

## Fact Families

<b>Grade: 2nd</b>		<b>Subject: Math</b>	
<b>Materials:</b> Fact family worksheet, magnetic numbers*, number squares *If available. <b>Note:</b> 24 learners in classroom make at least 25 copies of worksheets		<b>Technology Needed:</b> Projector, Smart board	
<b>Instructional Strategies:</b> <input type="checkbox"/> Direct instruction <input type="checkbox"/> Guided practice <input type="checkbox"/> Socratic Seminar <input type="checkbox"/> Learning Centers <input type="checkbox"/> Lecture <input type="checkbox"/> Technology integration <input type="checkbox"/> Other (list)		<b>Guided Practices and Concrete Application:</b> <input type="checkbox"/> Large group activity <input type="checkbox"/> Independent activity <input type="checkbox"/> Pairing/collaboration <input type="checkbox"/> Simulations/Scenarios <input type="checkbox"/> Other (list) Explain:	
<b>Standard(s)</b> 2.OA.2 Use mental strategies to fluently add and subtract within 20.		<b>Differentiation</b> <b>Below Proficiency:</b> Provide supplementary materials and visual aids to assist the learners in arranging and rearranging the numbers in the fact family.  <b>Above Proficiency:</b> Utilize larger numbers for fact families. Can they create their own fact family?  <b>Approaching/Emerging Proficiency:</b> Follow lesson plan expectations.  <b>Modalities/Learning Preferences:</b> <b>Visual:</b> Use pictures of objects to represent each number in the fact family. For example if the fact family consists of five, three and eight have groups of five, three and eight stars up on the board to illustrate the number to quantity correspondence.  <b>Auditory:</b> Go through the process of building a fact family verbally.  <b>Kinesthetic:</b> Provide number squares with the three numbers on them so that the learner can physically manipulate the three numbers and practice rearranging them into four different number sentences.  <b>Tactile:</b> Have learners use counting chips to arrange and rearrange the number sentences before writing them out.	
<b>Objective(s)</b> By the end of the lesson learners will be able to create four different number sentences using addition and subtraction of the same three numbers.  <b>Bloom's Taxonomy Cognitive Level:</b> Apply			
<b>Classroom Management- (grouping(s), movement/transitions, etc.)</b> Learners will be asked to sit at their table spots and wait until they are told to flip over their math sheet. The sheets will be placed at their table spots prior to the beginning of the lesson so that they can follow along. Learners will be expected to put their hands on their head when they are finished working.		<b>Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.)</b> Learners will work at a voice level one. If they need help they will first think back to what we learned, second ask a friend, third raise their hand to ask for teacher assistance.	
<b>Minutes</b>	<b>Procedures</b>		
	<b>Set-up/Prep:</b> Have blank fact family set up on the board. (Confirm that smart board is available in classroom) Fill out first three fact family houses on the worksheets prior to handing them out.		
<b>5 mins</b>	<b>Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.)</b> “Good morning learners! Today we are going to practice building fact families. What do you know about fact families?” Provide time for learners to respond, gauge prior knowledge of fact families or lack thereof. “Let’s do an example together, if you look up here on the board we have two groups of stars. If we have two groups of stars, say we have five stars here, and three stars here. What happens when we add those together? Five plus three is eight. Now these three numbers, five, three, and eight, can be used in a lot of different ways to write a lot of different math sentences right? So what’s another way we could organize this? We have five plus three equals eight, how else can we get eight using those same numbers? If five plus three equals eight, three plus five also equals eight. Now let’s see what happens when we subtract from eight. Eight minus five equals three. There’s one more subtraction we can do with these three numbers, what is it? Eight minus three equals five. Look at that! We have four different number sentences, and we only used the same three numbers.”		

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<p><b>5-10 mins</b></p>	<p><b>Explain: (concepts, procedures, vocabulary, etc.)</b>          “You all have a sheet with four houses on it. Each of those houses has three numbers in the roof to get you started. I want you to take those three numbers and create two addition and two subtraction number sentences. Before you get started I want you to write your name at the top of the page. When you’re finished writing your name put your hands on your head to show me you’re done.”          Provide a few moments for the learners to write their names on the top of the page.          “Alright learners let’s go ahead and get rolling! Let’s make our first fact family together! We have 7, 3, and 10. So let’s start with a simple one. In the first house, the first addition is going to be 7 plus 3 equals 10. What’s another way to write that and get the same answer? 3 plus 7 equals 10! Strong work. Now we are going to make two subtractions from 10. 10 minus 7 equals 3. One more is going to be 10 minus 3 equals what? 7! I want you to try and work out the next three by yourself. Remember, you’re only allowed to use the three numbers in the roof of the house to create your four number sentences. If you get confused first ask yourself, second, ask a friend, and if you’re still confused ask a teacher.”          “When you’re finished bring your completed sheet to me.”          *Example sheet linked at end of lesson plan</p>
<p><b>10-15 mins</b></p>	<p><b>Explore: (independent, concrete practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions)</b>          Give learners time to begin work on their papers.          Walk around classroom to monitor progress.  <a href="https://www.teacherspayteachers.com/FreeDownload/FREE-Fact-Family-Worksheets-1843538">https://www.teacherspayteachers.com/FreeDownload/FREE-Fact-Family-Worksheets-1843538</a></p>
<p><b>5 mins</b></p>	<p><b>Review (wrap up and transition to next activity):</b>          “What did we learn about fact families today? How many number sentences can we make when we start with three numbers? Now that we’re finished, make sure you bring your completed sheets to me. Put away your writing utensils.”           The next ‘activity’ is lunch. At this point the learns will line clean up their supplies, push in their chairs, and line up at the door accordingly.</p>
<p><b>Formative Assessment: (linked to objectives)</b>  <b>Progress monitoring throughout lesson- clarifying questions, check-in strategies, etc.</b>           Do a few practice problems with the entire class and have them respond verbally to questions.          Walk around in the classroom while they are completing their own problem sets and redirect if learners are struggling.          Did the instruction portion work or are they going to need more support?   <b>Consideration for Back-up Plan:</b>           If the learners are still very confused, make sure and have number squares for them to manipulate already prepared and available to hand out in the even that they need more support and practice.</p>	
<p><b>Summative Assessment (linked back to objectives)</b>  <b>End of lesson:</b>          Collect worksheets at the end of the lesson to see if the learners comprehended the process of building a number family. Were they successful? Can they create four different number sentences using the same three numbers?   <b>If applicable- overall unit, chapter, concept, etc.:</b></p>	
<p><b>Reflection (What went well? What did the students learn? How do you know? What changes would you make?):</b></p>	

# Fact Families

8

5 + 3

8 - 3

5	+	3	=	8
3	+	5	=	8
8	-	3	=	5
8	-	5	=	3