**Mathematics Project**

Andrea MacMurray

11/5/10

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**Name:** Andrea MacMurray **Grade/Developmental Level:** 2nd Grade

**Subject Area:** Mathematics (Telling Time) **Activity**: Show Me?

**Length of Time:** 15 Minutes **Date Taught:** 10/28/10

**Purpose:** To reinforce the concept of telling time.

**Curriculum Standards:** Communications, Connections, and Representations

M:CCR:2:1 **Students will communicate their understanding of mathematics** and be able to:

• Demonstrate mathematical communication through discussion, reading, writing, listening, and responding, individually and in groups.

• Discuss relationships between everyday language and mathematical language and symbols (e.g., words that mean something different in mathematics and in everyday life).

• Explain conclusions, thought processes, and strategies in problem-solving situations.

• Discuss, illustrate, and write about mathematical concepts and relationships.

• Draw pictures and use objects to illustrate mathematical concepts.

**Objectives:**

1. The children will be seeing reinforcing the concept of telling digital time and telling time on a clock.
2. The children will be moving the hour and minute hand around the clock.

**Background Knowledge Needed:** Have the children worked with time before? How much? Have they done hours, half hours, quarters, and minutes? Where are they lacking?

**Materials Needed:**

1. Small Clocks (Enough for all the children)
2. White board
3. Large Judy Clock ®

**Student Grouping:** 2nd Graders

**Preparation for Experience:**

1. Have Judy Clock ® readily available
2. Write on the white board “Show me \_\_\_\_\_ : \_\_\_\_\_”

**Outline of Experience:**

**Introduction:** Please go to your tool kit and get out your clocks.

**Body of the Lesson**:

We are going to practice telling time.

Please show me:

8:00, 1:30, 5:15, 9:45, 10:30, 11:15

After the children show me the time on their clocks I will show them the time on the large Judy Clock ®. If I sense that these times are too easy I will ask them more specific times like the conclusion.

**Conclusion**: Here is a tricky one: please show me 3:05

**Assessment Plan**:

I will know my objectives have been met through observation of the students during the clock activity. I will be able to see who is able to move the hands around the clock to the proper time. I will be able to see if they understand the concept of hours, half hours, and quarters. The conclusion will help me assess if they are beginning to understand minutes.

**Child Guidance/Classroom Management Plan:** If students get off track I will remind them that their job is to show me on their clocks what time it is. I will reinforce this by moving to the area of the room that I am most needed. I will use verbal and nonverbal cues to help certain students.

**Extension Plan:** You could extend this activity by instead of writing the digital time on the board use the Judy Clock ® and asking the students to write the time.

\* Documentation: I created a charted and checked off which children were able to meet which objective. I have attached the document because the page is formatted differently than this document.

10/29/10

Learning Experience Reflection: Mathematics-Telling Time

 The activity went for the most part quite well. I was able to really see where each child was at in the learning to tell time process. All of the children participated. I did not have to redirect attention back to the learning experience plan. Each child would listen to what time I wanted them to show me and they would turn the hands around on the clock to show me the time. I do think that there were too many show me’s. I think that fewer and some more advanced would have kept this more of a warm up learning experience and engaged a few students more that needed a challenge.

 For the most part both of my objectives were met. The children did reinforce the concept of telling time. During implementation I immediately changed writing the digital time on the white board truthfully because I forgot that was part of my plan therefore that part of my objective was not met. Showing the children on the Judy Clock ® and managing children’s progress as well as behavior became difficult. I ended up not showing the time on the Judy Clock ® every single time. I found it challenging to literally take down written assessment during the LEP but I know over time this will become second nature. During implementation instead of having the children hold the clocks up and show me, I walked around because originally when they would show me the hands on the clock would slip.

 Overall, the documentation worked quite well, but what I had written down did not necessarily surprise me from my observation informally with the children. The learning experience plan helped me realize that “EZ” and “EM” are ready for more advanced time telling and “JP” and “HC” need some more time to develop their skills. I also noticed that three or four children were mixing up the hour and minute hand. My objective was for the children to be moving the hour and minute hand around the clock they met this, we just need to work on which is which. As an introduction to the learning experience I posed a question: “What time is it now?” “A” answered me immediately probably before most of the children even started to focus. As a conclusion I said “What time is in now” and “How many minutes until 3:15?” “HT” answered both questions we worked through the second one on the Judy Clock ®. The conclusion of my assessment was that the majority of the students could show me the times that I asked. Some times were harder for others. Four out of the six children were able to show me 3:05. The assessment showed me that we need to work more on time with minutes. The children are understanding hours, half hours, and quarter hours; minutes is where we need to go next.

