LDOE Acceleration – Asynchronous Module 1 - Transcript

1
00:00:01.770 --> 00:00:20.790
Hello, my name is Mary Davis and welcome to "Classroom Strategies to Scaffold Learning." This is part of the Acceleration in Mathematics asynchronous learning and I'm so happy that you're here with us. I'm from the Charles A Dana Center at The University of Texas at Austin.

2
00:00:23.580 --> 00:00:37.290
So what exactly is this Accelerate Initiative that I referred to? Well, Accelerate is a just-in-time model focused on building upon the assets that your students bring to the learning experience.

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00:00:38.190 --> 00:00:46.680
So then, what exactly are we talking about? What students are we referring to here? Well, we're referring to all students.

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00:00:47.310 --> 00:01:01.170
We truly believe and must believe in order to do what's right for our students that all students can achieve high expectations, regardless of their background, family income, or zip code.

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00:01:02.370 --> 00:01:13.770
And so, through today's asynchronous learning, we hope that you will solidify an understanding of what scaffolding is and the role that it plays an acceleration.

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00:01:14.670 --> 00:01:34.500
And then gain an understanding of four strategies that can be used in any mathematics classroom. These four strategies include number talks, visual aids and as you can see there's a lot of concepts under visual aids, error detection and correction, and finally collaborative placements.

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00:01:35.670 --> 00:01:46.740
Instead of having norms for our online learning, our asynchronous learning, we have what we call community agreements. The first community agreement is to come, as you are.

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00:01:48.030 --> 00:02:05.970

Wherever you are right now is fine. You may be sitting at a school desk; you may be in the workroom; or in a lounger at home; or even sitting out by the pool. That's one of the benefits of having asynchronous videos you can come as you are right now, at this moment.

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00:02:07.080 --> 00:02:13.230
We do ask, though, for this hour that you focus on the learning and try to mute out the life around you.

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00:02:14.790 --> 00:02:21.930
The second one is that learning does not take place within this one-hour video. Learning is going to take place over time.

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00:02:22.890 --> 00:02:34.800
Take what you learn today and use it in your classroom. You might invite others to a discussion over some of the material that you see in this video. Go back and watch it over and over again until you internalize it.

12
00:02:36.150 --> 00:02:46.080
Maybe you'll see something new, with the second or third watch. Continue this learning, since learning is iterative and cyclical in nature.

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00:02:47.310 --> 00:02:57.030
And finally, embrace the pause. There will be times during this video that you need to reflect on something or try something out before moving on.

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00:02:57.750 --> 00:03:10.410
This is why pause buttons were created. You're welcome to pause and re-watch this video as many times as you need while you begin your journey of learning with us. Embrace that reflection time.

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00:03:11.550 --> 00:03:13.980
So let's go ahead and get started.

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00:03:15.270 --> 00:03:26.910
What exactly is scaffolding, and why would we spend this hour talking about it? Well let's talk first about something totally not related to mathematics.

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00:03:27.360 --> 00:03:38.550
Let's talk about learning to ride a bicycle. So would you think I was crazy if I told you that when I took my daughter to ride her bicycle,

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00:03:39.630 --> 00:03:57.060
I sat her down and I gave her a book. And in this book, there were pictures diagrams, descriptions… everything to explain the process of riding a bike fully. I then took her outside showed her to her bicycle and let her go.

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00:03:58.530 --> 00:04:03.930
Yeah. You might really think I'm crazy because we happen to know that that doesn't work.

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00:04:05.370 --> 00:04:13.710
I started my child riding on the back of my bicycle for a long time before I ever even purchased her first bicycle.

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00:04:14.790 --> 00:04:26.220
I let her watch me while I was riding. Then I had someone closer to her age, she had a brother that was two years older than she was, and so I let him show her how.

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00:04:27.270 --> 00:04:40.770
Then we put on some training wheels. And every time you can you can raise those training wheels up just a little bit and so ever so slowly, we would raise those training wheels up just a little bit.

23
00:04:41.670 --> 00:04:56.010
Until the time it was there to take them off she wasn't really using them anyway. But I wasn't ready to let go yet. I wasn't sure. So, for a little bit longer I held onto the back of that bike and ran as far as I could.

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00:04:57.390 --> 00:05:18.150
And then I let go because she was ready. She understood how and had shown progress. This is what scaffolding is all about. It's not new to mathematics, or to an acceleration program. We've used scaffolding, for a long time in all sorts of things in our lives.

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00:05:19.320 --> 00:05:23.520
Scaffolding refers to breaking up concepts, so they can be learned more easily.

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00:05:24.420 --> 00:05:33.060
By implementing scaffolding, teachers can improve the liveliness that students will grasp new materials and retain what they have learned.

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00:05:33.780 --> 00:05:49.650
So it's all about chunking things, making them in digestible amounts and supporting it until they can grasp those new ideas, make those connections, and use it in their mathematics.

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00:05:50.850 --> 00:06:10.620
So you have to realize that when students' unfinished learning does not prevent them from engaging with grade level content (Alright now, that sounded kind of weird, but it means that if they're not so far behind that they don't have something to share

29
00:06:11.760 --> 00:06:25.380
in their class with their grade level content) you can integrate scaffolds for students, based on real-time needs. Okay, think about the bicycle again.

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00:06:26.640 --> 00:06:43.800
A baby is not ready to be put on a bicycle - a real bicycle not the backseat like I was talking about - but a real bicycle. A baby's not ready for that. So, no matter what scaffolds we put in, you know training wheels, whatever, that baby is not ready for it. Right?

31
00:06:44.820 --> 00:06:51.690
So we have to realize that they need to be ready for that on grade level material.

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00:06:52.890 --> 00:07:06.150
They may have unfinished learning in fact most kids have unfinished learning. But it helps motivate them if you can keep them in those on grade level classes.

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00:07:06.660 --> 00:07:18.420
And it really helps them believe in themselves. That's a huge piece of teaching mathematics… making sure that the students have self-confidence and that they believe in themselves.

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00:07:19.620 --> 00:07:23.100
I’m going to give me a second to read these two quotes on this slide before we talk about them.

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00:07:45.000 --> 00:07:58.920
So what I want you to consider now, and if you need to pause and reread them that's fine, but what I want you to consider is, why would it be true that acceleration and scaffolding go hand in hand.

36
00:08:00.810 --> 00:08:07.290
Alright, so the question and, again, you can pause remember we're going to embrace the pause.

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00:08:08.580 --> 00:08:14.040
Why is it that acceleration and scaffolding go hand in hand?

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00:08:20.070 --> 00:08:29.280
This is the acceleration cycle found on the Louisiana Believes website. Let's answer this question that I posed by looking at it through this cycle.

39
00:08:30.360 --> 00:08:44.160
When we diagnose students, it can be done in many ways. There are high stakes tests, screeners, benchmark tests. So, a lot of it comes from

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00:08:45.060 --> 00:09:02.730
more summative assessments. But in reality, a lot of times the diagnosing comes from what you see in the class from day to day. Remember, we talked about the fact that acceleration is just-in-time and that leads to formative assessment.

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00:09:03.960 --> 00:09:05.370
So, as you plan,

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00:09:06.450 --> 00:09:09.480
you can use that information to scaffold learning.

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00:09:10.530 --> 00:09:17.790
Planning for scaffolds and using them could depend on the information you collected, as you delivered

44
00:09:18.810 --> 00:09:28.650
and monitored what was going on in the classroom with your students. So scaffolding belongs throughout this process.

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00:09:30.120 --> 00:09:39.150
So, as promised we're going to look at four strategies that you could take back and use in your class as early as tomorrow.

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00:12:47.220 --> 00:13:01.350
The first way we're going to talk about using scaffolds is using a number talk if you asked a group of students and adults, how to mentally solve this problem you're going to have many different approaches let's look at a few.

47
00:13:05.220 --> 00:13:08.970
80 minus 40 let's use some easy easier numbers.

48
00:13:11.820 --> 00:13:13.560
75 minus 30.

