# DI/UDL Math Lesson Plan Template

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| Lesson Plan Subject & Topic: Early Division with Equal Shares  **Developed by: Mari**       **Grade level: 3rd Grade**  **Date: January 8, 2023**                         **Unit: Numbers and Operations/Division** | | | |
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| Common Core Math Standards  CCSS.Math.Content.3.OA.A.2:  IEP Math Objectives  Given manipulatives, STUDENT will apply the concept of division to find whole number one-digit quotients with 80% accuracy in 4/5 trials.  NCTM Process Standards  Representation, Communication, Reasoning & Proof, Problem Solving | Materials  *The Doorbell Rang* by Pat Hutchins (big books)  Small paper plates (12 per student)  Circular cut outs (12 per student)  White board for each student OR iPad with the whiteboard application (Educreations Interactive Whiteboard or another whiteboard application) | |
| **Technology**  *Bold all that apply*     * Teacher laptop * **SMART Board** * LCD projector * SMART Senteos * **Computers** * **iPad or tablet** * iPod or mp3 player(s) | * Webcam * Digital camera * **Document camera** * Digital microscope * Video camera * Scanner * Color printer * Calculators * FM system |

UDL Procedures: Bold all that apply

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| Multiple Means of Representing   * **Think aloud strategy** * **Use multiple modalities for instruction (auditory, visual & kinesthetic)** * **Sequence instruction from concrete to representational to abstract (CRA)** * **Use tangible/concrete materials/manipulatives to illustrate & teach abstract concepts (base-ten blocks, fraction strips, Cuisenaire rods, geoboards)** * Explicitly teach math vocabulary * Use math word walls with visuals * **Pre-teach concepts and vocabulary before the lesson** * **Use visual representations (concept maps, pictures & other visual aids)** * Use virtual manipulatives (digital objects that resemble physical objects) * Use color-coding/different fonts for operation symbols to encourage operation sense & reduce confusion * Record lessons for review; provide access to students * Highlight essential components in texts, worksheets, problems * Use story maps or graphic organizers for sequencing, retelling, or summarizing | Multiple Means of  Action & Expression   * **Repeat directions** * **Simplify directions** * **Read aloud text/problems, repeat, review** * **Use practical/familiar items to improve focus** * **Use hands on activities** * Provide multiple strategies for instruction * Provide guided notes * **Provide frequent opportunities for review of rules, facts, formulas, strategies, etc.** * Teach math strategies, mnemonics, stories, rhythm or music and use visual cues rules or facts * Encourage use of note taking; allow use of notes during assignments * Teach & use the two-column notes strategies to assist with a review of concepts/test-taking * Provide desk & pocket size tools (multiplication & measurement tables, number lines, addition tables, bar models, fraction/decimal conversions, etc.) * Use of calculator to check work. * Use technology, computer algebra systems, online tools, digital manipulatives * **Use tablets & apps for note taking, procedural, conceptual review, frequent practice, etc.** * Use computer assisted instruction for highly structured systematic tutorials, and independent practice with immediate feedback * Allow class presentations to be given as a group * Explicitly teach purpose & application of models/tools; teach use of knowns & unknowns for strategy selections | Multiple Means of Engagement   * Reduce math anxiety-don’t use timed math facts tests * **Allow choice in problem solving strategy** * **Encourage positive self-talk.** * **Set purpose for learning** * **Create a safe learning environment** * **Reduce emphasis on peer competition & perfection** * **Make learning relevant/connect examples to student’s daily life** * **Make connections between math and the real world** * **Use flexible grouping (heterogeneous grouping to minimize the barriers of disability)** * Provide environmental accommodations (quiet space with minimal distractions, headphones or earplugs, study carrels) * **Create consistent classroom routines & procedures to help focus attention on math** * **Connect to prior learning & background knowledge** * **Use culturally relevant & developmentally appropriate examples** * **Provide immediate corrective feedback** * **Use small group instruction** * Teach self-monitoring (self-questioning, self-evaluation and self-regulation strategies) * **Monitor progress frequently to ensure appropriate application and encourage students to set data-based goals** |