 The next time that I do this learning experience I will provide more varied times to challenge children and to keep the ones who need a challenge interested. The children needed fewer times to do but more various in levels of challenge. I really liked the idea of writing the digital time on the white board I would like to incorporate that into my learning experience plan for the children. The children then would be connecting the digital time to the 12 hour clock time. Another option for assessment is have the children sit in a circle on the floor where I can see what they are doing without them having to show me. Then they do not get nervous and say “Is this right?”

 Overall, LEP went great! I was able to assess the students, figure out where they are at, and figure out where we need to go to best support them. I learned that when walking around with a clipboard the students know that I am taking notes down about whether they got it right or not and then they ask did I get it right. I am going to try having them on the floor where they do not have to show me I can just look and take notes and see how that works. My next mathematics-telling time learning experience plan will be a matching activity will children match digital time, 12 hour time, and written out time together. The children will be connecting all three and seeing that they all mean the same thing.

**Name:** Andrea MacMurray **Grade/Developmental Level:** 2nd Grade

**Subject Area:** Mathematics (Telling Time) **Activity**: Elapsed Time Worksheet

**Length of Time:** 20 Minutes **Date Taught:** 11/2/10

**Purpose:** To reinforce the concept of telling time.

**Curriculum Standards:** Communications, Connections, and Representations

M:CCR:2:1 **Students will communicate their understanding of mathematics** and be able to:

• Demonstrate mathematical communication through discussion, reading, writing, listening, and responding, individually and in groups.

• Discuss relationships between everyday language and mathematical language and symbols (e.g., words that mean something different in mathematics and in everyday life).

• Explain conclusions, thought processes, and strategies in problem-solving situations.

• Discuss, illustrate, and write about mathematical concepts and relationships.

• Draw pictures and use objects to illustrate mathematical concepts.

**Objectives:**

1. The children will be writing the time shown on the worksheet under each clock face.
2. The children will be coloring in the amount of elapsed time on each clock face.

**Background Knowledge Needed:** Have the children worked with time before? How much? Have they done hours, half hours, quarters, and minutes? Where are they lacking?

**Materials Needed:**

1. What Time Is It? Worksheet
2. Colored Pencils

**Student Grouping:** 2nd Graders Individual Activity

**Preparation for Experience:**

1. Have 6 Copies of the worksheet
2. Have colored pencils handy

**Outline of Experience:**

**Introduction:** Today we are going to work on telling time so more. You are going to complete this worksheet. There are two parts to the directions. “\_\_\_\_\_\_\_\_\_\_\_ can you read the first sentence of the directions please.” (Write the time below each clock) “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ could you tell me what that means we need to do.” “\_\_\_\_\_\_\_\_\_\_\_\_\_ will you read the next sentence to the class.” “\_\_\_\_\_\_\_\_\_\_\_\_ what does that mean we need to do?” “Does anyone have any questions about the worksheet?”

**Body of the Lesson**:

The children will be completing the worksheet. I will be walking around observing the children as they reinforce their concept of time.

**Conclusion**: You have two more minutes to finish up your worksheets. If you are done please hand it to me. If you are not done please put it in your fix and finish folder.

**Assessment Plan**:

I will know my objectives have been met through observation of the students during this activity as well as the completed worksheet. I will be able to see what areas the student really understands and where they need more practice in. I will be able to see if they understand the concept of elapsed time through the worksheet aspect when they color in the amount of elapsed time.

**Child Guidance/Classroom Management Plan:** I will be walking around observing each students progress. If students are getting off track, I will remind them as a class or individually that this is a “Red Time,” and they have a job to do which is to complete the worksheet.

**Extension Plan:** The children could use this sheet as a reference sheet. They could refer back to this sheet when they are having trouble figuring out what time it is. This activity could be extended into them creating their own times of day. Another worksheet could be generated asking question such as: Show me what time you go to bed? What time you eat lunch? What time do you go to soccer? What time do you wake up in the morning? Etc…

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **What Time Is It?** |
| Write the time shown below each clock. Color in the clock to show how many minutes past the hour it is. |

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11/2/10

Learning Experience Reflection: Mathematics-Time

 This learning experience went quite well. As I was explaining what we were going to do I got a little worried, but they proved me wrong by the time they finished the worksheet they had a much better understanding of elapsed time past the hour.

