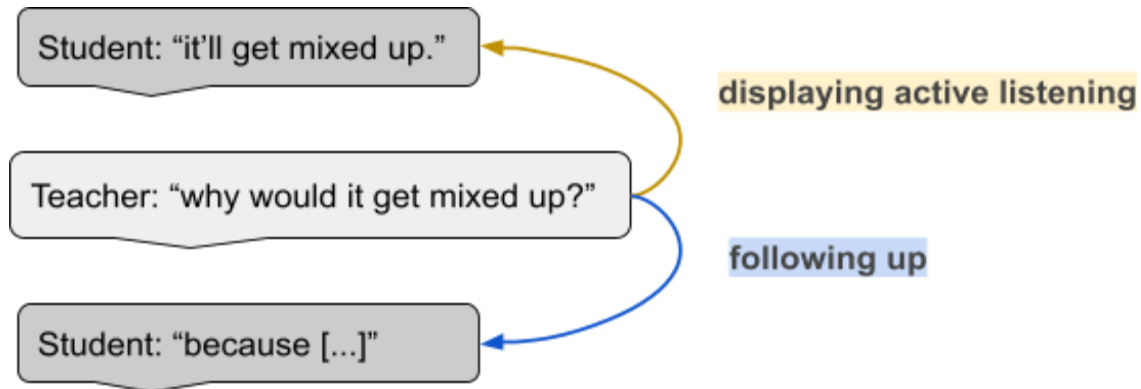


## Annotating Teacher's Uptake of Student Ideas



### Coding items

#### 1. Validity

*If either of these labels do not apply, no need to code the example further.*

Label	Description	Examples
Student utterance relates to mathematics.	Mark if the student's utterance is related to mathematics. Utterances that don't relate to mathematics include: "Can I go to the bathroom?", "Should I bring my scissors?", etc.	<p><u>any utterance that pertains to the mathematical content of the lesson</u></p> <p>Student: "It makes it 100 times bigger.."</p> <p>Student: "I can't do that." (talking about a math procedure)</p>

		<u>asking for clarification / showing lack of understanding</u>  <i>Student: "I don't understand."</i>  <i>Student: "Could you repeat the question?"</i>
Teacher utterance relates to mathematics.	Mark if the teacher's utterance is related to mathematics. Utterances that don't relate to mathematics include: <i>"Why didn't you do your homework?"</i> , <i>"Please raise your hand."</i> , etc.	<u>any utterance that pertains to the mathematical content of the lesson</u>

## 2. Display of Active Listening

*To what degree does the teacher show that they are listening to the student's idea?*

Level	Description	Examples
High	Teacher provides <b>substantial evidence</b> that s/he is following what the student is saying or trying to say, by <b>engaging</b> with the student's contribution	<u>synthesis and/or complex reformulation</u>  <i>Student: "Uh the first 2 numbers the 3 and the 6 in each problem."</i> <i>Teacher: "Okay so <b>Student K is noticing we have a 6 and we have a 3</b>, What's the relationship between the 6 and the 3?"</i>  <i>Student: It's like both the length and like both lengths, like top and bottom, and you add those together and add that to the width and like both sides of width. well, add both sides of the width together and add both of totals together."</i>

		<p><i>Teacher: “Okay, that would give you the perimeter of something like a - it sounds a lot like you’re describing a what?”</i></p>
		<p><u>guiding the student’s thoughts</u></p> <p><i>Student: “So if you have 20, it will be 2,000.”</i>  <i>Teacher: “So if I doubled this end.”</i></p> <p><i>Student: “- 30 plus 20 and then -</i>  <i>Teacher: “which is”</i></p>
		<p><u>answering the student’s question via engagement/demonstration</u></p> <p><i>Student: “Um, actually like for the square isn’t it, isn’t it three lines of symmetry?”</i>  <i>Teacher: “1, 2, 3, 4.”</i></p>
Mid	Teacher provides some evidence that s/he is following what the student is saying or trying to say, but the teachers’ response is more <b> cursory</b> and/or has <b>less engagement</b> with what the student said.	<p><u>repetition, showing consideration of the student’s idea</u></p> <p><i>Student: “You could draw a triangle, too.”</i>  <i>Teacher: “You could also do a triangle, <b>yep</b>.”</i></p> <p><i>Student: “They’ll get mixed up.”</i>  <i>Teacher: “<b>Why would it</b> get mixed up?”</i></p>
		<p><u>surface-level reformulation</u></p> <p><i>Student: “So you have to subtract.”</i>  <i>Teacher: “Someone say 100 <b>minus</b> 30 cents?”</i></p> <p><u>teacher says/asks something related to the student’s utterance, but without really acknowledging the student’s contribution</u></p> <p><i>Student: “Added the three holes and then I used the fours and added it to</i></p>

