CODE: 54

# **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).
  - Example: 9 + (1 + 7) = (9 + 1) + 7

#### 2nd Grade Student Descriptions Adriel (he/him) Grace (she/her) Angel (she/her) Mason (he/him) Angel is a Black girl who Adriel is an Indigenous boy Grace is an Asian girl who Mason is a white boy who speaks English as her first who speaks English as his speaks English as her first speaks English as his first first language. He has no language. She has an IEP for language. She has no language. He is on an IEP for identified disabilities, and he dyslexia. She does not identified disabilities, and she severe ADHD. He receives receives free or reduced receive free or reduced lunch. does not receive free or free or reduced lunch. He has reduced lunch. She has a lunch. He has a history of She has a history of low a history of high success and average success and low success and average history of low success and low low participation during math participation during math participation during math participation during math lessons. He also enjoys lessons. He also loves to play !lessons. She also plays lessons. She also enjoys singing. soccer. basketball. making origami. Strategy B Strategy A 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. 40 25 40 + 3 = 4325 + 2550 Jackie (she/they) Daniela (she/her) Liam (he/him) Ava (she/her) Jackie is a white transgender Daniela is a Latina girl who Liam is a white boy who Ava is a white girl who speaks girl who speaks English as speaks English as her first speaks English as his first English as her first language. her first language. She has no language. She has no language. He has no She has no identified identified disabilities. She identified disabilities, and she identified disabilities, and he disabilities. She receives free receives free or reduced does not receive free or does not receive free or or reduced lunch. She has a lunch. She has a history of reduced lunch. She has a reduced lunch. He has a history of low success and low average success and low history of average success history of average success participation during math participation during math and low participation during and average participation lessons. She also loves lessons. She also loves math lessons. She also loves during math lessons. He also gardening. animals. to dance. loves comic books. Strategy C Strategy D Step 1 1. I made 27 and 23 +2 +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.

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

and got 50.

#### Valentina (she/her) Mateo (he/him) Carter (he/him) Camille (she/her) Valentina is a Latina girl who Mateo is a Latino boy who Carter is a Black boy who Camille is a white girl who speaks English as her first speaks Spanish as his first speaks English as his first speaks French as her first language. She has an IEP for language. He is an EL student language. He has no language. She is an EL speech impairment who speaks English at an identified disabilities, and he student who speaks English (stuttering). She does not intermediate level. He has no receives free or reduced at an advanced level. She has receive free or reduced lunch. identified disabilities. He lunch. He has a history of no identified disabilities, and She has a history of average receives free or reduced average success and little to she does not receive free or success and low participation lunch. He has a history of high no participation during math reduced lunch. She has a during math lessons. She also success and average lessons. He also loves to cook history of high success and enjoys spending time in participation during math and bake. high participation during math lessons. She also does lessons. He also likes to play nature. the guitar. karate. 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 Jada (she/her) Alejandro (he/him) CJ (they/them) Oliver (he/him) Jada is a Black girl who Aleiandro is a Latino boy who CJ is a gender fluid white Oliver is a white boy who child who speaks English as speaks English as her first speaks Spanish as his first speaks English as his first language. She has no language. He is an EL student their first language. They have language. He has no identified disabilities, and she identified disabilities, and he who speaks English at a no identified disabilities, and does not receive free or beginner level. He has no they do not receive free or does not receive free or identified disabilities. He reduced lunch. She has a reduced lunch. They have a reduced lunch. He has a history of high success and receives free or reduced history of high success and history of high success and high participation during math lunch. He has a history of low average participation during high participation during math lessons. She also plays on a success and low participation math lessons. They also love lessons. He also enjoys riding during math lessons. He also softball team. to draw and paint. his bike. loves to play Minecraft. Strategy G Strategy H 1. I made 27 and 23 with 1. 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