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00:13:14.790 --> 00:13:23.070
But then we still have nine more to subtract so we just going to keep subtracting till we get all nine taken out so 45 minus 5; 40 minus 4.

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00:13:29.130 --> 00:13:37.110
70 minus 30. We went from 75 down 5 to get 70,

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00:13:40.170 --> 00:13:42.300
so we have to add back that 5.

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00:13:44.520 --> 00:13:46.200

53
00:13:47.970 --> 00:13:58.350
We had a negative 39 or minus 39 so we still have to have another minus nine and so that would be a minus 4; 40 minus 4 is equal to 36.

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00:14:01.170 --> 00:14:07.320
This one was my mom's. Remember, I told you that I asked children and adults, so this one

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00:14:08.640 --> 00:14:26.160
is a way that a person might approach it. I'm not saying it is the best way to mentally solve this problem, but you borrow one from the 7. 15 minus 9 will give you the ones digit of six, and then the remaining six minus 3 will give you 3 which is the 10 digit. So you have 36.

56
00:14:28.500 --> 00:14:43.560
We have 39 plus one, will give us 40. We have 40 plus 30 will give a 70. Then 70 plus five will give us 75. So if you look at that second column, right past the plus sign, 1 plus 30 plus 5

57
00:14:43.980 --> 00:14:52.500
is going to give you that 36. Notice that this one is all addition, even though the problem itself is subtraction.

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00:14:55.380 --> 00:15:10.200
And then finally 75 minus 40 is 35 but we subtracted one extra so we have to add it back so then 35 plus one is equal to 36. All valid ways; all get us to 36.

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00:15:14.100 --> 00:15:25.860
Number talks were developed for classroom teachers to engage students in mental math. They're going to really fight with and grapple with interesting mathematics problems.

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00:15:26.460 --> 00:15:45.420
Educators can use number talks regularly as introductions to the days mathematical practice, or you could use them as warm ups for other lessons, or you can use them as stand-alone extended engagements so you could actually use it as a discussion starter for a whole group discussion.

61
00:15:46.740 --> 00:15:52.410
This is a great way to scaffold the learning as students can build on what others add to the conversation.

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00:15:53.520 --> 00:16:04.530
So we're going to look at a class using number talk. Now, the one that we did was on subtraction, but in this classroom that we're going to,

63
00:16:04.860 --> 00:16:21.150
it's a third grade classroom, and she's going to be visiting multiplication. And the multiplication problem, you may want to write this down because it's hard to see on the screen when she's talking about it, so you may want to write this down, the multiplication is 5 times 14.

64
00:16:22.590 --> 00:16:23.220
All right.

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00:16:24.480 --> 00:16:40.350
And as you watch, and please feel free to stop and watch again and again and again, think about this question: How can engaging in number talks help scaffold accelerated instruction to my students?

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00:16:41.430 --> 00:16:45.600
And I've put that on the side of the next slide as we go into her classroom.

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00:16:48.510 --> 00:17:00.120
So this is a "Re-Engaging Lesson" from Inside Mathematics and please remember it's going to be fun watching the whole situation listening to the kids,

68
00:17:00.510 --> 00:17:10.140
but our goal is on the side there: How can engaging in number talks help scaffold accelerated instruction to my students. Let's take a peek.

69
00:17:15.630 --> 00:17:22.200
Teacher: We're going to do an equal groups problem and I'm going to ask you for the total. Okay? So here's how I’m going to write equal groups.

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00:17:23.280 --> 00:17:28.410
Teacher: I don't want you to write anything, I want you to think about what that would be in your head. How could you solve that without writing anything?

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00:17:30.240 --> 00:17:30.630
Teacher: And remember you are going to let me know by doing this.

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00:17:31.920 --> 00:17:34.830
Teacher: If you have more than one answer or one way…

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00:17:35.880 --> 00:17:37.770
Teacher: three or four ways or 10 ways. Celine, what was your answer?
Student: Um, 70?

74
00:17:49.770 --> 00:17:51.990
Teacher: Anybody agree with her that it is 70? Anybody get a different answer?

75
00:17:53.310 --> 00:17:53.580
Student: 69!

76
00:17:56.070 --> 00:17:56.700
Teacher: Did anybody get a different answer?
Student: 84.
Teacher: And another answer?
Student: 56

77
00:18:07.260 --> 00:18:08.130
Teacher: And another answer?

78
00:18:10.110 --> 00:18:14.070
Teacher: Everybody sees their answer up here right now?
Students (in unison): Yes!
Teacher: Alright who wants to tell us how they got their answer?

79
00:18:17.220 --> 00:18:17.730
Teacher: Marlene?

80
00:18:20.490 --> 00:18:21.060
Student: I put 5, 5 um circles

81
00:18:25.830 --> 00:18:27.180
Student: and then I put 14 in each one.

82
00:18:29.610 --> 00:18:30.360
Teacher: So you thought of this? What are these circles?

83
00:18:34.800 --> 00:18:41.670
Student: the 5?
Teacher: Oh the 5 the 5, so there's 1,2,3,4,5 circles and you put 14 in here?
Student: Yeah
Teacher: And what did you put in here?
Student: 14; 14; 14; 14.

84
00:18:47.520 --> 00:18:58.620
Teacher: So if we were going to say this problem in words we would say five groups of 14. Who sees five groups of 14 in Marlene's picture that she visualized in her head? Okay.
Student: Ms. B?
Teacher: Uh-huh.
Student: You can just say 14 times 5. That would be easier then.
Teacher: Okay, hold on one second. Student: Yeah, that's what I did.

85
00:19:01.260 --> 00:19:01.620
Teacher: Just hold on one second.

86
00:19:07.680 --> 00:19:09.600
Teacher: So Marlene tell us about what you did next.

87
00:19:14.370 --> 00:19:14.820

Student: Then I counted them all and I got...
Teacher: What's the first thing you counted?
Student: I counted the ones.
Teacher: So tell me about that.
Student: I counted 4 and then I got 8...12...16...20.

88
00:19:31.980 --> 00:19:45.390
Teacher: So she said, “I counted the ones,” and I thought she meant she counted these ones. Everybody see those ones?
Class: Yes!
Teacher: But then she said, “I counted 4, 8, 12, 16, 20.”

89
00:19:48.630 --> 00:19:51.030
Teacher: Which ones is she talking about?
Several students: The four ones.

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00:19:52.140 --> 00:19:55.980
Teacher, Mia Buljan: So this is a number that has some ones in it and then what is this over here? This is….
Class: A 10!

91
00:19:57.360 --> 00:20:05.160
Teacher: It has a 10 and some ones in it. And every one of them is a 10 with some ones; a 10 with some ones; a 10 with some ones; and a 10 with some ones.

92
00:20:06.480 --> 00:20:26.340
Teacher: So what she did was she put all of these together first and she did it by skip counting: 4, 8, 12, 16, 20. All those fours came together as this number right here, 20. Then what did you do next? Was she done?

93
00:20:27.870 --> 00:20:28.860
Class: No!
Teacher: She’s not done? How do you know she’s not done Chase?
Student: Because…

94
00:20:32.460 --> 00:20:33.510
Teacher: Thank you. You can leave it on my desk and the come sit down.

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00:20:37.110 --> 00:20:38.040
Teacher: To do it or not do it? Okay we'll talk about that in a second, sorry.

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00:20:39.210 --> 00:20:40.680
Teacher: Go ahead. Is she done?
Student: Uh, no. Because she hasn't counted the 10 because uh, 20, that's why she got 70 because she counted these tens. And then she got 70 and then...

97
00:21:01.980 --> 00:21:09.390
Teacher: So when she broke this apart into 10 and 4, she has to do the 4 part but she still has to do the 10 part also. So Marlene, what did that look like when you did the 10 part? Thank you. You can have a seat.
Student: It looked like I counted 10, 20, 30, 40 and then I got 50.

98
00:21:17.250 --> 00:21:25.890
and your last one was… 50? So this was 10; 20; 30; 40; 50. So now you have this.

99
00:21:27.060 --> 00:21:29.040
Teacher: The 4 parts and the 10 parts, and what did you get?
Student: And then I added 20 and 50.
Teacher: 20 and 50 is the same as 70 altogether.

