Numbers That Make 10 (Kindergarten)

TEACHER: So, mathematicians, last time we had math workshop, you were working on decomposing the number 10. Can you give me a me too if you remember that? You found so many different ways to decompose the number 10. You found so many different ways to decompose the number 10. Like, it was crazy. We learned that you could decompose 10 in so many different ways, right? Give me a me too if you remember that.

STUDENT: [INAUDIBLE]

TEACHER: So, I want you to go and take a look at Maria's way-- that she found a decompose 10 up here, and I just want you to take a minute and think to yourself and remember, what does that one mean, what does that nine mean, and what does that 10 mean? So just take a few seconds and think about that.

In a moment, I'm going to ask you to turn and tell your partner what you see, and to describe the way that Maria decomposed 10. So, it might sound like Maria decomposed 10 by hm. Or I see a group of hm or hm. Or maybe it'll say something different. Please turn to somebody close to the carpet and tell them what you see.

[INTERPOSING VOICES]

TEACHER: Do you agree or disagree?

[INTERPOSING VOICES]

TEACHER: Because. Sabrina, what do you see? Stand on up, please, and come and show us.

STUDENT: I see one up there, and I see nine down here.

TEACHER: Enrique, what did Sabrina say that she saw?

STUDENT: She saw the nine down there. She saw one up there.

TEACHER: You can ask her, is that what you said?

STUDENT: Is that what you said?

STUDENT: Yes.

TEACHER: Yes. Let's find another friend who can say more, who can add on. Will you find out from another quiet hand at their heart who can say more?

STUDENT: One means is the one that is up here, and the nine means this whole group, and the 10 means all of these parts.

TEACHER: OK. Say it one more time, please. I want to make sure I really understand your important mathematical idea.

STUDENT: This one means this heart that is up there, and this number means that these hearts that are down, and the number 10 means that there in all are 10.

TEACHER: That in all, there are 10. So, I want us to remember this important math idea that we just talked about. There's a group of one, and a group of nine, and together, as Abigail said, Eveline, in total, or in all, there was a group of 10. I want you to remember that. That's going to be really important. I want you to take a look up here at the card that I just put up, and I'm going to ask you an important question. Are you ready to hear the important math question? How many more hearts do I need to make 10? I'm going to say it again. Keep it in your mouth. Some people already have ideas. Take a look up here. How many more hearts do I need to make 10?

Some people are showing me that they're done thinking. I'm going to give you a few more seconds just to have those important math ideas. Derek, come on up, please. Can you tell me what you're thinking?

STUDENT: I'm thinking that you need 1 heart, 2 heart, 3 heart, 4. You need four to make each on that side, and then you need one in middle space, and then you need four again on the other side. You need to write your name.

TEACHER: I do need to write my name, you're right. So, can you repeat your idea one more time, please?

STUDENT: You need four on the other side, and then one heart in the middle, and four on the other side.

TEACHER: OK. So, I'm hearing Derek say that I need four hearts, and one heart, and four hearts. Is that what you're saying, Derek?

STUDENT: Yes.

TEACHER: Yes? OK, let's go ahead and see you that would make 10 together. Ready? So, I'm going to build it the way you said. Four hearts and one heart, and four.

STUDENT: Are you ready?

TEACHER: Is that what you were saying?

STUDENT: Yes.

TEACHER: OK, can you please go back to your spot? I'm going to ask you a question in one second. We're going to count these and see if we've made 10. Are you ready to help Mr. Torni count?

STUDENTS: Yeah.

TEACHER: Israel, are you ready to help Mr. Torni count? Let's do it.

TEACHER AND STUDENTS: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. 10 one, 10 two, 10 three, 10 four, 10 five, 10 six, 10 seven, 10 eight.

TEACHER: Derek, do I have 10 on my paper?

STUDENT: Yup.

TEACHER: I do?

STUDENT: Yup, you got 10 eight.

TEACHER: Oh, I have 10 eight. Is that the same as the number 10?

STUDENT: No.

TEACHER: No? How do you know?

