

## Intermediate Math Parts Materials Interview

- Interviewer: Please describe the instruction on the materials that you're using for class.
- Teacher 1: The main one is the modeling dough. That involves a little cup of Playdoh for each student and three plastic knives for each table. That's another expectation that we actually have to review. But actually, it wasn't a problem at all. We gave them the trust from the beginning, and it wasn't an issue.
- Plastic knives, or they use their rulers, or they use other things to cut it up, it's not an issue. Then the sheet protector with the sheet of white paper inside, on the backside there's actually a factory game that we played at the beginning of the year, so we're just reusing those as place mats. Every student gets that. The PowerPoint is a big teaching tool for us. We always have a PowerPoint. Not like, "Copy this down," but as we were saying, it has the time in the corner, so how long each section of the class should last, and the actual time.
- Teacher 2: Helps keep us on track.
- Teacher 1: It keeps us accountable, totally.
- Teacher 2: And holds us to a more efficient class. A big one is CMP3 Connected Math from Pearson. That program is the textbook and all the materials that we use to kind of structure the trajectory of the unit. That's kind of where we got the title Finding Parts of Parts. We created the do now together, based on an activity that we did that wasn't in the book. Based on a modification of an assignment that [Kata 00:01:31] created.
- [00:02:00] The kind of extended do now, that they're using the modeling for, is hopefully will be more engaging just because it's something we created, so it's for them. But Connected Math is pretty engaging also. They're going to then, towards the end of class, they're going to be working on investigation 2.1. Which does cover multiplying fractions and finding parts of parts. They're going to be using a brownie example, like fundraising with brownies.
- Interviewer: Sorry, I did not mean to throw you off with the knife.
- Teacher 1: No, it's a very, very valid expression with like "I'm going to give them all plastic knives."
- Interviewer: Absolutely, I'll tell you a story I have [inaudible 00:02:18].
- Teacher 1: Oh, really?
- Interviewer: We had this one clip from this one classroom, and they were making salsa, and there has been a couple random little clips where we just captured things with

cameras. This kid, he's got this real knife, they're cutting tomatoes and stuff like that, he's just in the corner of the frame and he's going.

Teacher 1: Oh, man. Well, let us know if you see any of that tomorrow.

Interviewer: No, I'm just kidding, but it was a real knife. Why did you consider choosing these materials?

Teacher 1: The modeling dough came from me lying in bed, being like "How am I going to teach fractions? They were so scary to me." And having a boss that says, "Yeah, go put Playdoh in the room, great, go for it."

Teacher 2: Didn't we find a Pinterest articles? No, that was Legos.

Teacher 1: Yeah, that was Legos.

Teacher 2: I saw this cool post that was using Legos to teach fractions, which was really cool, and started getting me thinking, "Oh my god, how are we going to teach fractions?" Then Kata was like, "I've got it. Let's give them all Playdoh." And I was like "Oh, no. Oh, yes. That sounds great and messy and fun." So we did that.

Teacher 1: We've done it twice, and it's worked so that's kind of our decision to continue to use it. And it's always in the room if you want to opt in to use it. Then know when they're working on a problem, even when it's not a Playdoh day, they can still opt to use it.

[00:04:00] What materials. CMP3 is the curriculum we use here, but we enjoy it. It helps guide our investigations, it's very-

Teacher 2: Sometimes we take lessons out of order, or we decide to do things a little bit different. CMP3 is a very investigative approach, so it allows students to dig in and figure out the concepts. In fractions, we've found that partially due to our own experiences with fractions, they can be kind of scaring, speaking for myself here, so we decided we are letting them investigate fractions. Then we're teaching them rules. There are some rules, you can't amorphously talk about fractions, and then estimate however you want. We are making sure to teach them "Here's how you do it, and here's the thought behind it." But, we're making sure to give them time for them to figure out those strategies on their own. Then being like "You're right. These are the strategies we use. Here's why. Let's review that together."

Being a little bit more explicit at times with teaching the skills, just to make sure they're all on that same foundational level. Because there is a wrong way to multiply fractions. We don't want them investigating, then doing it wrong, and then not being told that they're doing it wrong. That's the only issue sometimes with Connected Math. It's a little bit too investigative.

Teacher 1: We have to strike a balance of explicitly acknowledging misconceptions, and addressing, people were just like "Yes, you just cross multiply." What does that mean? Or, "Find the reciprocal." Kind of breaking apart, or unlayering stuff that gets thrown into the investigations and defining words and things like that.

Teacher 2: Preconceptions.

Interviewer: What is it that you like about the materials?

Teacher 2: [00:06:00] Overall, I do love the investigative approach of Connected Math. It's really great. Last year it was super scary to work with for me, not being a confident math teacher. It was really hard because I was unsure how to do it. Seeing as it's my second year with the curriculum, I really like it. It's really great the way it lets students figure out and play with the concepts before giving them a foundation.

Teacher 1: I feel the same way about it. I love it because it's like "Try it out, see what happens. What could Amy do with her brownies at the fundraiser?" But it does rely a lot of students taking very clear notes in class when we do that explicit instruction. They get a flimsy workbook that you technically could write it, but they don't because we reuse them every unit. They get a flimsy workbook every unit. We reuse them year to year, I just wanted to clarify that.

But, it's not like you can go back to page 18, and it will tell you how to find a part of a part. It will give a verbal explanation of like "When we over-estimate, we over-estimate in situations where you might want to make sure that you have enough," or things like that. But it won't say like "Here's the mathematical example for how to do it." It does require that they take the explicit notes that we guide them through.

Teacher 2: That has been an issue with parents sometimes, too. Parents are like, "How do we help our kids?" And we're like "Have them look at their notes." And they're like "We can't find them." And we're like "That's why we tell you to take good notes."