100
00:21:33.870 --> 00:21:41.100
Teacher: So everybody, anybody have a question for Marlene, or do you understand what she did?
Class: I understand.

101
00:21:48.090 --> 00:21:51.360
Teacher: When she broke these apart what Marlene did was she decomposed.

102
00:21:52.620 --> 00:21:53.790
Teacher: This is Marlene's way.

103
00:21:55.980 --> 00:21:57.690
Teacher: Did anybody else break them apart?
Student: I did, in a different way.

104
00:22:01.830 --> 00:22:02.670
Teacher: You did, but you did it in a different way?

105
00:22:05.010 --> 00:22:05.910
Teacher: Okay, we want to hear about those ways. Hold on one second.

106
00:22:14.190 --> 00:22:24.870
So you will remember this is the question that you were supposed to be thinking about. So if you didn't get a chance to do it, pause for just a moment and think back to the video that you watched.

107
00:22:27.540 --> 00:22:33.450
Now, these are some answers that I got when doing a face-to-face session with this exact same thing.

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00:22:36.060 --> 00:22:45.960
It allows all students to contribute. Some may have a basic strategy and others will be at a higher level, but we can describe and discuss both of them.

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00:22:47.460 --> 00:22:58.380
I like that. Remember, we said that as long as you were ready to enter the discussion at the grade level that we can scaffold it. So that definitely was a link.

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00:22:59.940 --> 00:23:03.570
I can see how students are thinking. Wow!

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00:23:05.430 --> 00:23:16.440
That's kind of like that NCTM’s practice “eliciting and using evidence of student thinking.” This is using evidence of student thinking.

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00:23:18.180 --> 00:23:24.270
And finally, one teacher asked, “This is both scaffolding and formative assessment itself, isn't it?”

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00:23:24.930 --> 00:23:34.440
And in reality, it kind of is because not only are you discussing and scaffolding the learning so people can see different viewpoints,

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00:23:34.800 --> 00:23:46.020
but you're also talking about you know finding out how students are thinking. So you're assessing at the same time. It's kind of neat how it links together right there.

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00:23:46.920 --> 00:23:57.570
So hopefully you guys had some others as well, that really showed how number talks can link to help scaffold accelerated instruction.

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00:23:58.530 --> 00:24:09.690
I know that some of you may have a very short amount of time, so if you don't have time to stop right now and do this, please make yourself a note, but what I would consider doing

117
00:24:10.380 --> 00:24:20.490
is pausing right now and thinking about an upcoming lesson that you might be able to use a number talk with your students.

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00:24:21.540 --> 00:24:37.320
And also consider sharing this idea with somebody with your PLC or in your grade level band. It's not just for elementary students. That was just the example that I had on Inside Mathematics. You can use this at any grade level.

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00:24:39.780 --> 00:24:42.510
So now we're going to move on into the visual aids.

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00:24:44.640 --> 00:24:54.840
When presenting a lot of information that could overwhelm students sometimes advanced organizers, as the ones that are going to be shared here,

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00:24:55.290 --> 00:25:08.490
can help the students understand, retain, remember, and use the material. They're just a tool. They're just another tool used to introduce the lesson topic

122
00:25:09.540 --> 00:25:17.280
and illustrate the relationship between what the students are about to learn and the information that they already have learned.

123
00:25:18.840 --> 00:25:31.650
So, it could be from a previous unit; it could be from a previous grade level; it could be just like the summer slide… you know how you just want to figure out exactly what it is that they remembered or didn't remember over the summer.

124
00:25:32.670 --> 00:25:50.370
But keep in mind that acceleration is all about identifying where students are in their understanding and building off of that knowledge to make those connections, so that the grade level content is accessible and that this is exactly the purpose of visual aids.

125
00:25:51.960 --> 00:25:59.280
Now, as we go through this there's going to be a lot of different images on the screen of actual forms that you can use.

126
00:25:59.670 --> 00:26:16.830
So, in the same area on the website that you found this video, you should be able to find a Word and a PDF file of all of these tools provided for you in this so don't think you have to reinvent what you see on the screen; it is provided for you.

127
00:26:17.640 --> 00:26:21.630
So, let's start first talking about the advanced organizers.So let's start first talking about the advanced organizers.

128
00:26:24.090 --> 00:26:33.720
They direct students' attention to what is important in the upcoming unit. They highlight relationships among ideas that will be presented.

129
00:26:34.320 --> 00:26:44.610
And they remind students of relevant information that they already have. They're just bringing it out, right, including facts relationships vocabulary and more.

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00:26:45.660 --> 00:26:55.380
The first one I'd like to share is the Frayer Model. Now some of you have seen this before, but this strategy is an excellent way to define vocabulary

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00:26:55.740 --> 00:27:08.850
and find ways that the target words are applicable in the real world. This strategy allows students to find ways in which this term has been encountered in their real lives.

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00:27:09.540 --> 00:27:23.640
It serves many purposes in developing connections within vocabulary in a visually appealing way for the student. So, look at the four corners of this model.

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00:27:24.630 --> 00:27:35.460
We always have the definition, but this isn't like go to the dictionary and write a definition. Go to the dictionary and read the definition. Or go to your

134
00:27:35.940 --> 00:27:46.470
textbook read the definition whatever. But then you're going to put it in your own words, because it's by restating it that will help you remember it.

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00:27:47.820 --> 00:27:52.320
Then we're going to look for some facts some characteristics of the example.

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00:27:53.760 --> 00:28:04.710
We're going to give some real-world examples some connections, so that when they hear this word again they might go “Oh, I remember that's about this” or “Oh remember that's about that.”

137
00:28:05.850 --> 00:28:14.190
And then you're going to give non-examples of things that it sounds like it could have something to do with, but I want to make sure we steer clear from it.

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00:28:15.780 --> 00:28:25.380
So, an example would be maybe that you could front load some vocabulary, or think about a word wall or word notebooks.

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00:28:26.490 --> 00:28:35.490
Okay, sometimes instead of non-examples in the bottom, and this is going away from the true research from Frayer,

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00:28:36.180 --> 00:28:57.600
but sometimes down there in that non-example, people will instead use a visual. So, you could have a visual as well down there in the corner. But this is all to link many different senses many different connections to that word that we are trying to define.

141
00:28:59.940 --> 00:29:12.180
Then we have a K-W-L chart. And a lot of times people have used a K-W-L chart in teaching professional learning sessions and things like that, but you can use them in the classroom too.

142
00:29:13.260 --> 00:29:20.340
A K-W-L chart, if you read across the top there, we have the know, we have the want to know, and we have the learn.

143
00:29:22.050 --> 00:29:45.510
This strategy works to activate the prior knowledge about a topic as you go into something else. So, you ask them what do they remember about this topic; just brainstorm under “Know.” But then it helps you to see what they have remembered and what you might have to

144
00:29:46.800 --> 00:29:51.930
give them a little kick in the right direction as you're looking down their “Know” column.

145
00:29:53.820 --> 00:30:01.200
The “Learned” is when you want to assess and it is a formative assessment as well, but what when you want to assess

146
00:30:02.460 --> 00:30:03.750

how far they've come.

147
00:30:05.190 --> 00:30:10.590
And then, in the middle that “want to know” section can really help you make those connections again.

148
00:30:11.220 --> 00:30:29.760
Back in the Frayer Model, it was talking about making connections. Here it's talking about making connections. Because when they remember it; when they can make those connections; it makes sense to them. And once something makes sense to them, then they'll remember it.

149
00:30:31.350 --> 00:30:46.230
A specific example that you might use this for is you're going to talk about adding fractions with unlike denominators.

150
00:30:47.070 --> 00:30:52.860
What do you know about fractions? Tell me what you know about fractions. We might talk about numerators and denominators.

151
00:30:53.190 --> 00:31:03.540
You might remember what is like to add with like denominators. You might talk about what pictures you can draw. I mean all that stuff… and it will help the teacher understand where you're coming from.