STUDENT: Because 10 is one and a zero, and 10 eight is one and eight.

TEACHER: Are they the same number?

STUDENT: No.

TEACHER: No. Which is more?

STUDENT: 10 eight.

TEACHER: 10 eight. OK, so I'm not sure that we've built 10 on the paper yet. Will you call on a friend with a quite hand at their heart who can add to your idea? So, first off, do you agree with Derek, or do you disagree with Derek?

STUDENT: I disagree with Derek.

TEACHER: Pause. Derek, is that OK? Is it OK that Daniel has a different idea?

STUDENT: Yup.

TEACHER: Yup, totally OK.

STUDENT: We just learned this thing in Maria's because 1 plus 10--

TEACHER: Point, please, and show us what you're talking about.

STUDENT: 1 plus 9 is 10. So--

TEACHER: I'm gonna pause you right there. What did we learn from Maria's paper? Daniel was telling us that he learned.

STUDENT: We learned that the nine and the one are 10.

TEACHER: Mm-hmm, 9 plus 1 makes 10. OK, what's the next idea? So, what does that tell us about what we're doing now? Garret, second reminder.

STUDENT: We're doing papers about--

TEACHER: So, what does that tell us here? How many more hearts do we need to make 10?

STUDENT: One.

TEACHER: Go ahead and draw it, and then we'll see if Daniel can add to that idea, or it looked like Steve had something he really wanted to say. Draw that extra heart right there. Daniel tell us again what you think you've done. I think I've--

STUDENT: I think I've made 10.

TEACHER: He thinks he's made 10. And why do you think you've made 10?

STUDENT: Because I see it on Maria's.

TEACHER: Can you please write the equation that describes what you just did? And then I'm really coming back to Daniel and Steve, I remember. So, just write it at the bottom. Whoa, hold on. I just heard an idea. That's the same?

STUDENT: That's the same equation from Maria.

TEACHER: No way. Tell me more.

STUDENT: Because if Maria put one, then she circled the group of nine, it's 10.

TEACHER: So where's the group of one on the paper that Daniel just made? Steve, can you come and show that to us, please ? OK, where's the group of one on the paper that Daniel just made?

STUDENT: Right here.

TEACHER: OK, will you circle that group of one? So, I'm curious Steve said that there's a group one right there. And where is the group of nine on Maria's paper?

STUDENT: Right here.

TEACHER: And where's the group of one on Daniel's paper?

STUDENT: Right here.

TEACHER: Right there. Will you circle it?

STUDENT: Yeah.

TEACHER: All right. Let's just do one giant circle around all of them, so it's really clear that we got all of them like that, right? All right, would you double check? Will you count to make sure that 1 plus 9 is still 10? Can you count the hearts, please, that Danielle just did for us? All of them.

STUDENT: One, two, three--

TEACHER: Oh, ask your friends. Are you ready to help me count?

STUDENT: Are you ready to help me count?

TEACHER AND STUDENTS: Yes. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 10 one.

TEACHER: It's 10 one, or is it 10? Can we double check one more time?

STUDENT: Mm-hmm.

TEACHER: OK. Ask your friends, are you ready to help me count?

STUDENT: Are you ready to count?

TEACHER AND STUDENTS: Yes.

TEACHER: And then as we're counting this time, to make sure we're counting accurately, let's use the same counting path or groups that Derek saw. He said he saw a group of four, and a group of one, and a group of four. So let's count the group of four, the group of one, group of four, and then we'll add on that one. Ready?

TEACHER AND STUDENTS: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

TEACHER: What did we learn?

STUDENT: We learned it's 10.

TEACHER: That what is 10?

STUDENT: The hearts are all 10.

TEACHER: The hearts are all 10. And what's the number of the hearts? We learned that.

STUDENT: We learned that the number's 10.

TEACHER: Mm-hmm. How many hearts are here?

STUDENT: One.

TEACHER: So 1 heart plus.

STUDENT: 1 heart plus 9--

TEACHER: Hearts.

[INTERPOSING VOICES]

STUDENT: Makes 10.

