, work out their answers on scrap paper, or use any other tool they wish to solve the question presented to them.

Connection to indigenous knowledge:

a.   This math lesson can be related back to the First Peoples Principles of Learning via two principles

b.   These principles are "learning is embedded in memory, history, and story" and "learning requires patience and time"

Description /sample of the assessment activities/checklist/observation for the lesson:

a.   As the goal for this lesson is to build students' fluency there is no formal assessment
b.   As students call "MATHO" teacher will check student answers against a key they have created to assess for accuracy of the student's computation
c.   Teacher will also observe participation of all students during the game of MATHO and record this on a checklist in order to assess what students are engaged and what students the teacher needs to work with further to deduce how to engage them (see appendix for a checklist template)

Possible follow-up activities and integration with other subject areas:

Possible follow-up activities include more MATHO, and spending a math lesson creating addition and subtraction word problems to use in future MATHO games or other math activities. The creation of these word problems is to gauge student understanding of addition and subtraction.
a.   This activity connects to the English Language Arts curriculum through the Big Idea "language and story can be a source of creativity and joy" because story is used in this lesson to spark joy in the students surrounding math
b.   This activity also connects to the Arts Education curriculum through the Big Idea that "Dance, drama, music, and visual arts are each unique languages for creating and communicating".
c.   This activity connects to Career Education via the Big Idea "everything we learn helps us develop skills" as students are practicing the skills of addition and subtraction, listening and communicating

How it fits with personalized learning:

By allowing students to choose the numbers that they put in their MATHO cards, they can make the game as challenging as they want to. Students who are not yet comfortable with larger numbers can stick to numbers less than 20 on their cards, while students who are more comfortable with large numbers can include them. If there are students who really excel in math in the class, you could include more complicated operations (such as adding multiple numbers together) on occasion to challenge them.

Appendix:

M	A	T	H	O

Student Participation Checklist:

Name	Feb 6									

Addition and Subtraction Math Story:

We All Make Mistakes We Can Learn From

Ok, so here's the deal. I'm in a bit of a pickle. Maybe you can help me out. But first, I think I need to start this story by letting you know that I have an exceptional talent. You might not believe me (I can hardly believe it myself), but I swear this is true… I can speak to turtles. I know, I know! It sounds absurd, but here is how I found out.

Yesterday, I was out in my backyard harvesting some garlic and carrots from my garden (purple carrots!), when all of the sudden out of nowhere a turtle walked by. This turtle (that I will from

here on out call Daphne) began to dig not 1 meter away from me! She dug and she dug, and I just sat there covered in dirt holding a fistfull of carrots, watching her.

Then in her slow moving turtle fashion she turned away, and I thought she was about to leave when no joke she started to back herself up until her rear end was over the hole. The next thing that happened was truly unforgettable. Out popped 13 little white turtle eggs! Now this is important, remember, there were 13 of them. I was in such a state of awe while I watched her carefully cover up her eggs with loose soil that what happened next truly pulled the wind clean out of my lungs. Daphne poked her head up over her shell looking back at me and said "you best make sure no one takes any of my eggs." Despite my foot being in my mouth, I managed to respond with a simple "yes, ma'am." With that, Daphne gave me a nod, turned to the pond and moseyed on her way.

Not 30 minutes had passed, when she came back. So I told her that I had kept a close eye on her eggs and that they were safe from harm. She was confused and said "Ah you must think I am Daphne. I am not! My name is Francine. My eggs have yet to be laid. Indeed, that is why I have come. Would you be so kind as to let me know where Daphne laid her eggs so that I don't dig them back up?"

"Ah you bet! She laid them right over here." I pointed to the small mound of churned up soil.

"Much obliged," said Francine.

Then Francine got to diggin' in a different spot and proceeded to lay her own set of 6 eggs. She gently covered them up and left, but not before bestowing upon me the task of keeping an eye on her eggs as well. "I will keep two eyes on them, dear Francine... as often as I can spare them." She left with a large smile. I didn't know turtles could smile like that, but Francine certainly did. Francine the smiling turtle. What a gal!

Anyway, after sitting there for 5 whole minutes, hunger paid me a visit. "I'll go in and grab a quick bite to eat," I thought, "then I'll come back here and play these eggs a song to help protect them."

Well needless to say what greeted my return was nothing short of horrific! The piles were both dug up! I ran over and counted how many eggs were left. Altogether I counted 8 eggs. Before I go and tell Daphne and Francine the truth, I need to figure out a few things.

First, how many eggs in total were there before they were taken by the mysterious bandit?

If there were a total of 8 eggs left, how many eggs did the maleficent marauder snitch?

If Daphne and Francine were to replace those eggs, how many eggs would each of them need to lay? How many different possibilities can you think of?

Wow thank you for your insightful answers. A wise monkey once told me that the past can hurt, but either you can run from it or learn from it. So I am going to go tell Daphne and Francine

about the whole situation and then I will return and play a song to make sure the eight eggs that remain grow up to be big and strong.

There was a farmer who had a turtle
And MATHO was his name-o
M-A-T-H-O
M-A-T-H-O
M-A-T-H-O
And MATHO was his name-o...