152
00:31:04.350 --> 00:31:21.630
What do you want to know? What does an unlike denominator mean? How can I add thirds and eighths together? You know you can talk about all the different things that you want to know. And then, finally, of course, at the end, what you've learned along the way They can help you also with

153
00:31:22.710 --> 00:31:23.610

154
00:31:27.390 --> 00:31:32.940
reviewing for a test or something along that way. You can go back and look at what you've learned.

155
00:31:34.200 --> 00:31:41.340
So a connection… I want you to pause for just a moment and think about these two questions that connect to our

156
00:31:42.510 --> 00:31:48.600
acceleration: How can one of these tools help our students with our unfinished learning?

157
00:31:52.950 --> 00:31:59.250
And then: How can we, as teachers, intentionally plan for its or their use.

158
00:32:00.450 --> 00:32:03.720
I suggest that you pause right now think for just a little bit.

159
00:32:07.530 --> 00:32:18.060
So, for the first question, you might consider using the Frayer Model to preload important vocabulary for struggling students, so it isn't an obstacle for their success.

160
00:32:19.080 --> 00:32:26.790
If they come into a lesson understanding the vocabulary that's going to be used, it just gives them a leg up on everything.

161
00:32:28.470 --> 00:32:42.450
The K-W-L are fantastic pre- and post-formative assessments, and the “Wants to know,” as we talked about earlier, can really help make those connections that the teachers need to make in order for them to retain the learning.

162
00:32:45.270 --> 00:32:50.760
When you plan for their use… the second question, you might mix it up.

163
00:32:51.810 --> 00:32:56.460
Think about it: word walls, personal dictionaries,

164
00:32:57.510 --> 00:33:06.420

anchor charts, whole class discussions, individual creations, teacher made that you've got up on the wall.

165
00:33:07.680 --> 00:33:08.880
All those things work.

166
00:33:10.560 --> 00:33:19.200
All those things work. The deal is you've got to get the kids discussing it and internalizing it and making those connections on their own.

167
00:33:20.700 --> 00:33:31.110
And bottom line, you need to those two words on the screen right there intentionally plan for their use when you're planning a lesson.

168
00:33:31.950 --> 00:33:49.770
When you're looking at your and making comments on your lesson itself, make a little star “This would be a great place for a Frayer Model”; make a little star “I think we should do a K-W-L here so I know what they're coming in with”. Be sure to use it as you plan.

169
00:33:52.770 --> 00:33:53.910
Visual aids.

170
00:33:54.960 --> 00:34:03.570
So, there's going to be a lot of visual aids. I've got a lot of different types, so I've divided them up even more. The first one that

171
00:34:04.050 --> 00:34:08.790
we have in the concept developers are a compare and contrast.

172
00:34:09.630 --> 00:34:21.000
So a Venn diagram is one of the most common forms of comparing and contrasting and they use it in both math and you'll also see it used in like English language arts.

173
00:34:21.750 --> 00:34:31.410

So, of course, the two circles are going to represent two different topics, but you hope that they're related in some way, the idea is not to have the middle blank.

174
00:34:31.950 --> 00:34:49.770
It's to compare and contrast, so the overlapping part there is what they have in common. You may see more than just two also it can be three or four circles, of course, the more circles that you add to this the more

175
00:34:51.210 --> 00:35:00.360
convoluted the information becomes so just keep that in mind to not go

176
00:35:01.650 --> 00:35:03.030
too far into that.

177
00:35:04.050 --> 00:35:18.060
The compare and contrast matrix compares two different variables and the events in categories of comparison

178
00:35:19.200 --> 00:35:25.530
you would name across the top you would say we want to talk about their

179
00:35:26.880 --> 00:35:52.710
ease of use and their ability to help teachers plan lessons and then the three things that we'd be looking at would be Venn diagrams number talks and whatever so say you're comparing different categories in more than one item across the top.

180
00:35:54.630 --> 00:36:08.760
It really helps to do it that way, instead of going into the multiple Venn diagrams because it's much more easily seen and compared and then you can go across or down, just like they would do

181
00:36:11.070 --> 00:36:15.030
in a graph or a table or things like that that they are used to using.

182
00:36:16.560 --> 00:36:30.060

These can help students by visualizing how things are related and how they're different so some things that seem very easy to us like the compare and contrast addition and multiplication.

183
00:36:30.780 --> 00:36:38.910
Alright, so students at some point in time might think that addition and multiplication two totally different things well let's start comparing them.

184
00:36:39.390 --> 00:36:51.570
And so, if we talk about addition as being one of them and multiplication as being the other, then that middle part would be talking about things like: it's growing in both instances,

185
00:36:52.110 --> 00:37:02.580
or that multiplication is just repeated addition. You know there's a lot of different things that we can add in the middle there that would be included in both.

186
00:37:03.780 --> 00:37:12.870
For higher math grades, the matrix might come into play more. I'm thinking in high school, thinking about

187
00:37:14.340 --> 00:37:28.410
different function models. You could have those being down the side the function models and then the events and the names across the top could be things like:

188
00:37:29.460 --> 00:37:42.900
“What quadrants are they in?” “What do they look like?” You know things like that. Different ways that you can then remember the different families of functions.

189
00:37:43.920 --> 00:37:51.210
You could also use it like maybe the attributes of parallelograms would work in something like a compare contrast matrix as well.

190
00:37:54.900 --> 00:38:08.190
The next one is sequencing and evaluating. So in general sequencing organizers are a graphic organizer that helps students see this sequential relationship between events.

191
00:38:09.420 --> 00:38:10.020
So,

192
00:38:11.280 --> 00:38:22.470
we want the students, like, for example, when they're problem solving to go, step by step, through the problem. We don't want them to jump right to the solution and think, "Oh well, 12 looks good."

193
00:38:22.950 --> 00:38:35.010
We want them to take that sequence of steps. These are some of the ways that you might be able to share that information with your students.

194
00:38:35.790 --> 00:38:44.220
So the first one, the diamond progression, it talks about what you already now, which is kind of like the "K" from the K-W-L.

195
00:38:44.880 --> 00:39:03.270
It gives you a spot to brainstorm so that you can really think about everything that you could do. It wants you to identify what do you need to find out. That's the center of it all, because we know that a lot of times questions, problem solving questions

196
00:39:04.980 --> 00:39:05.700
will

197
00:39:07.260 --> 00:39:26.550
have a lot of different questions asked from the same data, so we want the students to pull the question out and so it's the center of this diagram. Then we solve it, and then you check it and explain your solution; talk about that reasonableness factor.

198
00:39:27.810 --> 00:39:38.760
The second one is pretty straightforward. It's the problem, the attempted solution, the results you got, and the conclusions you can make from it. With this one

199
00:39:39.570 --> 00:39:51.000

you may need more paper if the results or the conclusions come out wrong, you may have to go back and start again but it's very basic instead of having some huge

200
00:39:51.390 --> 00:40:02.250
acronym or something to remember about how you want to have the kids solve problems. And then, the one that I think that might need the most explanation

201
00:40:02.730 --> 00:40:21.780
is what I refer to as a factor map or a star sequence. This allows the students to write down everything they know about a given situation from the prompt or data and they do a different bit of information in each arrow.

202
00:40:23.100 --> 00:40:27.900
And then the middle section, the star, is all about solving it.

203
00:40:29.040 --> 00:40:40.530
And so, you solve the problem in the center of the star, and then you can go back and make sure that it satisfies all the different pieces that you'd written in the arrows.

204
00:40:42.180 --> 00:40:53.550
That one the kids' kind of like because they like the visual of the arrows because when you first look at it, are you see or arrows and then you realize oh there's a star in the middle there. I think that's kind of cool.

205
00:40:55.050 --> 00:41:00.480
I want to pause and reflect just a little bit as we do at each one. Think about this quote.

206
00:41:03.300 --> 00:41:20.130
Jo Boaler said this: "Mathematics is a subject that allows for precise thinking, but when that precise thinking is combined with creativity, openness, visualization, and flexibility, the mathematics comes alive."