TEACHER: Makes 10 hearts. All right, Daniella what are you hearing from your friends Steve and Daniel? Do you want to come on up and help us out with that?

STUDENT: Daniel said that Maria's is have one and 10.

TEACHER: One and 10?

STUDENT: And nine.

TEACHER: One and nine? This is important. Is it one and 10, or one and nine?

STUDENT: Nine.

TEACHER: One and?

STUDENT: One and nine.

TEACHER: OK, wait. So, Daniel said that Maria's paper has one and? Nine. Would you show with those groups on the paper?

STUDENT: One and nine.

TEACHER: OK, so Maria's paper had one and nine. That was from when we decomposed it. show us what Daniel was just saying. He was saying that on his paper.

STUDENT: His paper has nine.

TEACHER: And?

STUDENT: And one.

TEACHER: Oh my gosh. It's similar, isn't it? We'll talk more about that during closure. We're going to talk more about that important idea during closure. That seems very, very important. That seems very, very important. And I noticed with Steve noticed. The equation here, a group of 1 and a group of 1, plus a group of 9, plus a group of 9, still makes 10. It still makes 10. That seems really, really important. So mathematicians, when you go back to your tables you're going to be grabbing some packets of cards that are different colors. For instance, this has nine hearts on it, and you would need to figure out how many hearts do I need to make 10. We've already done that one, right? But if you flip on to this case, there's a tricky one. If you have one heart, how many hearts do you need to make 10?

STUDENT: One big heart.

TEACHER: It is big. You would still need to count them, though. There's a packet right here that might ask you to find out, if you have seven hearts, how many more hearts do you need to make 10? How many more hearts do you to make 10? Well, I'm interested to see if that's actually right. You're going have to figure it out. Which is it, two or three? We're going to have to find out. A couple of other things I want to remind you. So I'm going to go ahead and just show you the instructions, and then we're going to get off to our tables. Today, your job is to make 10. Today your job is to make 10. We're not decomposing. We were decomposing last time. Today we are figuring out how many more hearts you would need to make 10.

Israel, what are we doing today? We are making.

STUDENT: Uh, 10.

TEACHER: We're making 10. Enrique, what are we doing today?

STUDENT: We're making 10.

TEACHER: What are we doing today, Abigail?

STUDENT: We're doing 10.

TEACHER: We're making 10. Are we decomposing today, Eveline Mm-mm. Are we decomposing, Jose?

STUDENT: No.

TEACHER: Nope. Decomposing was what we were doing last time. We're making 10, although Daniel was saying that there's something similar about composing and decomposing. So I have that question up here. It says, how is this similar to decomposing 10? It's going to be a question you can ask yourself as you're working today, Sabrina. How is this similar to decomposing 10? And then just like last time, I have those math symbols that mathematicians use to represent

combining. I have some addition equation frames, in case you need to double check and find out how to write an addition sentence. Thumbs up if you're ready to get started.

[INTERPOSING VOICES]

STUDENT: Is it because that the [INAUDIBLE] for real cards, [INAUDIBLE] make 5 plus 5 equals 10?

TEACHER: Great, Enrique. Abigail, do you agree or disagree?

STUDENT: I agree.

TEACHER: Because?

STUDENT: Because 5 and 5 makes 10.

STUDENT: Can you prove it?

TEACHER: You can prove it.

STUDENT: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

TEACHER: Awesome. And do you agree with that? Do you agree with that? Abigail, where is this group of five on the paper?

STUDENT: The group of five is right here.

TEACHER: And where is this group of five?

STUDENT: That five is right here.

TEACHER: That group of five is right here. One second, my dear. Please wait. Thanks. That group of five, and that's a group of five. Is that right, Enrique? Is that where those groups of five are?

STUDENT: Yes.

TEACHER: All right. Will you write your addition sentence? And then when you're done, will you tell Enrique what you're thinking? OK. That sounds like a smart idea. All right, so let's figure out what we did here.

STUDENT: I don't know how to draw a heart.

TEACHER: That's OK, looks like you've been experimenting. So what have you learned? I learned that it is four.