Direct Instruction Procedure

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| Introduction    Lesson | “Have you ever invited a friend to your house when your mother is baking cookies?”  *(You will have your plate with 4 cookies on it ready under a napkin.)*  “These circles are the cookies. How many cookies do I have on my plate?”  “You and your friend will each get the same number of cookies. How can you share these cookies fairly with your friend?” *(Solicit student responses for different strategies to figure this out.)*  *(Model fair share with the cut outs for the students. Set out two plates. Using one of the student-generated strategies, divide the cut outs evenly between the plates.)*  *(Write on the board, 4 ÷ 2 = 2 and read the number sentence)*  “Today we’re going to read a book where the characters experience a similar problem. The book is *The Doorbell Rang.* It is written by Pat Hutchins.” I do *Begin reading the story*  *Make sure students put their plates aside.*  *Have 12 cookies on teacher’s plate*  After reading page 1, tell the students that we need to figure out how many cookies each friend should get so that they both have the same amount.  “Watch me as I use a strategy to get the same number of cookies on each plate. Since we have 2 friends, I am going to get out 2 plates. I am going to start counting by ones. I will put 1 cookie on each plate. I will put 1 on this plate, 1 on this one….” (continue to alternate putting 1 cookie on each plate until all cookies are on the plates). “Now I am going to count how many cookies I have on each plate. I have 1,2,3,4,5,6 on this plate and 1,2,3,4,5,6 on this plate. Each plate has 6 cookies. I started off with 12 cookies and divided the cookies into 2 plates and then there were 6 cookies on each plate. I know that *12 ÷ 2 = 6.”*  *Write on the board 12 ÷ 2 = 6.*  *Continue reading pages 2, 3, and 4.*  *After the doorbell rings and Tom and Hannah come in, bring out 2 more plates.*  I want you to watch me do one more. “Watch me as we figure out how to now split the cookies so all 4 friends have the same amount. Since we now have 4 friends, I am going to get 2 more plates. Now I need to take some of these cookies and put them on the empty plates. I think I will take one off of this plate and put it on the empty plate. I will do the same with the other one. I see that 2 of the plates have 5 cookies and 2 of the plates have 1 cookie. That’s not the same, so I will do that again. I will take one more from this plate and put it on the plate with only one and I will take one more from this plate of 5 and put it on the plate of 1. Now I have 2 plates with 2 cookies and 2 plates have 4 cookies. That’s still not the same so I will do it one more time. I am going to take one more cookie from the plate of 4 and put it on the plate of 2 and one more from this plate of 4 and put it on the plate of 2. Now all 4 plates have 3 cookies. Now I am going to count how many cookies I have on each plate. I have 1,2,3 on this plate, 1,2,3, on this one, 1,2,3 on this one and 1,2,3 on this plate. Each plate has 3 cookies. I started off with 12 cookies and divided the cookies into 4 plates and then there were 3 cookies on each plate. I know that *12 ÷ 4 = 3*  *Write on the board 12 ÷ 4 = 3.*  *Continue reading pages 5, 6, 7, and 8.* We do *After reading page 8, have students work with a small predetermined group and figure out what should be done to make sure that Victoria, Sam, Tom, Hannah, Peter and his brother each get the same number of cookies.  Allow students time to figure out the answer.*  “How many cookies did each child get?”  “What strategy did you use to figure out how many cookies should go on each plate?  What would be the new division problem?  *Write on the board 12 ÷ 6 = 2.*  *Continue reading pages 9, 10, 11, 12 and 13.*  *After reading page 13, have students work with a small group and figure out what should be done to make sure that Victoria, Sam, Tom, Hannah, Peter, his brother, Joy, Simon and the 4 cousins each get the same number of cookies. Allow students time to figure out the answer.*  “How many cookies did each child get?”  “What strategy did you use to figure out how many cookies should go on each plate?  What would be the new division problem?  *Write on the board 12 ÷ 12 = 1.*  *Finish reading the story*    *Have students work in groups of 4.*  *The students should have 48 cookies and 48 plates to use to solve the problems.