207
00:41:22.530 --> 00:41:38.130
I want you to think about these two questions and, again, you can pause and replay the different sections, if you need to. But what do you believe it is about these visual concept developers that can help mathematics come alive?

208
00:41:39.780 --> 00:41:50.040
And then, how does that coming to life relate to our acceleration in math program? Take a pause for a second and think about

209
00:41:52.560 --> 00:41:53.400
those answers.

210
00:41:56.400 --> 00:42:14.850
So hopefully you thought about something along this: Students that are in this acceleration program have oftentimes been remediated for years, and if even if not, this last year that we've had with the pandemic has everyone feeling unsuccessful, to a certain degree.

211
00:42:15.990 --> 00:42:21.150
So getting students to appreciate the joy of mathematics again is

212
00:42:22.230 --> 00:42:36.840
fantastic. It's going to bring them back to the classroom. It's going to have them digging in and working again, because they need to understand that this unfinished learning is not forever.

213
00:42:39.000 --> 00:42:43.260
So another piece of visual aids is the manipulatives.

214
00:42:44.640 --> 00:42:55.440
So, as shown here on the left we've got all the physical manipulatives on the right is one site that you can find some online

215
00:42:56.550 --> 00:42:58.680
versions.

216
00:43:00.360 --> 00:43:11.130
With long term use of manipulatives and mathematics (and this is from a study that goes all the way back to 1998… Okay? 1998).

217

00:43:12.600 --> 00:43:23.640
there are gains students have gains in the following areas: verbalizing mathematical thinking, discussing mathematical ideas and concepts,

218
00:43:24.330 --> 00:43:32.340
relating real world situations to mathematical symbolism, working collaboratively,

219
00:43:32.970 --> 00:43:51.630
thinking divergently to find a variety of ways to solve problems, expressing problems and solutions using a variety of mathematical symbols, making presentations, and taking ownership in their experiences. All this stuff, just from using manipulatives.

220
00:43:53.730 --> 00:43:56.700
And some people don't understand…

221
00:43:58.140 --> 00:44:13.080
well, it's not that they don't understand… some people struggle with using manipulatives at the higher grade levels, because we do need to wean them off of them, but in reality, here's how it goes. You should start with something concrete,

222
00:44:14.520 --> 00:44:15.690
using manipulatives.

223
00:44:17.190 --> 00:44:31.590
Then you move on it to representational, which is still a form of manipulative but you're just drawing it. You're giving a visual. Then, finally, you moved into the abstract.

224
00:44:33.360 --> 00:44:44.820
As your scaffolding for students, you might find that they didn't get the concrete, so you may need to bring a manipulative in so that they understand the concept.

225
00:44:46.260 --> 00:45:07.410
In this same sense, they might try to draw a picture for you, but that picture is kind of all over the place… you're like, "what does that mean?" Give them some manipulatives to see if they can show you. Because you can't just jump to the abstract, you cannot just jump to the abstract

226
00:45:08.640 --> 00:45:12.180
and figure out that they don't understand something.

227
00:45:13.920 --> 00:45:16.470
So our pause and reflect this time is a little bit different.

228
00:45:17.700 --> 00:45:20.910
What are some reasons why teachers don't use manipulatives more?

229
00:45:22.560 --> 00:45:31.290
I don't even have to give you time to pause to do this, because I know. I was a teacher for 16 years, maybe more, I don't know, anyway…

230
00:45:34.650 --> 00:45:36.420
They

231
00:45:37.590 --> 00:45:46.500
throw them; they destroy them; they make a mess of them; they use them in in-appropriate ways. Hey guess what? It's natural.

232
00:45:48.210 --> 00:45:55.770
And it's not just elementary students. If you're sitting there thinking I just can't use them it's not just secondary it's not even just kids.

233
00:45:56.700 --> 00:46:08.910
I bring manipulatives to workshops, sometimes with teachers and I have had them make patterns of all different sorts on their desk and I've had them create strange things with their

234
00:46:09.600 --> 00:46:18.330
building blocks. It's just human nature! Don't let that keep you from trying them.

235
00:46:19.320 --> 00:46:28.140
What I do is I always give them a chance to play with them first, maybe five minutes at the beginning of class: We're going to start with a new manipulative today,

236
00:46:28.440 --> 00:46:32.700
I thought you guys might like to play with them a little bit before we get started, so here you go.

237
00:46:33.270 --> 00:46:48.810
And then you can go in and they'll be less likely to be focused on the fun of the manipulative and actually think about what's being done with the mathematics. The other reason you probably mentioned was time.

238
00:46:50.790 --> 00:47:00.960
So they take time. They take time to prepare; they take time to teach; they take time in the lesson to use; they take time to clean up, and we just don't have enough time.

239
00:47:02.790 --> 00:47:05.460
So then, why do we use them at all?

240
00:47:08.850 --> 00:47:20.760
There's only one main reason that we might even bother with all this manipulative stuff, and that is at the center of our acceleration cycle

241
00:47:21.330 --> 00:47:34.740
is students; everything is centered on our students. It is best for them, so as we plan, plan for time, effort and issues that you can have around manipulatives.

242
00:47:35.850 --> 00:47:42.720
Find out what ones they have used in years past that might help you make connections with what you're doing this year.

243
00:47:44.190 --> 00:47:46.950
Again, plan for a couple of minutes for them to play.

244
00:47:49.080 --> 00:47:56.730
Monitor their use and get students to explain the connection seen in the manipulatives and what's happening in the mathematics.

245
00:47:57.870 --> 00:48:09.810
But it's all about the students, and I had that long list of reasons and data that has been shown that they help the students in math.

246
00:48:11.130 --> 00:48:13.020
That's why we do what we do.

247
00:48:17.850 --> 00:48:25.410
The last one in this section is called error detection and correction, and there's actually two of them that are under here.

248
00:48:25.860 --> 00:48:31.020
One of them is called “My Favorite No” and one of them is called “Re-Engaging Lessons.”

249
00:48:31.830 --> 00:48:38.670
And they're both in video. The first one is going to be from our friends at The Teaching Channel is called “My Favorite No.”

250
00:48:39.420 --> 00:48:44.580
The second one is from our friends at Inside Mathematics and it's "Re-Engaging Lessons."

251
00:48:45.480 --> 00:48:49.950
What I would like you to do for “My Favorite No”, that's the first one we're going to go to,

252
00:48:50.370 --> 00:48:59.610
is to take a piece of paper, it can be scratch paper it doesn't have to be anything major, right? You're not turning it in, but I want us to have something to jot down things as we watch this.

253
00:49:00.090 --> 00:49:10.320
Because, as we watch I want you to think of what's happening with the teachers or the teacher in the classroom what's happening with teachers and what's happening

254
00:49:11.130 --> 00:49:25.380

with the students. Okay, so I want you to think about the two folks that are seen. What are they learning from this idea of “My Favorite No”? What's the benefit for them?

255
00:49:27.060 --> 00:49:27.450
Okay.

256
00:49:29.070 --> 00:49:30.840
So here we go.

257
00:49:42.360 --> 00:49:51.000
Hi my name is Leah Alcala. I teach eighth grade math, and this is my warm up routine that I do with my students almost every day. I call it my favorite no.

258
00:49:53.850 --> 00:49:54.150
Okay.

259
00:49:55.740 --> 00:50:00.120
Good morning, you guys your warm up is on the board. I'm going to hand out your index cards

260
00:50:01.170 --> 00:50:12.300
I put a warm up problem on the board, hand out index cards to all the kids, have them write their answer, I collect it and then I sorted and then say yes, no yes, no.

261
00:50:13.380 --> 00:50:18.360
I look for my favorite wrong answer; my favorite no and we analyze that.

262
00:50:22.260 --> 00:50:23.940
Four minutes to work on it.

263
00:50:27.750 --> 00:50:32.070
Everyone makes mistakes. We're going to see your mistakes and you're going to see my mistakes.

264
00:50:33.090 --> 00:50:40.410

But a mistake is your opportunity to share with me how much you understand, and if I don't know that you don't know something,

265
00:50:41.670 --> 00:50:45.030
I need to teach you before the test. The test is too late.