TEACHER: How many hearts are on this card altogether?

STUDENT: 1, 2, 3, 4, 5, 6, 7, 8.

TEACHER: Do you count that heart?

STUDENT: Oh yeah, nine.

TEACHER: Nine hearts on that card. So how many are you going to need to get to 10?

STUDENT: I already--

TEACHER: Oh, those are Xd out?

STUDENT: Yeah, that's the one that I made.

TEACHER: That's the one that you made? Yes. All right, prove to me and to your friend Daniel that you have a group of 10 hearts right here.

STUDENT: 1, 2, 3, 4, wait. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

TEACHER: You wanna write the number 10 right there?

STUDENT: So, I want--

TEACHER: Go ahead and write that [INAUDIBLE] 1 plus?

STUDENT: 1 plus 10?

STUDENT: Is that 10?

STUDENT: Nine.

TEACHER: Is it nine?

STUDENT: Yeah.

TEACHER: How do you know?

STUDENT: 'Cause it starts with nine.

TEACHER: Does it start with nine?

STUDENT: Yeah, see? Nine.

TEACHER: Where?

STUDENT: Right here.

TEACHER: Show me one more time. Prove to me that is nine.

[INTERPOSING VOICES]

1--

STUDENT: 2, 3, 4, 5, 6, 7, 8, 9.

TEACHER: So 1 plus 9, all together that makes?

STUDENT: 10!

TEACHER: How do you know?

STUDENT: Because it just makes 10.

TEACHER: It just makes 10? How do you know it makes 10?

STUDENT: Because if you count only you'll see 1, 2, 3, 4-- I mean 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

TEACHER: Do you want to ask Daniel to agree?

STUDENT: Do you agree?

TEACHER: Because?

STUDENT: Because I added 10.

TEACHER: You added to make 10. Why do you agree, Daniel?

STUDENT: [INAUDIBLE]

TEACHER: Wait a second. Your friend Daniel is remembering that during the mini lesson, during the opening phase of our lesson, you did the same one. Do you remember that, too?

STUDENT: Yeah.

TEACHER: Yeah? Are you ready for this one?

STUDENT: Yeah, this one is going to be a little bit tricky.

TEACHER: I heard Brandon saying that this one was really tricky. Brandon, what was tricky about this one for you?

STUDENT: [INAUDIBLE]

TEACHER: Yeah, I know. You were saying that this one was a little tricky. What was a little tricky about this one?

STUDENT: You needed a lot of hearts on the other side.

TEACHER: A lot of hearts on the other side. How many did you end up needing?

STUDENT: One.

STUDENT: Nine. I needed nine.

TEACHER: Wait, that's interesting. Did you need nine?

STUDENT: 1, 2, 3, 4, 5, 6, 7, 8.

TEACHER: You needed nine? So, you both needed nine. That's interesting that you needed the same number of hearts. What do you think about that? What do you think about that? Why do you think you need the same number of hearts?

STUDENT: Because we have the same papers.

TEACHER: Why does that mean that you're going to always get the same number? Do you have 10 yet?

STUDENT: 'Cause this is already 10.

TEACHER: What?

STUDENT: It's already 10.

TEACHER: It's already 10. Is there something that's similar? Brandon, last thing and then you can get back to that one. I'm sorry to be taking away from your PK. There's something, Brandon, come on over and take a look at Daniel's paper, and he'll look at yours, too.

STUDENT: 1, 2, 3, 4.

TEACHER: Is there something similar between these two ways to make 10?

STUDENT: 2, 3, 4, 5.

TEACHER: So, I'm asking Brandon. Let's see what he thinks. Wait, where's the nine? There's nine here. Where's the nine on this one? Right, so that's number nine. Where's the group of nine on this paper? There's a group of nine here, and where's the group of nine here? There's a group of nine, a group of nine and a group of one. That's interesting. Is that what you were thinking?

STUDENT: 2, 3, 4, 5. 1, 2, 3, 4, 5, 6, 7, 8.

TEACHER: That is interesting. That reminds me of something we were talking about earlier. Do you remember that time somebody was talking about the idea of opposites? I wonder if there's something that's opposite, or something similar, about those two.

