Grade: 4th	**Subject:** Math
Materials: Paper clips, math measurement sheet	**Technology Needed:** Computers
Instructional Strategies: ☐ Direct instruction ☐ Guided practice ☐ Socratic Seminar ☐ Learning Centers ☐ Lecture ☐ Technology integration ☐ Other (list) ☐ Peer teaching/collaboration/ cooperative learning ☐ Visuals/Graphic organizers ☐ PBL ☐ Discussion/Debate ☐ Modeling	**Guided Practices and Concrete Application:** ☐ Large group activity ☐ Independent activity ☐ Pairing/collaboration ☐ Simulations/Scenarios ☐ Other (list) Explain: ☐ Hands-on ☐ Technology integration ☐ Imitation/Repeat/Mimic
Standard(s) 4.NBT.4 Fluently add and subtract multi-digit whole numbers to the one millions place using strategies flexibly, including the standard algorithm. 4.NBT.2 Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. 4.NBT.3 Use place value and/or understanding of numbers to round multi-digit whole numbers to any place.	**Differentiation** **Below Proficiency:** Students will be expected to participate and complete their math worksheet. **Above Proficiency:** Students will be able to demonstrate that they are able to add two- or three-digits numbers together. Or they will be able to demonstrate division by taking their lengths divided by either 10 or 100. **Approaching/Emerging Proficiency:** Students will be able to demonstrate that they are able to add two- or three-digits numbers together. **Modalities/Learning Preferences:** Creative, Hands on
Objective(s) By the end of the lesson, students will be able to use arithmetic to add two- or three-digit numbers together through manipulatives such as paper clips. **Bloom's Taxonomy Cognitive Level:** Apply, Create	
Classroom Management- (grouping(s), movement/transitions, etc.) I will create a positive environment by engaging the students in a paper clip measurement activity. The students will be responsible for participating in group activities. I will provide instruction for moving around the room during transition times.	**Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.)** Students are expected to participate in activities.

Minutes	Procedures
	Set-up/Prep: • I will have the paper clips and math worksheets set out before the lesson starts.
3	**Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.)** • I will begin the lesson by asking the students what river and lakes we have in ND. • I will then ask students if they know any rivers or lakes outside of ND in the United States. • Then I will tell students that we are going to explore the lengths of different rivers and lakes by using paper clips.
10	**Explain: (concepts, procedures, vocabulary, etc.)** • I will then explain to the students that I will be putting them into groups after I explain the directions. • Each group will be given a different body of water. • Everyone will receive a sheet of paper that has the directions on it and where they will write down their answers. • I will let the students know that they will have to grab their chrome books to research some of their answers. • I will read through the sheet to make sure everyone knows the directions. (The sheet is attached below). • I will then tell the students after I assign them their groups, they will need to find an area in the room to work from and sit quietly while I give them the next step. • I will then assign groups. • Once all the students are in their spots, I will tell them that they will assign 1 person in their group to grab one chrome book, assign 1 person to go and grab a bag of paper clips, and 1 person to grab the direction sheet for each person in their group. • I will tell the groups if they finish early, they will research 3 interesting facts about their body of water and write it on the back of their sheet. (I will also write this on the white board for a reminder.) • Once they have all their materials, they can begin their activity. • I will be walking around the room during the activity to see if any groups have any questions.
20	**Explore: (independent, concreate practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions)** • Students will collaborate to research and solve math problems pertaining to their body of water.
10	**Review (wrap up and transition to next activity):**

	• Once all the groups are done linking all of their paper clips, I will have the 3 groups that had the lakes stand by each other and the 3 groups who had the rivers stand by each other. They will hold their chain-linked paper clips out for everyone to see. (I will demonstrate how I want them to hold them vertically if needed.) • I will then ask the groups to stand in order from shortest to longest. • I will first start with the lakes and ask them "How many miles more is the 2nd longest compared to the shortest? How many miles more is the longest compared to the 2nd longest? How many miles more it the longest compared to the shortest?" • I will the ask the groups who have rivers the same questions above. • I will then ask the groups to put their paper clips back into the plastic bags, and hand in their bags and sheets to me.

Formative Assessment: (linked to objectives, during learning) Progress monitoring throughout lesson (how can you document your student's learning?)	**Summative Assessment (linked back to objectives, END of learning)**
I will be able to assess the student's understanding by observing their participation in the activity, reviewing their math work on their whiteboards, and if they are able to come up with the correct length for their paperclips.	I will be able to assess the student's arithmetic abilities by reviewing over their work on their math sheets they will be turning in.

Reflection (What went well? What did the students learn? How do you know? What changes would you make?):

What well: I believe my math lesson went very well. I made sure I was very explicit with directions. By telling my students my expectations, my lesson went a lot smoother than it might of went. Also, being firm with the class I was working with was good because they can get a little rambunctious. I did however have a student who did not want to listen towards the end of the lesson. I gave him 2 options which was either he can finish the lesson with his group or go back to his desk and miss out on the rest of the activity. He decided to stay with the group, and I was able to redirect his behavior. I was able to show good classroom manage throughout the lesson. The students enjoyed working in groups and having a hands-on activity.

What I would change: Before the lesson even started, my practicum teacher recommended I have the students use white boards to figure out their math work on. I was flexible and added that in at the last minute, which turned out to be helpful. Also, I told the students that they could pick who gets what in their groups, but only one person grabs one item. I should have made sure I tell them exactly who I want to get what, such as "whoever's birthday is the closest to October can get the white boards." That way it would have saved some time of the students figuring out who is getting what. Also, that way everyone is contributing to their groups. Also reflecting on how my lesson could have gone smoother, I think instead of having students work in groups of 3-4, I think I should of have them work with partners. I felt like when I was walking around the classroom observing, there were group members who were doing more work than others. Some students felt left out because they were not really doing anything. By having smaller groups, everyone is participating and gets to help create their paperclips length representing their body of water. Even though I gave detail directions, and on the math sheet I created the directions were detailed, I still had some students ask what they are supposed to be doing. When I went over the directions in the beginning, I should have had the students give me a 1-5 on their hand of understanding. 1 is they do not understand the directions, and a 5 is that they do understand. I could have had the students who gave me a 5 begin their activity, to where anyone who gave me a 3 and under, come to me and I will reexplain the directions and answer any of their questions. By doing this in the beginning, I think it would have saved a little bit of confusion right away with the lesson. Lastly, my lesson went a little bit longer than I thought. If I were ever to teach this lesson again, I would plan for more time to teach it.

Name:_____

Directions: Use your Chromebooks to research your given river or lake to answer the following questions.

Name of the river/lake:

Length of river/lake (round to the nearest whole number):

Location of river/lake:

Rivers:
1  = 100 miles

Lakes:
1  = 10 miles

Directions: Use the following chart above to figure out how many paperclips you need to link together to represent your river/lake. Use addition to find your answer.

How many paperclips did you use? Round your number of paperclips to the nearest tens place (ex: 16.22 paperclips = 16 paperclips; 16.48 paperclips = 17 paperclips). Show your work of how you came up with your answer.

Using full sentences, explain how you got your answer.