		<i>the one eighth."</i> Teacher: " <b>Who can explain</b> that to me a little more clearly?"
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simple evaluation (acceptance / rejection)

*Student: "And this and the bottom of flat."*

*Teacher: "Excellent."*

*Student: "Okay, li did it like this."*

*Teacher: "No, no, no. This is a centimeter."*

*Student: And then we did seven times six is 42.*

*Teacher: Okay*

		<p><u>repetition, showing more surface-level consideration of the student's idea</u></p> <p><i>Student: "Oh yeah, you add them."</i></p> <p><i>Teacher: "<b>Okay.</b> When you're <b>adding</b> decimals, you line them up. What about when you're subtracting? Student E?"</i></p> <p><i>Student: 24 divided by 9.</i></p> <p><i>Teacher: No. Divided by –</i></p> <p><i>Student: "And losses. Games.."</i></p> <p><i>Teacher: "<b>No. Total number of games.</b> Total number of games. And my number of wins -"</i></p>
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<p>Low</p>	<p>Teacher <b>does not provide evidence</b> or only <b>very little evidence</b> that s/he is following what the student is saying or trying to say.</p>	<p><u>teacher does not make it clear that s/he heard the student</u></p> <p><i>Student: Two quarts.</i></p> <p><i>Teacher: Where's the card? How many pints is half of a gallon?</i></p>
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		<u>teacher turns to other student</u>  <i>Student: "Forty-six times twenty-four."</i> <i>Teacher: "Student I, what did you get?"</i>
		<u>teacher's utterance is unrelated to the student's utterance</u>  <i>Student: "Because I subtracted 8 from 26."</i> <i>Teacher: "Okay. favorite pet. You're going to vote one time. dog, cat, fish, or bird, all right? dog? thank you. Cat? Fish? Bird? Okay, I had two people that did not vote. Is it possible when you have a survey that somebody doesn't like any of your choices and chooses not to participate?"</i>

### 3. Type of Follow-up

If you selected "mid" or "high" for the previous question, select the kind of follow-up prompt that the teacher presents.

What counts as a follow-up prompt?

- Any request for action or information counts as a **prompt**.
- Any teacher prompt that relates to the student utterance in terms of its topic counts as a **follow-up**. If the teacher's prompt is unrelated in its topic to the student utterance, it doesn't count as a follow-up.
- As long as the teacher's prompt relates to the student's utterance in terms of its topic, it doesn't matter which student the prompt is addressed to. If the teacher asks a question from a different student on the same topic, the teacher's prompt still counts as a follow-up.
  - For example, the following is considered a follow-up prompt even though it is addressed to a different student:  
*S: They've got 16 in them.*  
*T: One of the factors is 16. So from both of the problems, one of the factors is 16. Awesome, Student K. Student S?*

Name	Description	Examples
Focusing	The teacher's prompt is <b>focusing on the student's contribution to develop the math content</b> , by asking the student to communicate their contribution clearly, expecting them to reflect on their thoughts and/or those of their classmates. Teacher seems to be open to investigating the task at hand in multiple ways.	<p><u>prompting the student to provide mathematical reasoning</u></p> <p><i>Student: "Uh the first 2 numbers the 3 and the 6 in each problem."</i>  <i>Teacher: "Okay so student k is noticing we have a 6 and we have a 3, <b>What's the relationship between the 6 and the 3?</b>"</i></p> <p><i>Student: "I added 30 plus 70."</i>  <i>Teacher: "<b>Where did the 70 come from?</b>"</i></p>
		<p><u>prompting the student to explain what they meant</u></p> <p><i>Student: "It is where most of the pennies occur."</i>  <i>Teacher: "<b>What do you mean</b> by most of the pennies?"</i></p> <p><i>Student: "Added the three holes and then I used the fours and added it to the one eighth."</i>  <i>Teacher: "<b>Who can explain that</b> to me a little more clearly?"</i></p>
Funneling	Teacher's prompt is to lead students to a <b>desired procedure or conclusion</b> . Teacher seems to have <b>decided on a particular path for the subsequent discussion</b> and does not seem to allow the students to veer the discussion off from that path.	<p><u>guiding the student's thinking</u></p> <p><i>Student: "- 30 plus 20 and then -"</i>  <i>Teacher: "<b>Which is</b>"</i></p> <p><i>Student: "Do it times two."</i>  <i>Teacher: "Times two, <b>so I know this is part of what?</b>"</i></p> <p><i>Student: "The 4 can't just be left there. it has to be divided too."</i>  <i>Teacher: "So even though i have a 0 right here, I can't just say I'm done because I have to bring down the - oh. All right. Makes sense to me. <b>Well</b></i></p>