STUDENT: This is 10.

TEACHER: Is it?

STUDENT: Yes. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

TEACHER: OK, I'm remembering back to the mini lesson, though. Do you remember what somebody did? I'm hearing Daniel say it's 11.

STUDENT: How?

STUDENT: If it's all together, it's a negative.

STUDENT: But I accidentally made that wrong because I was supposed to do this and that.

TEACHER: Can you helps us double check?

STUDENT: No, you didn't X out that one.

TEACHER: Let's find out. I'm hearing Daniel say that together it makes 11. Let's count to find out. OK, hold up.

STUDENT: It's not 11.

TEACHER: We're mathematicians. We're going to count, and we're going to find out, and we're gonna talk about our idea. Hey, Derek. Hold up. You got this.

[INTERPOSING VOICES]

STUDENT: 2, 3, 4, 5, 6, 7, 8, 9, 10.

STUDENT: You can make this. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11. It's 11.

TEACHER: Do you want to and find out?

STUDENT: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11?

TEACHER: Oh my gosh, what did you notice? What did you learn?

STUDENT: [INAUDIBLE]

TEACHER: Oh, how can we get it to 10? Why is X-ing that one out going to make 10?

STUDENT: Because I need to X it out.

TEACHER: You need to X it out, but why is that going to turn it into a 10?

STUDENT: Because I need to turn it into a 10, because that's how the board goes.

TEACHER: Oh, how do you feel about that? It seems like you've been working pretty hard.

[INTERPOSING VOICES]

TEACHER: All right, can you prove to me that it's 10 and then write your number sentence, please?

STUDENT: 1 equals--

TEACHER: Plus?

STUDENT: Plus--

TEACHER: What? 1 plus what?

STUDENT: 1--

STUDENT: 7?

TEACHER: So, you've got a group of one.

[INTERPOSING VOICES]

STUDENT: 1 plus 1, 2, 3, 4, 5, 6, 7, 8, 9.

TEACHER: Yep, nine.

STUDENT: 1, 2, 3-- Wait, I skipped one. 1, 2, 3, 4, 5, 6, 7, 8, 9.

TEACHER: 1 plus?

STUDENT: 1 plus 9.

TEACHER: Nine. So we'll start the nine right there, just so we can see it is the same as?

STUDENT: Same as 10.

TEACHER: Oh, OK, it's the same as 10, and you know because you counted, didn't you?

STUDENT: Yes.

TEACHER: Awesome. Keep going. I'm wondering if somebody has a way to make 10 that they really want to show us. Our friend Eveline, would you come on up, please? I'm really interested to see if you have a way that you would like to share with your friends. How did you make 10 today? I made 10.

STUDENT: I made 10 to where the number said write the hearts--

TEACHER: You wrote the numbers and wrote the hearts. How many hearts were on the two groups that you made today?

STUDENT: 1, 2, 3, 4--

TEACHER: So you can say I have a group of?

STUDENT: I have a group of four.

TEACHER: Uh-huh, and how many hearts are on the other card?

STUDENT: 1, 2, 3, 4, 5, 6.

TEACHER: So, turn and tell your friends I have a group of.

STUDENT: I have a group of six.

TEACHER: You have a group of six. Oh, and she's pointing to the number. That six matches the group of six. What does the four show? The group of the four shows?

STUDENT: The four shows the group of four.

TEACHER: And the 10 shows?

STUDENT: All 10.

TEACHER: The 10 shows all 10. And will you count all 10 for us? I just want to make sure we can really understand what our friend Eveline is saying.

STUDENT: 4, 5, 6, 7, 8, 9, 10.

TEACHER: 10. Abigail, will you repeat what your friend Eveline just explained to us?

STUDENT: Eveline's saying that the four and six makes 10.

TEACHER: You can ask her, is that--

STUDENT: Is that what you said?

STUDENT: Yeah.