266
00:50:46.260 --> 00:50:48.630
This is a great spot for me to teach you.

267
00:50:50.820 --> 00:50:58.920
Make sure your name is on your card. Put your pencil in your pencil spot and pass your cards to the center.
I started my warm up routine

268
00:50:59.640 --> 00:51:08.340
to replace clickers that a lot of classes are buying. So that was a clicker for each student, you ask a question they lock in an answer.

269
00:51:09.090 --> 00:51:13.830
And then you look at your computer screen and you know what percentage of your students understand the problem.

270
00:51:14.790 --> 00:51:23.520
Well, we didn't have the money for that, so instead.
Teacher: Okay, here we go.
I thought, well, what if I gave everyone index cards collected them real quick with their answers already written on it.

271
00:51:23.910 --> 00:51:30.030
And then I can just sort them as quick as possible and find out what percentage of my kids know the answer.
Teacher: No

272
00:51:30.720 --> 00:51:46.050
Teacher: Yes. Costs 40 cents, instead of $15,000.
Yes, so we have quite a few yes's and some very interesting no's. 1, 2, 3, 4…

I then took that a step further, something that I couldn't do with clickers,

273
00:51:46.740 --> 00:51:57.210
look at the ones who are getting it wrong. How far are they from getting it right? And showing that work to the other kids.
Teacher: Okay, my favorite no… someone wrote this.

274
00:51:58.380 --> 00:52:15.210
I say it's my favorite no because I want the kids to first of all recognize what they're about to see is wrong, and I want them to recognize that there's something good in the problem, like there's mistake but it's my favorite no because it showed some good math.

275
00:52:17.550 --> 00:52:21.900
So that's the wrong answer, but they did some things that I love.

276
00:52:22.920 --> 00:52:33.210
What in that problem, am I happy to see?
We always talk about what's right first, so that if it's any students' work, they are like, "Oh, I did do that right."

277
00:52:33.780 --> 00:52:45.900
There is mistake, but the mistake didn't ruin the whole thing.
Teacher: What do I like about this problem? Gavin…
Student: Well um they distributed, both

278
00:52:46.440 --> 00:53:02.190
Student: With the 4x and the -2.
Teacher: Very nice.
Today's lesson was on factoring so I needed to make sure they understood how to distribute.
Teacher: They distributed and what lets you know that they distributed, David.?

279
00:53:03.870 --> 00:53:08.550
Student: How no more parentheses.
Teacher: There are no more parentheses and they didn't just drop the parenthesis...

280
00:53:10.140 --> 00:53:13.080
So they're asked to distribute a term with a variable.

281
00:53:14.880 --> 00:53:16.620
They are asked to distribute twice.

282
00:53:18.810 --> 00:53:25.350
They're asked to distribute a term with a negative sign which is often a very common mistake that kids make.

283
00:53:26.460 --> 00:53:34.770
And my students do not, like, I have three years of CST data now to show that one mistake my students do not make is distributing a negative,

284
00:53:35.370 --> 00:53:46.380
which is amazing, because they used to all the time.
Teacher: Distributing negative two to negative six is positive 12, and that was one mistake I was absolutely looking for, and I did not see,

285
00:53:47.640 --> 00:53:48.630
Teacher: which made me happy.

286
00:53:50.340 --> 00:53:55.230
Not until the very end is we've gone over different sections of the problem that are right

287
00:53:55.890 --> 00:54:11.430
that I will then ask okay now what is incorrect.
Teacher: What does this person not understand? Where's the mistake?
If I get a third of my class raising their hand ready to tell me the mistake, it's pretty high engagement at that point.
Teacher: Mia?

288
00:54:19.980 --> 00:54:29.370
Student: 4x times 2x multiplies to 8x – squared.

Teacher: Very nice. This 4x times 2x multiplies to 8x – squared. Can someone convince me of that? How do we know that 4x times 2x multiplies to 8x – squared?

289
00:54:29.820 --> 00:54:43.590
My low-level students are very engaged. They feel like they're not getting penalized for being wrong. They're not being made fun of. I'm not looking at them. There's no peer pressure at this point. But they're like wow, that's my mistake, and now I understand.

290
00:54:45.720 --> 00:54:51.660
It's very comforting I mean I feel very with my kids all times.

291
00:54:53.010 --> 00:54:57.180
I'm not surprised by what they don't know. They're not surprised by what they don't know.

292
00:54:58.860 --> 00:54:59.850
It's how it should be.

293
00:55:02.310 --> 00:55:05.340
It creates more of a dialogue with me and them.

294
00:55:19.800 --> 00:55:33.990
So you might remember you were supposed to be looking at what the teachers are getting out of this scaffolding strategy and what the students are getting out of this scaffolding strategy, so if you didn't get a chance to do that, you might want to go back and take another look.

295
00:55:35.130 --> 00:55:46.980
But what I saw in this is that the teacher really focuses on that everybody makes mistakes. It's culture building.

296
00:55:47.490 --> 00:55:52.920
And that's going to be really, really important as you're working through this accelerated learning.

297
00:55:53.700 --> 00:56:05.490

The test is too late to teach these concepts. I loved it when she said that. Too often we wait for the summative assessment, and so this is a daily assessment.

298
00:56:06.210 --> 00:56:12.210
Recognize that, even if incorrect, there is good in the problem and that there's high engagement.

299
00:56:12.990 --> 00:56:22.740
So that's really exciting from the teacher's point of view. From the student's point of view, they're able to show their strategy without the fear of admitting that they were wrong

300
00:56:23.190 --> 00:56:39.060
or that they struggled through it. They're showing their work versus just picking a letter, a lot of the online sources, now that you know you can do a warm up and they answer questions and things kind of like a

301
00:56:41.520 --> 00:56:44.370
trivia-type game, that's what it always looked like to me.

302
00:56:45.990 --> 00:56:56.640
That doesn't show their work. This shows their work. And even if they're using a student's work the positives are reinforced and praised, so they may get

303
00:56:57.600 --> 00:57:08.160
some idea of how to change their work, but they're also finding out what they did right and then there's no peer pressure to get it right. We are all going to learn from our mistakes.

304
00:57:08.910 --> 00:57:31.110
And then, finally, this is a huge quote, that I just decided that it really linked the teachers and students together. "It creates more of a dialogue between me and them." And if you if you are doing acceleration correctly that dialogue has to be there because it's a constant

305
00:57:32.610 --> 00:57:44.910
assessment just-in-time instruction and if that dialogue is not there, I'm not sure how you're getting the data that you need in order to succeed.

306
00:57:45.840 --> 00:57:58.410
So now let's go to a classroom where the teacher is re-engaging the students on a problem that many missed on the recent assessment it's called “The Buttons Task.”

307
00:58:01.680 --> 00:58:13.650
So I want you to understand that a re-engaging lesson is not the same as a reteach. That's a huge point of understanding. In reteaching,

308
00:58:13.950 --> 00:58:29.970
you're going through the unit again; you're addressing missing basic skills; you're doing some of the problems over from our practice; and you're focusing on procedures… a lot of times cognitively you've got a much lower level.

309
00:58:31.290 --> 00:58:42.240
In a re-engaging lesson you're revisiting student thinking, by looking at the task itself from different perspectives and critiquing the work.

310
00:58:43.560 --> 00:59:05.280
And critiquing the work… making connections. I think I've said that 100 times during this already. It's so important to make those connections and engage the whole class, so that the cognitive load or the cognitive aspect of this type of re-engaging lesson is usually higher.

311
00:59:06.300 --> 00:59:24.570
So, to do so, you have to look at some student work and so, maybe a test that they took that you have some examples from or a task that they may have done that some people have struggled with. The one that we're going to do, the problem is on the screen.

312
00:59:41.550 --> 00:59:50.730
Well, you could use addition you started with four, and each time you add three so one plus three is 4.

313
00:59:51.120 --> 01:00:01.830
4 plus three is 7. 7 plus three is 10. 10 plus three is 13. 13 plus three would be 16, so the fifth stage would have 16 buttons.