		<p><i>how many times will 5 go into 4?"</i></p> <p><u>remediation + prompt for correction</u></p> <p><i>Student: "9 times 9 is 54. 55."</i>  <i>Teacher: "think about your 9 multiplication tables. think. <b>do the nine's trick. I don't see your fraction baby. there has to be a denominator.</b> good."</i></p> <p><u>procedural follow-up prompt</u></p> <p><i>Student: "So there's only supposed to be one answer for three?"</i>  <i>Teacher: "<b>Eventually, yes, because you're going to add those and add those and divide by ten. You should have ten, one, two, three, four, five, six, seven, eight, nine, ten, yes. So add those two together, divide by ten and that will be your mean. Then wait till you get down here though. We have to do--</b>"</i></p> <p><i>Student: "Well this is a whole one. So I'm supposed to color this part, right?"</i>  <i>Teacher: "Well if this is a whole, right, that's a whole, I want you to shade in half of it."</i></p>
No follow-up prompt	Teacher's utterance does not include a follow-up prompt.	<p><u>simple comment / remediation</u></p> <p><i>Student: "So seven and <b>four</b> eighths."</i>  <i>Teacher: <b>Five</b> eighths.</i></p> <p><i>Student: "And this and the bottom of flat."</i>  <i>Teacher: "Excellent."</i></p> <p><i>Student: "You could draw a triangle, too."</i></p>

		Teacher: "You could also do a triangle, <b>yep.</b> "
		<p><u>prompt relates to a completely new topic / task</u></p> <p>Student: "So seven and four eighths."  Teacher: "Okay. Now I want you to turn to your partners and solve question 3 in the book."    Student: "So seven and four eighths."  Teacher: "Okay. On a different note, can someone describe to me what we did in class yesterday?"</p>

### Examples w/ Labels

Example	Labels
Student: "Added the three holes and then I used the fours and added it to the one eighth." Teacher: "Who can explain that to me a little more clearly?"	mid active listening, focusing
Student: "Uh the first 2 numbers the 3 and the 6 in each problem." Teacher: "Okay so Student K is noticing we have a 6 and we have a 3, what's the relationship between the 6 and the 3?"	high active listening, focusing
Student: "- 30 plus 20 and then - Teacher: "which is"	high active listening, funneling
Student: "You could draw a triangle, too." Teacher: "You could also do a triangle, yep."	high active listening, no prompt
Student: "So seven and four eighths."	mid active listening, no prompt

<i>Teacher: Five eighths.</i>	
<i>Student: "You have to read them." Teacher: "You have to read them. And then what do you have to do on your answer paper?"</i>	mid active listening, funneling
<i>Student: "Forty-six times twenty-four." Teacher: "Student I, what did you get?"</i>	low active listening
<i>Student: "Forty-six times twenty-four." Teacher: "Say it again."</i>	mid active listening, focusing
<i>Student: "Do you have another pen?" Teacher: "Say it again."</i>	student utterance is not related to mathematics
<i>Teacher: "Can you save it in your brain all weekend long"</i>	teacher utterance is not related to mathematics

## Comments & FAQ

### 1. What to do with simple acknowledgments (e.g. "uh-huh", "okay")?

Acknowledgments generally count as "mid" for active listening. Exceptions are when the teacher starts saying something completely unrelated afterwards, which would be "low", since in that case the teacher suggests that s/he is ignoring the student's contribution.

- Teacher acknowledges and says something that seems sort of related (“mid”)
 

*S: You have to find a multiple of the two denominators.*

*T: Uh-huh. So remember when we just worked with fractions and not whole numbers?*
- Teacher acknowledges (“mid”)
 

*S: You have to find a multiple of the two denominators.*

*T: Uh-huh.*
- Teacher acknowledges and says something that seems completely unrelated (“low”)
 

*S: You have to find a multiple of the two denominators.*

*T: Uh-huh. What was the homework for today?*

## 2. What if a teacher utterance is long and has parts that are “low” for active listening and parts that are “high”?

Choose the label that you think best describes the whole utterance. If in part of the utterance the teacher shows that they’re really listening to the student, then you should choose “high”.

