CODE: 52

# **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 Angel (she/her) Ava (she/her) Jada (she/her) Camille (she/her) Angel is a Black girl who Jada is a Black girl who Ava is a white girl who speaks Camille is a white girl who English as her first language. speaks French as her first speaks English as her first speaks English as her first language. She has no She has no identified language. She has no language. She is an EL identified disabilities, and she disabilities. She receives free identified disabilities, and she student who speaks English does not receive free or or reduced lunch. She has a does not receive free or at an advanced level. She has reduced lunch. She has a reduced lunch. She has a history of low success and low no identified disabilities, and history of low success and low participation during math history of high success and she does not receive free or participation during math lessons. She also loves high participation during math reduced lunch. She has a lessons. She also enjoys gardening. lessons. She also plays on a history of high success and softball team. high participation during math making origami. lessons. She also does karate. Strategy A Strategy B 27 + 23• 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 Valentina (she/her) Alejandro (he/him) Carter (he/him) Daniela (she/her) Valentina is a Latina girl who Aleiandro is a Latino boy who Carter is a Black boy who Daniela is a Latina girl who speaks English as her first speaks Spanish as his first speaks English as his first speaks English as her first language. She has an IEP for language. He is an EL student language. He has no language. She has no speech impairment who speaks English at a identified disabilities, and he identified disabilities, and she (stuttering). She does not beginner level. He has no receives free or reduced does not receive free or receive free or reduced lunch. identified disabilities. He lunch. He has a history of reduced lunch. She has a She has a history of average receives free or reduced average success and little to history of average success success and low participation lunch. He has a history of low no participation during math and low participation during during math lessons. She also success and low participation lessons. He also loves to cook math lessons. She also loves and bake. enjoys spending time in during math lessons. He also to dance. nature. loves to play Minecraft. Strategy C Strategy D +2 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, 23 50 which is 50 I started at 23. Step 2 Then I took 2 from the 27 to make a jump of 2.

That makes 25.

and got 50.

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

#### CJ (they/them) Mason (he/him) Liam (he/him) Grace (she/her) CJ is a gender fluid white Mason is a white boy who Liam is a white boy who Grace is an Asian girl who speaks English as his first speaks English as his first child who speaks English as speaks English as her first language. He is on an IEP for their first language. They have language. She has an IEP for language. He has no severe ADHD. He receives identified disabilities, and he no identified disabilities, and dyslexia. She does not free or reduced lunch. He has does not receive free or they do not receive free or receive free or reduced lunch. a history of high success and reduced lunch. He has a reduced lunch. They have a She has a history of low low participation during math history of high success and success and average history of average success average participation during lessons. He also enjoys and average participation participation during math during math lessons. He also math lessons. They also love lessons. She also plays singing. loves comic books. to draw and paint. basketball. Strategy F Strategy E 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 Adriel (he/him) Oliver (he/him) Jackie (she/they) Mateo (he/him) Adriel is an Indigenous boy Jackie is a white transgender Oliver is a white boy who Mateo is a Latino boy who who speaks English as his girl who speaks English as speaks English as his first speaks Spanish as his first first language. He has no her first language. She has no language. He is an EL student language. He has no identified disabilities, and he identified disabilities. She identified disabilities, and he who speaks English at an receives free or reduced receives free or reduced does not receive free or intermediate level. He has no lunch. He has a history of reduced lunch. He has a identified disabilities. He lunch. She has a history of average success and low average success and low history of high success and receives free or reduced high participation during math lunch. He has a history of high participation during math participation during math lessons. He also loves to play lessons. She also loves lessons. He also enjoys riding success and average soccer. animals. his bike. participation during math lessons. He also likes to play the guitar. Strategy H Strategy G 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. 2. 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