314
01:00:03.870 --> 01:00:15.330
Or you could use, you can look at it and figure out what the pattern is and figure out what you do with the pattern number multiplicatively.

315
01:00:15.660 --> 01:00:24.060
To get the answer so some of you some people may realize that if you went from pattern one the pattern zero, you would have had just that black button.

316
01:00:24.420 --> 01:00:34.560
So that's our starting point, one, and then each time we add three to it, so that's our rate of change, three. So that means that to get our fifth

317
01:00:35.340 --> 01:00:50.100
pattern, we would take one plus three times the pattern number. One plus three times five, we get 16. So either way… it's just looking at different approaches to the same problem.

318
01:00:51.420 --> 01:01:05.310
What I would like you to do as we watch this, as always I'm going to give you a focus… What I would like you to do is to think about how the teacher is scaffolding the learning for his students.

319
01:01:05.760 --> 01:01:21.420
And how can that help us in the acceleration process? Alright, and that will stay up on the screen, while we watch it and let's jump in and see the button re-engaging task in process.

320
01:01:22.800 --> 01:01:33.270
Teacher: On your tables, I've handed each of you a copy of a sheet that I'd like you to take a look at. You might recognize some of your work, but I've left off all names, so nobody knows whose work this is.

321
01:01:34.470 --> 01:01:49.860
Teacher: I thought that it would be great for us to take a look at some of the work that you all were doing on this task. So as we look at this sheet, the directions say at the top, "Here are two different ways of figuring out pattern 11 on the Buttons task." Learner A and Learner B.

322
01:01:50.910 --> 01:01:53.370
Today we're going to refer to these learners as Learner A and Learner B.

323
01:01:56.160 --> 01:02:11.430
Below the two examples, you'll see a question. A series of questions. With your partner, compare and contrast these two different strategies. What is similar? What are the differences? Record some of the things you hear at your table on the lines below.

324
01:02:12.750 --> 01:02:17.700
What I would really like to do right now is to provide two minutes of quiet time for all of you.

325
01:02:19.020 --> 01:02:20.700
Look over the two learners

326
01:02:21.780 --> 01:02:31.980
thinking… their work… and see if you can notice some similarities or differences. Let's have two minutes of quiet work time, feel free to make some notes on your paper.

327
01:02:32.730 --> 01:02:37.890
And then we'll have a conversation. Go ahead and do that now. As I'm walking the room, I've noticed that some people are

328
01:02:38.250 --> 01:02:44.820
writing down questions that they have. I think that's an awesome strategy. So if you're not understanding somebody's strategy, you could write down a question

329
01:02:45.150 --> 01:02:55.380
that when we open it up for conversation, you're free to ask of your partners. Share what you guys think about these two different strategies. What are the similarities? What are the differences?

330
01:02:56.580 --> 01:02:59.100
What are the questions you guys have about these strategies?

331
01:03:00.540 --> 01:03:02.940
Go ahead and have those conversations. I'm going to be listening in.
Student: I like Learner A versions better.
Student: Yeah, but they... Learner A used multiplication and Learner B used addition.
Student: and addition's probably easier...Kind of easier...
Student: Addition could be easier for some people, but if you wanted to make, if you wanted to get it done faster,

332
01:03:23.610 --> 01:03:24.420
Student: then you sh... like, like you should do Learner A's strategy. Like what Learner A did.
Student: Yeah.
Student: Megan, what do you think?
Student: I think the same thing. Learner A made it easier.

333
01:03:39.240 --> 01:03:39.780
Student: I was kind of confused about the first one. The first one was really weird.

334
01:03:44.760 --> 01:03:45.150
Student: Well, I sort of understood the first one, but the second one was kind of confusing,

335
01:03:49.350 --> 01:03:49.920
Student: because why would they just add 4+3+3+3 and so on? It didn't really make that much sense..
Student: Because they hate times-ing.
Student: Well, I guess, that's a way.
Student: If you don't like wasting so much ink and paper.
Student: Well, I, but, you know.
Student: I think the main difference, probably, was that the first person did 11 times 3 plus 1, to find all the buttons, and the other person just added them all.
Student: I know. Also, one person did 4, and the other person did 3 plus 1.
Student: Yeah.
Student: I think that B ...
Student: Oh, that's why they did 4!

336
01:04:14.370 --> 01:04:16.110
Student: Um, I think that Learner A had a good strategy, but they should have, like, included the picture to show that, the black button? Yeah.

Student: I wonder why they did times 3? Oh yeah!
Student: Because there's 3 buttons on
Student: Buttons on a side.

337
01:04:29.580 --> 01:04:30.240
Student: Like, it increases by 3 buttons each time.
Student: Okay, let's write that down.

338
01:04:33.030 --> 01:04:43.470
Teacher: So I heard some really great conversations about Learner A and Learner B's work as I walked the room, I was wondering if I could get someone to report out on what they heard at their table.
Student: For Learner B, I understand how you got, like, 11 3's, but I don't understand where you got the 4 from. So that's my question. Where did you get the 4?

339
01:04:56.550 --> 01:05:05.760
Teacher: I would like to kind of stop there, because I think that Kelsey raises a really good question. I've heard two really good questions about Learner B's strategy. One was, what are all these 3's?

340
01:05:06.540 --> 01:05:10.920
Teacher: and Kelsey's question was, what about this 4? Where is the 4 coming from?

341
01:05:11.850 --> 01:05:20.280
Teacher: The next step in the lesson, you're going to have to split up in your tables. All right? In your table groups, you're sitting with four folks, with this exception. We'll work on that.

342
01:05:21.210 --> 01:05:31.200
Teacher: One side of your table, working in pairs, should really dig deeper with Learner A, and the other side of the table should dig deeper with Learner B. I'll let you guys decide which one.

343
01:05:32.280 --> 01:05:47.820
Teacher: But the next step is for us to dig deep by looking at multiple ways of representing how these learners are thinking about this task.
You'll notice that on all of the tables, I've left you guys with square tiles.

344
01:05:49.380 --> 01:06:01.500
Teacher: The square tiles will really come in handy, I think, for some of us as we are puzzling with the pictorial version of this pattern. So what I mean by that is, I want you to draw a picture.

345
01:06:05.760 --> 01:06:06.720
teacher: I want you to draw a picture

346
01:06:07.770 --> 01:06:11.430
Teacher: of how Learner A or Learner B sees this pattern growing.
Student: Wait, so, 3. So for this one you have to do like a black dot. Right next to it.
Student: So that's staying the same and this is the pattern.
Student: Yeah. It'd be like that. And then pattern 2 would be like ...
Student: It's funny, because pattern 3 goes 3 like this.
Student: Yeah. Same with a pattern on your shirt. It's a pattern.
Student: Okay. Verbal representation. Describe in your own words how Learner B sees the pattern growing. Make sure to mention what is staying the same, and what is changing.
Student: Okay, so...
Student: Staying the same...I don't get how he gets the 4!
Student: Well, I think that he counted, like 1,2,3,4.

347
01:07:21.180 --> 01:07:21.480
Student: And then he did the 3. 1,2,3. 1,2,3.

348
01:07:23.610 --> 01:07:23.940
Student: 1,2,3.
Student: Wait. How do you get the 4?
Student: I think he went like, um, the middle thing is 1,2,3,4.
Student: Oh....
Student: 1,2,3, and then 1,2.3.

349
01:07:35.040 --> 01:07:35.580
Student: That's the pattern of 11.
Student: So there's 1,2,3. 1,2,3. 1,2,3.
Student: Get it?
Student: Mmm hmm yeah.

350
01:07:49.980 --> 01:08:05.790
Student: 1 has to be added to each line, and then plus 3, until we got up to 11.
Student: Not 10?
Student: Until they got up to 11.
Student: 4, 10 – now I get it!
(Heard from another student not being recorded: And then this is 16.)
Student: Yeah. So they basically, kind of like Level 1.
Student: It would add 3 each stage. 3 more each stage.
Student: So it started with the 4.
Student: Yeah.
Student: And it keeps getting bigger, oh, okay. That makes a lot of sense.
Student: You're messed up.
Student: Okay. So, we got this. Red ones explain the

351
01:08:45.960 --> 01:08:46.530
Student: new ones, and the blue ones show the old ones, and the one before, and the one before…
Student: And the one before. And so it shows that for all of them. It could be shown like this, but I don't know. Plus the center.