 I began the lesson by asking the students what time it was now. I made sure to point out the small hand was pointing in between the two and the three, and the minute hand was pointing to the six. It was half passed two that meant that starting at the twelve, half passed would be the six. I then posed the question of what time would it be in thirty minutes. It took a few minutes but then the students were able to answer. I pointed out the from 2:00-2:30 was the same as 2:30-3:00. I then had the smart board set up with a large clock. I asked one of the students to tell me what time it was. I then said if we start at the 12, we then drag our pencil to the 6. (Pretend it was half passed an hour). We would then shade in that amount of the circle. For instance piece of pie I shaded half of the pie. We continued to do this a couple more times. I then pulled up the window on the smart board that depicted the worksheet that the children are going to do. I told the children that I was going to pass out the worksheet, their job was to write their name and date on the paper and look up at me for directions. I then had one student read the first sentence of the directions. I then repeated the sentence and posing the question to the class what are they asking us to do. One student reiterated to me that they were to write the time under the clock. I then asked another student to read the next sentence. After she did that I posed the question what are they asking us to do? Another student answered that they are supposed to color in how much time has gone by. I then reread the directions to the class numbering them step one and step two on the smart board. I then said does anyone have any questions about what they are doing. “EZ” and “EM” were fooling around during directions and not listening they did not hear the directions. I went over to them individually and explained again. The children worked on this activity independently for the rest of math period with mine and Mr. Thomas’ help.

 This activity did not change a whole lot during implementation. However, I did add a more of examples to help me better understand if the children were understanding the concept of elapsed time. We talked about the literal time as well as worked on the smart board with time before doing the worksheet. From the beginning of this activity to the end of them finishing up their worksheets I was able to see progress and a better understanding of elapsed time. When going over elapsed time in the beginning the children were not getting it probably just a couple of them got it. However, by the end I would say all of them had a pretty good idea. The worksheet allowed for a lot of repetition which helped reinforce the idea. My objectives were for the children to be writing the time shown below each clock they all met this objective. My next objective was for the children to be coloring the elapsed time that has passed. They all colored the clocks. None of the children got more than two that they need to take another look at and that was only a couple of children. One student in particular was having an off day. He barely finished writing the times under each clock. He rushed through coloring and did not even finish that. The children pretty much did meet both of my objectives.

 “EZ” did surprise me, normally he is really strong in mathematics. He may rush through it but he normally gets it done. He had to be reminded several times to get it done. He still did not do both parts of the worksheet. He just wrote the times down. On the ones that he did shade towards the end he was making careless mistakes. It did not surprise me that “EM” and “EZ” needed the directions reiterated to them because they did not listen. When given the opportunity to say whether they understood they were in such a rush to get it done they didn’t even say I don’t understand, until they had the worksheet in front of them it was then that they noticed everyone was off and working and they should be too but they did not understand. “AD” surprised me! He was focused and accurate with his work. He did not get distracted by the class, which would have been very easy. “JP” surprised me on how much one on one assistance she needed to write the times down. I was expecting her to be able to do that part on her own. After she got going with the elapsed time she began to do that with little to no help. “JP” created a pattern of colored pencil and gray pencil on her worksheet between problems. “HT” and “HC” struggled at first but a few helpful hints from me and they were off and working independently. They both understand the concept of elapsed time however “HT” really needs to look at some times again she is having trouble when it looks like it is the next hour but it is not quite for instance 11:50 she may put 12:50. “HC” only got one time really mixed up. I will have her look at it again it most likely was just a mistake.

 Truthfully, I think this learning experience went really well and for the first time I cannot really think of anything that I would change other than the way I instruct the children to do the lesson. I would go over the directions on the smart board before handing them the paper. I may even suggest to the children that they go in and figure out the times first and then come back to the elapsed time. At first I was thinking that 12 problems was to many but by there being that many the children were able to practice. Practice helped the children better understand the concept of time and elapsed time. The children truly got right to work on this activity whether they understood the directions or not. They were focused and got their work done.

**Name:** Andrea MacMurray **Grade/Developmental Level:** 2nd Grade

**Subject Area:** Mathematics (Telling Time) **Activity**: Telling Time 3 Different Ways Game

**Length of Time:** 25 Minutes **Date Taught:** 11/4/10

**Purpose:** To reinforce the concept of telling time.

**Curriculum Standards:** Communications, Connections, and Representations

M:CCR:2:1 **Students will communicate their understanding of mathematics** and be able to:

• Demonstrate mathematical communication through discussion, reading, writing, listening, and responding, individually and in groups.

• Discuss relationships between everyday language and mathematical language and symbols (e.g., words that mean something different in mathematics and in everyday life).

• Explain conclusions, thought processes, and strategies in problem-solving situations.

• Discuss, illustrate, and write about mathematical concepts and relationships.

• Draw pictures and use objects to illustrate mathematical concepts.

**Objectives:**

1. The children will be matching three aspects of telling time together (digital, 12 hour, words)
2. The children will be physically putting the pieces together to see if they fit.

**Background Knowledge Needed:** Have the children worked with time before? How much? Have they done hours, half hours, quarters, and minutes? Where are they lacking?

**Materials Needed:**

1. Matching Game Pieces

**Student Grouping:** 2nd Graders (3 children in each group)

**Preparation for Experience:**

1. Have the game pieces handy.

**Outline of Experience:**

**Introduction:** We are going to work on telling time some more today. This is a quick warm up activity that you’re going to work with two other people on. When we work in groups what are some things that we need to remember? (Take turns, etc)

**Body of the Lesson**:

Group 1 Group 2

Ethan Emerson

Haley C. Hailey T.

