**CODE: 38** 

# **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** Liam (he/him) Mateo (he/him) CJ (they/them) Mason (he/him) Liam is a white boy who Mateo is a Latino boy who CJ is a gender fluid white Mason is a white boy who speaks English as his first speaks Spanish as his first child who speaks English as speaks English as his first language. He has no language. He is an EL student their first language. They have language. He is on an IEP for identified disabilities, and he who speaks English at an no identified disabilities, and severe ADHD. He receives does not receive free or intermediate level. He has no they do not receive free or free or reduced lunch. He has reduced lunch. He has a identified disabilities. He reduced lunch. They have a a history of high success and history of average success receives free or reduced history of high success and low participation during math and average participation lunch. He has a history of high average participation during lessons. He also enjoys during math lessons. He also success and average math lessons. They also love singing. loves comic books. participation during math to draw and paint. lessons. He also likes to play the guitar. 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. 25 40 + 3 = 4325 + 2550 Oliver (he/him) Adriel (he/him) Grace (she/her) Daniela (she/her) Adriel is an Indigenous boy Oliver is a white boy who Grace is an Asian girl who Daniela is a Latina girl who speaks English as his first who speaks English as his speaks English as her first speaks English as her first language. He has no first language. He has no language. She has an IEP for language. She has no identified disabilities, and he identified disabilities, and he dvslexia. She does not identified disabilities, and she does not receive free or receives free or reduced receive free or reduced lunch. does not receive free or reduced lunch. He has a lunch. He has a history of She has a history of low reduced lunch. She has a history of high success and average success and low success and average history of average success high participation during math participation during math participation during math and low participation during lessons. He also enjoys riding lessons. He also loves to play lessons. She also plays math lessons. She also loves his bike. soccer. basketball. to dance. Strategy D Strategy C +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 0 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.

#### Jackie (she/they) Ava (she/her) Jada (she/her) Camille (she/her) Jackie is a white transgender Ava is a white girl who speaks Jada is a Black girl who Camille is a white girl who girl who speaks English as English as her first language. speaks English as her first speaks French as her first her first language. She has no She has no identified language. She has no language. She is an EL identified disabilities. She disabilities. She receives free identified disabilities, and she student who speaks English receives free or reduced or reduced lunch. She has a does not receive free or at an advanced level. She has lunch. She has a history of history of low success and low reduced lunch. She has a no identified disabilities, and average success and low participation during math history of high success and she does not receive free or lessons. She also loves participation during math high participation during math reduced lunch. She has a lessons. She also loves lessons. She also plays on a history of high success and gardening. animals. softball team. high participation during math lessons. She also does 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 • Then I put the 1 up me to think about. 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 Carter (he/him) Valentina (she/her) Angel (she/her) Alejandro (he/him) Angel is a Black girl who Valentina is a Latina girl who Aleiandro is a Latino boy who Carter is a Black boy who speaks English as her first speaks English as her first speaks English as his first speaks Spanish as his first language. She has no language. She has an IEP for language. He has no language. He is an EL student identified disabilities, and she identified disabilities, and he speech impairment who speaks English at a does not receive free or (stuttering). She does not receives free or reduced beginner level. He has no identified disabilities. He reduced lunch. She has a receive free or reduced lunch. lunch. He has a history of history of low success and low She has a history of average average success and little to receives free or reduced success and low participation participation during math no participation during math lunch. He has a history of low lessons. She also enjoys during math lessons. She also lessons. He also loves to cook success and low participation making origami. enjoys spending time in and bake. during math lessons. He also nature. 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