CODE: 107

Background

Imagine you are teaching a math lesson to a class of 16 second grade students. The purpose of this lesson is to examine the ways properties of operations can be used to add numbers.

You have asked the students to work with a partner to solve the problem 27 + 23 using any method that works best for them. The partners have completed their work. Now you plan to select 3 individual students to present their work to the class.

Look at the strategies below and the descriptions of the students. Then choose which three students you would like to have present.

The Problem

27 + 23

Learning Goal

Your goal is for the students to be able to understand how properties of operation can be used to add numbers.

- · You want the students to understand that two numbers can be added in any order (commutative property).
 - Example: 3 + 4 = 4 + 3
- · You also want the students to understand that 3 numbers can be regrouped and added in any order (associative property).
 - \cdot Example: 9 + (1 + 7) = (9 + 1) + 7

2nd Grade Student Descriptions Mateo (he/him) Daniela (she/her) Mason (he/him) Alejandro (he/him) Mateo is a Latino boy who Daniela is a Latina girl who Mason is a white boy who Alejandro is a Latino boy who speaks Spanish as his first speaks Spanish as his first speaks English as her first speaks English as his first language. He is an EL student language. She has no language. He is on an IEP for language. He is an EL student who speaks English at an identified disabilities, and she severe ADHD. He receives who speaks English at a intermediate level. He has no does not receive free or free or reduced lunch. He has beginner level. He has no identified disabilities. He reduced lunch. She has a a history of high success and identified disabilities. He receives free or reduced history of average success low participation during math receives free or reduced lunch. He has a history of high and low participation during lessons. He also enjoys lunch. He has a history of low success and average math lessons. She also loves singing. success and low participation during math lessons. He also participation during math to dance. lessons. He also likes to play loves to play Minecraft. the guitar. Strategy A Strategy B • I broke the 27 into 25 and 2. First I added 20 and 20 to get 40. • Then I added the 2 and 23 to make 25. Then I added 3 more to get 43. 25 + 2Then I knew that 25 plus 25 is 50 because 2 quarters are 50 cents. 25 40 + 3 = 4325 + 2550 Jackie (she/they) Angel (she/her) Valentina (she/her) Camille (she/her) Jackie is a white transgender Angel is a Black girl who Valentina is a Latina girl who Camille is a white girl who girl who speaks English as speaks English as her first speaks English as her first speaks French as her first her first language. She has no language. She has no language. She has an IEP for language. She is an EL identified disabilities. She identified disabilities, and she speech impairment student who speaks English receives free or reduced does not receive free or (stuttering). She does not at an advanced level. She has lunch. She has a history of reduced lunch. She has a receive free or reduced lunch. no identified disabilities, and average success and low history of low success and low She has a history of average she does not receive free or participation during math participation during math success and low participation reduced lunch. She has a lessons. She also loves lessons. She also enjoys during math lessons. She also history of high success and animals. making origami. enjoys spending time in high participation during math nature. lessons. She also does karate. Strategy C Strategy D Step 1 1. I made 27 and 23 +25 with the blocks. 2. I combined the tens together. Then I combined the ones.

That's 4 tens, which is 40. Plus 10 ones,

which is 50.

23 25

Then I took 2 from the 27 to make a jump of 2.

• Then I only needed to add 25 more, so I made another jump

50

0

• I started at 23.

and got 50.

That makes 25.

Step 2

Carter (he/him) Oliver (he/him) Ava (she/her) Grace (she/her) Carter is a Black boy who Ava is a white girl who speaks Grace is an Asian girl who Oliver is a white boy who speaks English as his first English as her first language. speaks English as her first speaks English as his first She has no identified language. He has no language. She has an IEP for language. He has no identified disabilities, and he disabilities. She receives free dyslexia. She does not identified disabilities, and he receives free or reduced or reduced lunch. She has a receive free or reduced lunch. does not receive free or lunch. He has a history of history of low success and low She has a history of low reduced lunch. He has a average success and little to participation during math success and average history of high success and no participation during math lessons. She also loves participation during math high participation during math lessons. He also loves to cook gardening. lessons. She also plays lessons. He also enjoys riding his bike. basketball. and bake. Strategy E Strategy F First, I added 7 and 3 27 to get 10. I put a zero 23 + 27 + 23 under the 7. I made it 23 + 27 because that's easier for 50 me to think about. Then I put the 1 up 23 + (2 + 25)Then I broke the 27 into 2 and 25. above the 2. Last I (23 + 2) = 25Then I combined the 2 with the 23, and I got added 1 + 2 + 2 to get Liam (he/him) CJ (they/them) Adriel (he/him) Jada (she/her) CJ is a gender fluid white Adriel is an Indigenous boy Liam is a white boy who Jada is a Black girl who child who speaks English as who speaks English as his speaks English as his first speaks English as her first their first language. They have first language. He has no language. He has no language. She has no no identified disabilities, and identified disabilities, and he identified disabilities, and he identified disabilities, and she they do not receive free or receives free or reduced does not receive free or does not receive free or reduced lunch. He has a reduced lunch. They have a lunch. He has a history of reduced lunch. She has a history of high success and average success and low history of average success history of high success and average participation during participation during math and average participation high participation during math math lessons. They also love during math lessons. He also lessons. He also loves to play lessons. She also plays on a to draw and paint. soccer. loves comic books. softball team. Strategy G Strategy H 1. 1. I made 27 and 23 with the blocks. 2. I pulled 2 apart from the 27 to make 25. 3. I put the 2 with the 23 to make 25. That makes 25 27 + 23• First I added 20 and 20 to get 40. + 25 which is 50. Then I added 7 and 3 to get 10. 20 + 20 = 40• Then I added 40 and 10 to get 50. 7 + 3 = 1040 + 10 = 50