352
01:09:16.290 --> 01:09:18.900
Teacher: I've asked a couple of learners to come up and talk about where they are right now.

353
01:09:19.920 --> 01:09:20.940
Teacher: How they're thinking about...

354
01:09:24.480 --> 01:09:32.670
Teacher: Learner B's work, that's what I think Christina and Callie, you guys were working on Learner B? So Callie and Christina are going to come up and talk about Learner B.

355
01:09:33.720 --> 01:09:40.470
Students presenting: Well, as you can see here, we think that the person is thinking of it like this, where there's the 4 in the middle, and on the sides there's the 3's.

356
01:09:44.430 --> 01:09:47.400
Students presenting: Then the 3's like that. And see, this is just 4, and this is 4 plus 3. So. That's how we were thinking of it.

357
01:09:53.640 --> 01:09:54.120
Teacher: Questions for Kelsey and Maddie?

358
01:09:56.280 --> 01:09:57.870
Students presenting: Abraham?
Student: If that?

359
01:09:59.340 --> 01:10:12.030
Student: You know, so, it's... pattern 2? There's, um, the new ones are changing? But in pattern 4? It's not changing?

360
01:10:13.980 --> 01:10:23.490
Student: It's like, the orange ones I see are the ones that are changing... But if, in pattern 4,

361
01:10:25.380 --> 01:10:29.430
Student: the changing ones already changed, wouldn't they be the same?

362
01:10:34.230 --> 01:10:37.980
Student: I just, um, pretty much thought of it the same way they did.

363
01:10:39.540 --> 01:10:40.290
Student: But we were thinking because, we didn't think about it

364
01:10:41.310 --> 01:10:47.670
Student: because I think this is what we had discussed earlier, when we had a conversation like this, is that it didn't

365
01:10:48.780 --> 01:11:09.810
Student: start with the 4. But as far as we know, it could have. So, what we were thinking is that the 4, are the ones that are staying the same, because those are the ones that have been there the entire time? They're not the ones, like... 'cause if it had started with just the 1 in the middle? Then the 3 on the sides would be oranger, orange.

366
01:11:14.880 --> 01:11:17.970
Remember, we have these two questions that we were thinking about.

367
01:11:19.080 --> 01:11:24.870
If you didn't get a chance, you might want to go back and watch again and think about these two questions.

368
01:11:26.310 --> 01:11:31.050
But when we talk about how is this teacher scaffolding the learning for his students,

369
01:11:32.160 --> 01:11:42.780
what I saw was that he was getting the students to see other strategies, not just his own, not just their own, and to make connections (there's that word again connections) between the two.

370
01:11:43.560 --> 01:12:05.550
And then he does a great job of bringing discourse into the classroom and being allowed to notice things and ask about things from the lesson, so it gives them that second look and that deeper understanding of what it is that is in the picture.

371
01:12:07.650 --> 01:12:14.760
And then, in the acceleration process, we often get stuck in the deliver step of the cycle,

372
01:12:16.140 --> 01:12:33.420
not using what we have delivered to help us move forward. But monitoring the questions that they asked on one lesson can help us diagnose and plan for future misconceptions moving forward. I really think it's in that

373
01:12:34.890 --> 01:12:38.760
deliver and monitor phase that we can really

374
01:12:39.870 --> 01:12:43.290
get to know what the students know and are able to do.

375
01:12:44.490 --> 01:13:03.630
Does that mean we don't plan? No, that's far from it. This lesson that we saw just as part of a lesson nine minutes of it, I'm sure took a lot of planning: picking the right problems, having the manipulatives, and the conversation starters that he had.

376
01:13:06.060 --> 01:13:12.480
: The last strategy that I'm going to share with you is called the collaborative placemat and

377
01:13:13.740 --> 01:13:31.020
I have a feeling that a lot of you when you put students into a group to work. you have this fear (I did when I was in the classroom) that kids that need the most help are just kind of sitting there listening… if that.

378
01:13:32.820 --> 01:13:47.790
But what you need to realize is that using something like this can still increase student engagement, but also have individual accountability.

379
01:13:48.990 --> 01:14:02.760
So here's how it works. To complete the placemat the teacher poses a question or a task to the students and four students or up to four students work on a different side of this placemat.

380
01:14:04.170 --> 01:14:13.860
And so it may be brainstorming; it may be doing a problem; it may be, you know whatever the case may be, they're doing it on their own first.

381
01:14:15.540 --> 01:14:28.950
Then, when every member of the group is done writing the team shares ideas. And sometimes roles will help here, like a timekeeper to make sure that everybody gets their minute to share or

382
01:14:29.760 --> 01:14:43.620
a taskmaster to make sure that everyone is listening, something like that. So sometimes it helps to have those, but the idea is that then everybody shares their ideas and together, remember,

383
01:14:45.570 --> 01:15:00.390
“The whole is greater than the sum of the parts?” Have you ever heard that statement before? Well, that's basically what this is doing. It’s taking all their ideas and coming together with a group summary… a group consensus… a group answer that

384
01:15:02.040 --> 01:15:16.860
the students can then present or share. So, then the big question, of course, as always, is how do these placements, it’s a great strategy, but how does it relate to the work we're doing with acceleration. Well here's some teachers responses:

385
01:15:18.090 --> 01:15:22.650
This is a great way to activate students’ prior knowledge and to see what students already know.

386
01:15:23.460 --> 01:15:33.120
You know, one person may write down a gazillion things and one person may write down just a couple little things because there are different levels, you know, of unfinished learning

387
01:15:33.570 --> 01:15:50.160
but by having that opportunity to share out what you do know and then come together to share it as one, you can both assess it this way, as well as students can get that help that they need.

388
01:15:51.030 --> 01:15:56.850
It encourages participation from every student and everyone's ideas are discussed and valued.

389
01:15:58.140 --> 01:16:09.120
And finally, students are challenged to think critically and support their ideas. When you're sharing out with everybody, you can ask questions you can, you know,

390
01:16:10.170 --> 01:16:23.370
even if you only have one or two things on your page, you can really still use that information in the final answer by getting that support from the student that presented them.

391
01:16:26.040 --> 01:16:36.300
So, in summary, a note from closing from a couple of our oldest friends that have to do with acceleration and creativity and scaffolding.

392
01:17:07.500 --> 01:17:13.860
Vygotsky said, “What a child can do today with assistance,

393
01:17:15.090 --> 01:17:18.420
she will be able to do by herself tomorrow.”

394
01:17:21.990 --> 01:17:23.820
That's a long time ago that that came out.

395
01:17:25.710 --> 01:17:29.040
But that's scaffolding right there. That's acceleration right there.

396
01:17:30.210 --> 01:17:31.680
Just needs a little assistance.

397
01:17:33.900 --> 01:17:45.480
Then Bruner said, “The essence of creativity is figuring out how to use what you already know in order to go beyond what you already think.”

398
01:17:48.270 --> 01:17:53.340
What you already know can take you other places. Students need to understand that.

399
01:17:54.810 --> 01:18:04.470
Instead of hitting a brick wall, use what you know to take you beyond that brick wall - to take you into different areas.

400
01:18:08.250 --> 01:18:29.490
As we end today, I wanted to just point out a couple of things. We have plenty of supports and resources for Accelerate, Accelerate Math and K 12 Math Planning Resources on your Louisiana Believes site, so please log on there and find out more about this valuable program.

401
01:18:31.260 --> 01:18:38.400
And then, finally, I will leave this on here, as long as you would like me to leave it on here, you have the power to stop the video.

402
01:18:39.180 --> 01:18:51.870
But these are the references, so if there's any part of the references, or of the presentation that you wanted to know exactly where it came from, or how you can get more information about it, this is where you will do that.

403
01:18:54.030 --> 01:19:02.370
Thank you so very much for tuning in today and have a great day, wherever you are.