Teacher 1: It puts a lot on the students, but I think it's a great growing experience for them

Teacher 2: [00:08:00] And if we scaffold each of the skills, we're really careful not to give homework that's too challenging. You'll see one of the assessment tools that we're using to check for understanding on the lessons that we just finished were adding and subtracting fractions with unlike denominators. One of the lessons that we just have homework for, we're just like some rote problems. We just wanted to ensure that they got that skill. Literally it was good to give that rote homework, even though we usually give more word problems, because we could just take one look and be like "They're not finding common denominators." Like "No, do it again." Then we'd give them a strip. I'd glue a strip of instructions on the top if they didn't find common denominators. Then they'd have to do that over.

We had a couple of kids who came in and were like "Yeah!" And I'm like "Oh, if it was that easy to add the top and add the bottom, you would have learned this in first grade."

Teacher 1: It lets you catch it right away.

Teacher 2: We're going to check for understanding on those two by collecting the homework at the beginning. I don't know where I was going with that. I don't even remember the question.

Interviewer: Tough job. [inaudible 00:09:02] you guys. Are there any changes you would make to the material?

Teacher 2: Maybe for homework. Sometimes it's hard to assign homework because a lot of the homework problems are very challenging, and they're word problems. It can be really hard and challenging to assign students word problems when they're just learning a concept. One of the things I would like to see, is a lot of times we'll get worksheets or make up worksheets, just so we have something where they can practice their skills on. Just like five skill-based problems. CMP3 doesn't always have those practice problems, so we have to outsource.

Teacher 1: We have a bank of just rote. Sometimes you just need to do it four times. Sometimes we'll have students self-identify, like "I just need one more example. I just need one more practice problem." It's not hard to create addition problems with fractions, but it is when you have 15 other, more important things to do. You don't want to think, "All right, I already used seven as a denominator, now I should use eight." You think about that stuff. It seems like it would be simple to make up seven problems, but it just takes more time.

Teacher 2: You need to make sure there are multiples.

Teacher 1: And formatting it.

Teacher 2: You need to make sure they'll know the multiples. That they'll know the LCM for the denominators. It does take a lot of time, and we do spend a lot of time even looking for quality practice sheets. I hate calling them worksheets because it sounds so rote, but you know what I mean, like homework. We want to give them quality homework. Also, we do a lot of differentiation too, because sometimes the homework in the workbook is inaccessible for some of our kids who struggle with foundational math.

Last week I made this literally looking at pies and they had to shade in the fractions, just for continued repetition of those fractions that are occurring all the time. I do wish that CMP3 had a little bit more differentiation options in terms of homework.

Interviewer: How would you describe these materials as meaningful or relevant to the kids'

lives?

Teacher 1: I think CMP3 tries really hard to present problems that kids can relate to. Like they've been to fundraisers, they've eaten brownies. Those little things are relevant to the students. With the manipulatives, the Playdoh, I want to say, is fun for everyone, maybe it's not. It tends to be something that students enjoy. One of our goals, I think we're very good at this, it hasn't been an explicit goal, it's a happy place, it's a fun place. Our math class is a fun, silly place. Silly to a point. But like the wombats and the zoo, we'll have fun with that. We have fun together.

[00:12:00] I think that is a very relevant, personalized. Even if you walk out the door not entirely remembering anything we did today, if you leave math class being like "Oh, okay math class." So often I feel like the students experience, at least with the grownups I talk to now, they're like "Ahhh, math class." That just shows there's a lack of relevance, or a lack of some sort of connection. If their only connection to math class is "We got to play with Playdoh," we're like "You can do a math problem with something you have at home, with a toy that you have at home."

It's okay that my brain, that I would prefer to use just the white board. Because some people push the Playdoh to the side, and just want to draw their own picture. All those little pieces of relevance, like finding the connection for each student. Like, "Maybe you love wombats, great. Talk about wombats, but just do the fractions. Make that your entire zoo." I think those little pieces of relevance [crosstalk 00:12:53]. It's really valuable.

Teacher 2: It's definitely, it takes a lot. It's not just CMP3. It takes a lot to develop a classroom culture around a curriculum, and I think we've really hard to be consistent about that. It's definitely not just the curriculum with the relevance, and the engagement, and things like that. It's our explicit work towards creating a supportive, fun, safe classroom community that builds an overall engagement towards the topic.

It makes kids come in and even if we're doing one about fundraising and brownies, and someone really doesn't care about fundraising and brownies, and already knows how to multiply fractions, you'll still see a level of engagement with them because they understand that this is an important concept, even if it's only practice for them.

We try to get their feedback as much as possible.

Teacher 1: That's what I was going to say. They know the space is there for them. I'm using pizza, and they're like "I don't like pizza." It's like "Fine, sorry, yours is now a pumpkin pie." That's totally okay. They know there's space for them to be like "Can I make mine a square thing of Jell-O, because I prefer Jell-O?" Giving them the flexibility to-

[00:14:00]

Teacher 2: The choices over the little things.

Teacher 1: To identify what works for them, and advocate for it, whether it's just changing what the food is in the problem, or whether it's saying "It's looking like these two are easy for me, I notice at the bottom of the page, there's a more challenging one, can I do that one?" And saying "Yes, go for it." I think those all work together to make it feel like it's more relevant to them. Or that if it's not, it can be.

Teacher 2: Yeah. I mean there are some kids still who are like "Ugh, math." But I think overall, overall they like it. They don't hate it. Mission accomplished.

Teacher 1: Yeah.

Interviewer: Awesome.

Teacher 2: Is that it?

Teacher 1: Oh, thank you.

Interviewer: That's it.