Andrew JoDee

Group one please go find a spot on the floor to spread out your game pieces. Group two please do the same. You have enough time to play a couple of rounds.

**Conclusion**: I will make sure to give the students a heads up to when the activity will be ending. For instance “Students you have five more minutes.” “It is time to clean up the game pieces and return to your desks.”

**Assessment Plan**:

I will know my objectives have been met through observation of the students during matching game activity. I will be walking around seeing if the children are all matching the game pieces together. I will be able to witness the interaction between the students. I will be able to take some notes about the interactions between their peers.

**Child Guidance/Classroom Management Plan:** I will be walking around, involving myself in each group. I will be posing thinking questions to help the students contemplate. If I notice a group getting off track I will join that group and help them refocus by posing questions and my presence.

**Extension Plan:** The children could come back to this activity by themselves and play it. This activity could also be used as an assessment. I could do this activity individually with students and take notes. I would be able to see if the student is understanding all three aspects (digital, 12 hour and words). This could be an activity that the class works together to create and then take home to practice.

11/4/10

Learning Experience Reflection: Mathematics (Telling Time)

 The activity went well. The students worked together in their groups collaborating with each other. The children were focused throughout the activity as much as can be expected. Overall, this was a good practice activity for the students. They got to practice telling time by matching the same time three different ways.

 I didn’t necessarily make any changes to my learning experience rather I added to it. I had the children come and make a circle on the floor to discuss the game. I made sure to model what I expected. I laid the cards out and asked various children what the cards said. I posed the question of why do these three fit together. (They all say the same thing) I then split the groups up. I had predetermined the groups, one worked out very nicely and the other was a little harder to keep on track but that was not the group it was certain individuals. Group one worked together very nicely. I observed group one taking turns and helping each other. When they were done with one round they decided to play Go Fish with the puzzle pieces. This helped reinforce the concept because the children had to read what was in their hands and interpret what they needed. Group two started off unorganized but managed to get it together. “HC” expressed that she was unsure if it was 8:30, “AD” nicely pointed out to her that it was eight thirty because the hour hand pointed to the eight and the minute hand pointed to the six. “AD” also pointed to the hands while explaining to “HC.” “HC” and “EZ” liked the game so much they wanted to play another round. “AD” was having a hard time staying awake and focused on the floor so he opted to work on his math boxes instead.

 My objectives were for the children to be physically and mentally matching three aspects of telling time together (digital, 12 hours, words). All of the children in the class met this activity. I witnessed “JP” excitement when she realized that she has gotten a match or “EM” saying “Yup they match.” All six of the second graders were able to meet my objectives “AD” did meet my objectives he just chose to work on math boxes instead of another round of the game.

 I learned that “HT”, “EM”, and “JP” work really well together. Yes “EM” may be more advanced in time telling but he kind of took on the role of teaching and helping. “AD”, “HC”, and “EZ” worked okay together they still met my objectives they are just a group that needs help refocusing. I learned that “AD” can be really helpful and nice to his peers. He could have easily just told “HC” the answer but he chose to explain why it was the answer verbally and physically. Both groups accomplished what I had expected.

 Next time I do this activity I would have more games so children could play in groups of two instead of three. I would incorporate this game into my everyday curriculum such as the children’s daily jobs. For instance “HC” is the time keeper this week she has to write the time and keep track of snack time. Instead of having her right the time one morning I could say that her job is to sort these times. If I did the game again with groups I would mix up the groups to see how different personalities mix. I know that “HT”, “JP”, and “EM” work really well together I wonder how if I mixed up that group it would work. Overall, really good warm up activity and would do it again and again.

**Mathematical Story Books**

* **Spaghetti and Meatballs for All! A Mathematical Story**

Written by Marilyn Burns Illustrated by, Debbie Tilley



* **Pigs Will Be Pigs: Fun with Math and Money**

Written by, [Amy Axelrod](http://www.amazon.com/Amy-Axelrod/e/B001H6NNK0/ref%3Dntt_athr_dp_pel_1)  Illustrated by, [Sharon McGinley-Nally](http://www.amazon.com/Sharon-McGinley-Nally/e/B000APJNTE/ref%3Dntt_athr_dp_pel_2) 



# Grandfather Tang's Story Math Tangram Tale Ann Tompert

Written by, Ann Tompert Illustrated by, Robert Andrew Parker



* **Monster Math**

Written by, Anne Miranda Illustrated by, Polly Powell



* **Tiger Math – Learning to Graph from a Baby Tiger**

Written by, Ann Whitehead Nagda and Cindy Bickel