TEACHER: Yup. And Abigail, what do you think about that? Do you agree with Eveline? Interesting. Can you bring up the paper that you just put on the top of your pile and show your friends what you have right there? Come on up, please. Yeah, that one. You got it out and I'm interested in why you did. Come on up, please. Eveline, you can go back to your spot. Thank you for sharing your work with us. And I saw you get this paper out. Tell us what you were noticing. We have to be flexible.

STUDENT: I noticed that on mine is the same as Eveline, because--

TEACHER: Say more about how it's the same, please.

STUDENT: It's the same as Eveline because the six is together. It's right here, like three and three is the same as six. And I put four, because there were four here, and I put 10 because it's the same as-- It's all in 10.

TEACHER: It's all making 10. How interesting, how interesting. Steve, what do you think about that? I wonder if that's always going to make 10. Not only do I wonder that, thank you Abigail. What do you think about that? Do you think that's always going to make 10?

STUDENT: Yeah.

TEACHER: Why? I want to go back to where we started, which was Maria's work from yesterday. Is that OK, Maria? Let's go ahead and take a look back at her work from yesterday. Hm. Can I show you something, Monsé, that I just noticed? Can I show you something that I just noticed? And Monsé, I'm going to call you to explain what you're seeing up here. So this is Abigail's work right here, or Eveline's work, right? We saw that 6 plus 4 is the same as 10. Mathematicians, put your eyes up here. Sorry, I know it's a little crowded.

I want you to put your eyes up here at Maria's work from yesterday, and I want you to be asking yourself, Brandon, that fundamental, Emily, question that we were asking ourselves, Emily. I want you to ask yourself a fundamental question, Enrique. What's the same about this work, what's similar, and how does this work different? What's similar about this work, and how is this work different? Put your eyes up here, please. I'm going to give you some time to think about it. In a moment, you're going to turn and tell your partner. You're going to say I think that they're similar because, or I think they're different because, or I'm noticing hm. Turn and talk, What are you noticing? Turn and talk, please.

[INTERPOSING VOICES]

TEACHER: Uh-huh. What do you think about that? Do you agree? Why do you agree?

[INTERPOSING VOICES]

TEACHER: It makes 10? How do you know? What are you thinking? There's a four there, and there's a four over there, and there's a six there, and there's a six there. Those groups are in different places. How does this still make 10?

[INTERPOSING VOICES]

TEACHER: That sounds important. What did you just hear Madden say? If you're in difference?

[INTERPOSING VOICES]

TEACHER: They still make? Hm. Turn back this way, please. Turn back this way, please. I just heard some very important and exciting mathematical ideas. Israel, you and Madden were talking to each other. What were you saying? Would you come on up, please, and tell us what you were saying?

STUDENT: Well, Maria said-- Abigail said the same because there's 1, 2, 3, 4, and there's 1, 2, 3, 4, 5, 6.

TEACHER: Mm-hmm. I heard lots of people who are agreeing that there's four and six, but we were talking about something, when I was listening to you and Madden talk, you were saying the four the six are in different?

STUDENT: Places--

TEACHER: Can you say the whole sentence? The four and the six?

STUDENT: The four and the six are in different--

TEACHER: Hold on, one second. Hold on, one second. So important.

STUDENT: The four and the six are not in the same place, but they're the same.

TEACHER: They are the same?

STUDENT: Number.

TEACHER: The four and the six are in different places, but they're still the same number. Enrique, didn't you say something very similar to that the other day? Do you remember that? We were talking about a two and eight decomposition. Do you remember what you said about that? The two and the?

STUDENT: The two and the eight--

TEACHER: Are in?

STUDENT: Are in different spots--

TEACHER: But it's still?

STUDENT: It's still the same number.

TEACHER: Still the same number. That's so interesting. That idea keeps popping up every single time we're composing and decomposing numbers. I wonder if that's always the case. Mathematicians, thank you so much for your smart thinking. We will keep working with composing 10 on another day. In a moment, I'm going to collect your papers from you, and then you're going to go to outside time. Give yourselves a pat on the back. Your brains really grew they, didn't they? You can give your brain a little brain massage. That's what Ms. Nicole always has do.