*  “Someone remind me how many kids are at the house?” *(12 kids)*. Let’s pretend Grandma brought 12 more cookies, so now we have 24 cookies. Figure out with your group, by using your cookies and plates how many cookies each child gets.”  *Allow students time to work.*  “How many cookies did each child get?”  “What strategy did you use to figure out how many cookies should go on each plate?  What would be the new division problem?  *Write on the board 24 ÷ 12 = 2.*    “This time Grandma brought 24 more cookies, so now there are 36 cookies! How many cookies would each child get now? Please show the problem with your cookies and plates and on your iPad whiteboard application. Try to use 2 different strategies! You could do one strategy with your cookies and plates and one strategy on your whiteboard app!”  *Allow students time to work.*  “How many cookies did each child get?”  “What strategies did you use to figure out how many cookies should go on each plate?  What would be the new division problem?  *Write on the board 36 ÷ 12 = 3*. You do *Provide each student with a white board or iPad (using the whiteboard application).*  *Students will be working independently on their whiteboard or iPad, while answering the questions you provide verbally, but also have them written on the Smartboard. They can also use the cut outs and plates or draw pictures to help them.*  “The first problem I want you to solve is 10 ÷ 2*.* You can use any strategy to solve this problem.” *Students should show a representation of 10 split between 2 and write the problem 10 ÷ 2 = 5.*  “The next problem is 8 ÷ 4*.* You can use any strategy to solve this problem.” *Students should show a representation of 8 split between 4 and write the problem*  *8 ÷ 4 = 2.*  “Let’s pretend there are 6 cookies on a plate and you, Alex and Carson all want to have the same number of cookies. How many cookies does each person get? The division problem that represents this problem is *6 ÷ 3.*  *Students should show a representation of 6 cookies split between 3 people and write the problem 6 ÷ 3 = 2.*    “What if there are 20 cookies and 5 friends. How many cookies does each friend get? The division problem that would represent this problem is: *20 ÷ 5.*  *Students should show a representation of 20 cookies split between 5 friends and write the problem 20 ÷ 5 = 4.*    “What if there are 35 cookies and 7 friends. How many cookies does each friend get? What is the division problem that represents the cookies each person gets?  *Students should show a representation of 35 cookies split between 7 friends and write the problem 35 ÷ 7 = 5.* |
| Summative Assessment | Students can independently answer the following question using a whiteboard app on their individual iPad. The Educreations App allows students to write and draw their answers. When they are done answering the questions, they can email their answers or you can review them directly on their iPad.     1. What if there are 49 cookies and 7 friends. How many cookies does each friend get? What is the division problem that represents the number of cookies each person gets? Show and explain 2 different strategies or representations for how you solved this problem.   *\*\*\*If students are successful with this first question, you may choose not to use the additional question. While waiting for other students to finish, students could work individually or in small groups with the other children’s literature books with a division theme that are located in the materials list.*  *\*\*\*For students who struggled with the first question, provide support and feedback before having them move onto the second question.*  This time there are 64 cookies and 8 friends. How many cookies does each friend get? What is the division problem that represents the number of cookies each person gets? Show and explain 2 different strategies or representations for how you solved this problem. |
| Review | “Today we learned how to solve problems by creating equal groups of cookies. We were doing division! Division is breaking a number into equal groups, so that everyone has a fair share. If I had the division problem 56 ÷ 8 *(write this on the board)*, what could be a situation that would describe this problem? How could we figure out the answer? *(Solicit student responses)*. We will continue to learn different strategies for how to divide a number and we will also learn how we can use our understanding of multiplication to become better dividers!” |