

COMPUTER SCIENCE & DIGITAL FLUENCY SMART START GRANT LESSON PLAN

Date: March 2026 Unit/Lesson: You're the Teacher: Fraction Problem Project	
Approximate Time (in minutes) to complete lesson: 180 minutes (60 minutes over the course of 3 days)	Grade Level: 4th
Materials and/or Resources: Teacher Materials: <ul style="list-style-type: none"> ● Slide deck <ul style="list-style-type: none"> ○ With directions and examples ● Smartboard/ Projector Student Materials <ul style="list-style-type: none"> ● Chromebook/computer <ul style="list-style-type: none"> ○ Video recording capabilities ○ Slide Deck creation application 	CSDF Concept/Standard Addressed: <ul style="list-style-type: none"> <input type="checkbox"/> Impacts of Computing <input type="checkbox"/> Computational Thinking <input type="checkbox"/> Networks and Systems Design <input type="checkbox"/> Cybersecurity X Digital Literacy
Student-friendly "I Can" Statements: I can... <ul style="list-style-type: none"> ● Break fraction word problems into steps ● Create a visual display using digital tools ● Solve fractions word problems using visual models 	Vocabulary Words: <ul style="list-style-type: none"> ● Fraction ● Numerator ● Denominator ● Word problem ● Steps ● Visual model ● Slide show ● Stop-motion
ENGAGING THE LEARNERS	Day 1: Using the slide deck, students will be introduced to the project with the directions. Day 2: Tell the students that today they will be working to create the visual display, and they will start by seeing examples. Day 3: Show students examples if needed

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EXPLORING THE CONCEPT

Day 1:

Then, students will watch an example in real time.

Day 2:

Students will watch the three examples:

- Completed slideshow, using stop motion animation
 - Mention to the students that in order to make the stop motion effect, they need to follow these steps:
 - **Start with one slide**
Make your first slide. Add the information you want to start with.
 - **Copy the slide**
Right-click the slide and press “Copy,” then “Paste.” Now you have the same slide twice.
 - **Make a small change**
On the new slide, change *one little thing*.
For example: add one new part or a picture.
 - **Repeat the steps**
Keep copying the newest slide and making small changes each time.
 - **Keep changes small**
Only change a little bit on each slide so it looks smooth when you play it.
- Video using the slideshow and a voice over
 - Make sure students are familiar with video and audio application on their devices
- Video recorded with problem done on a whiteboard
 - Make sure students are familiar with video and audio application on their devices

Day 3:

Students continue to create their steps and visual presentation.

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EXPLAIN THE CONCEPT(S)	<p>Day 1: Finally, students will be given the prompt that today will focus on solving the problem, and breaking the solution into steps.</p> <p>Day 2: Students will have the rest of the time allotted to create their artifact.</p> <p>Day 3: Students continue to create their steps and visual presentation.</p>
ELABORATE	<p>Day 1: If students need extra support when breaking the problem into steps, they are to be given the prompt “When you are finished with the steps, a third grader should be able to follow your directions and produce the correct answer.”</p> <p>Day 2: Be sure to be familiar with any applications students will have access to, so as to help students troubleshoot.</p>
<p>EVALUATE: Assessment of Student Knowledge:</p> <p><input checked="" type="checkbox"/> Informal (observation, student work sample, etc..)</p> <p><input type="checkbox"/> Formal (formative or summative)</p>	
<p>Cross Curricular Links (standards):</p> <p><u>Computer Science and Digital Fluency</u></p> <ul style="list-style-type: none"> ● 4-6.CT.4 Decompose a problem into smaller named tasks, some of which can themselves be decomposed into smaller steps. ● 4-6.DL.4 Use a variety of digital tools and resources to create and revise digital artifacts. <p><u>Math</u></p> <ul style="list-style-type: none"> ● NY-4.NF.3d: Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators. ● NY-4.NF.4c: Solve word problems involving multiplication of a whole number by a fraction (e.g., by using visual fraction models and equations to represent the problem). 	

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Homework / Notes / Reflection:

Students were able to clearly explain their thinking, and were able to present their steps to a classmate, who in turn were able to get the correct answer. I had several students who really dislike word problems, and oftentimes, they are not able to explain their thinking in words. When given the chance to speak their thoughts, or visualize it, they gave a thorough explanation.

Breaking the problem into steps was the most difficult part of the process. Many students wanted to have too many steps in one. Using the prompt, "Think about if you were teaching this to third graders" seemed to really help with this, because the students realized that if they just said "multiply the fraction by the whole number", a third grader would not understand how to do that. Once they had this perspective, they did a much better job breaking the steps into small, doable chunks.