- The teacher responds to the student’s question in detail, so the utterance is “high” for active listening:
 

*S: When it says this, do you have to put the name?*

*T: No. In 4th grade, these are the five – well, I want you all to know decagon, which is 10. So there’s six that I want you to know and be able to name. If this is a seven sided polygon, that’s fine with me, but I want you to be able to name a triangle, quadrilateral, pentagon, hexagon, octagon, and decagon. Those are the six I want you to be able to name. You can just put seven sided polygon. That’s fine. If it already has it, just write it down. You should know. That’s fine. What do the directions say?*

## 3. What if a teacher / student utterance is partly procedural and partly isn’t?

If the utterance relates to mathematics, even if partially, you should select that the utterance is related to mathematics and annotate the example.

- Teacher utterance is partially procedural, but partially related to mathematics:
 

*S: Twenty-one over thirty-six.*

*T: Twenty-one over thirty-six. All right, see how far you can get. For my friends at MIMIO, I would prefer that you have something fraction related. Thank you. Do I need to reset it for you? Do I need to reset the MIMIO for you? Okay. I think you might be able to – there you go. Thank you.*

4. If a teacher repeats the student utterance verbatim, how should that be coded for active listening?

If a teacher repeats the student utterance, that utterance should be either “mid” or “high” for active listening. If the teacher just repeats the utterance without saying much else or showing consideration for it, then the utterance should be coded as “mid”. If the teacher adds some additional consideration for the student’s contribution (e.g. “yes”, “why?”), then the example should be coded as “high”.

5. Many examples are hard to label without knowing more about the context. How should such context-dependent cases be coded?

It’s true that many examples are difficult to label without knowing more about the context. Just trust your teaching experience when making a judgment. It’s OK if there are edge-cases that are more ambiguous — in fact, there is no “right” answer for most examples. I now included two previous exchanges from the conversation history, I hope that helps!

6. What counts as being “related to mathematics”?

Any utterance that directly relates to a mathematical task / concept.

- Not related to mathematics

*Sit down.*

*Can you help me turn on the microphone?*

- Related to mathematics

*Please check your answers.*

*Discuss your solution with your neighbor.*

*Write down your answer.*

*Let me know if anything is unclear.*

7. Relationship between the length of the teacher's utterance and the coding items

The length of the teacher's utterance should not be too relevant to how it's labeled. If the teacher's utterance is lengthy, but they don't address the student's contribution, then it should be either "low" or "mid".

8. The teacher's utterance is only accepting the student's contribution, but there is no follow-up. How should such examples be rated for active listening?

Follow-up and active listening are two separate things. So, if a teacher accepts the student's contribution, then it should be rated as high or maybe mid, depending on how much they are showing a consideration for it.

9. What if the student is reading something out loud from the textbook?

These cases should be treated the same as all other student utterances, even though the idea does not originate from the student. So, if the teacher responds and engages with whatever the student is reading out loud, that counts as "high" for active listening.

- Teacher engages with what the student is reading out loud

*S: At Miss C's Confection's you can order two kinds of cakes, chocolate or vanilla. You can choose from five different frosting flavors for your cake: fudge, banana, strawberry, vanilla, or lemon. How many different kinds of cake combinations could you order if you choose one cake and one frosting?*

*T: Oh, my goodness. Those are one of those doozies, right? Well let's see how we do it. At Miss C's Confections, you could order two kinds of cakes: chocolate or vanilla. See how I'm visualizing? Right, chocolate or vanilla. You can choose from five different frosting flavors for your cake. What are the five flavors? Who can help me?*

10. What if the student utterance is very short?

The length of the student utterance should not influence the ratings in principle. In practice, however, the teacher might have more opportunity to engage with the student utterance if the student utterance is substantial. So, there is a relationship between the length /complexity of the student's utterance and the teacher's response, but it's more of an indirect relationship, and as much as possible, you should try to code the teacher utterance irrespective of how complex the student's utterance is.

11. What if the teacher builds the student's utterance into their thought process but it's clear that the student just said what the teacher was expecting them to say?

It depends on how much the teacher shows they are engaging with the student's contribution. Generally, if the teacher builds in the student's contribution into their narrative, that's considered "high", but if the teacher's engagement seems cursory, then it'd be considered "mid".