Building Algebraic Thinking
Directions for the Pedagogy and Instructional Practices Survey

Welcome!
Welcome! We would like to hear your thoughts on pedagogy and instructional practices in math. This survey contains 43 questions arranged in 3 sections. We estimate that this survey will take 15 minutes to complete. Please do not use the forward or backward buttons of your browser window as doing so may cause you to lose your responses. You must hit the submit button after each page. This ensures that your data have been saved. All questions require an answer.

Thank you!

Pedagogy Survey Section - 1 of 3

1. I am confident in my ability to use students’ math work to gain insight into student thinking.
   - [ ] Strongly Agree
   - [ ] Agree
   - [ ] Disagree
   - [ ] Strongly Disagree

2. I am confident in my ability to teach algebra.
   - [ ] Strongly Agree
   - [ ] Agree
   - [ ] Disagree
   - [ ] Strongly Disagree

3. I am confident in my ability to select math activities that address my students' weaknesses.
   - [ ] Strongly Agree
   - [ ] Agree
   - [ ] Disagree
   - [ ] Strongly Disagree

4. I am confident in my ability to determine mathematical objectives for my students.
   - [ ] Strongly Agree
   - [ ] Agree
   - [ ] Disagree
   - [ ] Strongly Disagree

5. I am confident in my ability to facilitate student discussions about their math solutions.
   - [ ] Strongly Agree
   - [ ] Agree
   - [ ] Disagree
   - [ ] Strongly Disagree

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6. **I am confident in my ability to ask students about their solution methods.**

   - [ ] Strongly Agree
   - [ ] Agree
   - [ ] Disagree
   - [ ] Strongly Disagree

7. **I am confident in my ability to ask questions that require students to recall information discussed in class.**

   - [ ] Strongly Agree
   - [ ] Agree
   - [ ] Disagree
   - [ ] Strongly Disagree

8. **I am confident in my ability to understand how learning styles of my students may influence their problem solving strategies.**

   - [ ] Strongly Agree
   - [ ] Agree
   - [ ] Disagree
   - [ ] Strongly Disagree

9. **I am confident in my ability to probe students as they explain an answer or a solution method for a particular problem.**

   - [ ] Strongly Agree
   - [ ] Agree
   - [ ] Disagree
   - [ ] Strongly Disagree

10. **I am confident in my ability to probe students as they explain an answer or a solution method for a particular problem.**

    - [ ] Strongly Agree
    - [ ] Agree
    - [ ] Disagree
    - [ ] Strongly Disagree

11. **I am confident in my ability to ask students questions that focus on their specific misconceptions in algebra.**

    - [ ] Strongly Agree
    - [ ] Agree
    - [ ] Disagree
    - [ ] Strongly Disagree

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Pedagogy Survey Section - 2 of 3

12. When students are confused, I try to understand their approach to the solution in order to provide guidance.

☐ Strongly Agree  ☐ Agree  ☐ Disagree  ☐ Strongly Disagree

13. When teaching a new concept, using the intuition of students as a starting point is an effective way to develop learning.

☐ Strongly Agree  ☐ Agree  ☐ Disagree  ☐ Strongly Disagree

14. To understand a new concept in math, students should first be shown completed examples.

☐ Strongly Agree  ☐ Agree  ☐ Disagree  ☐ Strongly Disagree

15. The most important part of instruction is that it encourages 'sense-making' or thinking among students. Content is much less important.

☐ Strongly Agree  ☐ Agree  ☐ Disagree  ☐ Strongly Disagree

16. How much students learn depends on how much background knowledge they have. That is why teaching facts is so necessary.

☐ Strongly Agree  ☐ Agree  ☐ Disagree  ☐ Strongly Disagree

17. I mainly see my role as a facilitator. I try to provide opportunities for my students to share and discuss their thinking and to help them relate their thinking to formal mathematical concepts.

☐ Strongly Agree  ☐ Agree  ☐ Disagree  ☐ Strongly Disagree

18. When students are confused about a problem, teachers should show how to solve that problem.

☐ Strongly Agree  ☐ Agree  ☐ Disagree  ☐ Strongly Disagree

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19. **Students must learn basic skills before progressing on to more complex content.**

- [ ] Strongly Agree
- [ ] Agree
- [ ] Disagree
- [ ] Strongly Disagree

20. **The most important part of instruction is the content of the curriculum. That content is what students need to be able to know and do.**

- [ ] Strongly Agree
- [ ] Agree
- [ ] Disagree
- [ ] Strongly Disagree

21. **It is important to take more or less time on a topic depending on students' responses.**

- [ ] Strongly Agree
- [ ] Agree
- [ ] Disagree
- [ ] Strongly Disagree

22. **I like learning how to use technologies (e.g., calculators, computers, etc.) in math instruction.**

- [ ] Strongly Agree
- [ ] Agree
- [ ] Disagree
- [ ] Strongly Disagree

23. **The use of technologies (e.g., calculators, computers, etc.) in math is an aid primarily for slow learners.**

- [ ] Strongly Agree
- [ ] Agree
- [ ] Disagree
- [ ] Strongly Disagree

**Pedagogy Survey Section – 3 of 3**

24. **How often do you ask students to make conjectures and draw influences?**

- [ ] Daily
- [ ] Every other day
- [ ] Weekly
- [ ] Monthly
- [ ] A few times per school year
- [ ] Never/Almost Never

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25. **How often do you ask students to use the Internet to find information?**

- Daily
- Every other day
- Weekly
- Monthly
- A few times per school year
- Never/Almost Never

26. **How often do you ask students to use math software on the computer?**

- Daily
- Every other day
- Weekly
- Monthly
- A few times per school year
- Never/Almost Never

27. **During instruction, how often do you incorporate computer technology into a lesson?**

- Daily
- Every other day
- Weekly
- Monthly
- A few times per school year
- Never/Almost Never

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### 28. How often do you exchange ideas with other teachers in the school or district about using technology in the classroom?

- Daily
- Every other day
- Weekly
- Monthly
- A few times per school year
- Never/Almost Never

### 29. How often do you exchange ideas with other teachers in the school or district about using technology in the classroom?

- Daily
- Every other day
- Weekly
- Monthly
- A few times per school year
- Never/Almost Never

### 30. How often do you ask students to explain an answer or solution method for a particular problem?

- Daily
- Every other day
- Weekly
- Monthly
- A few times per school year
- Never/Almost Never

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### 31. How often do you ask students to discuss different ways to solve a particular problem?

- [ ] Daily
- [ ] Every other day
- [ ] Weekly
- [ ] Monthly
- [ ] A few times per school year
- [ ] Never/April Never

### 32. How often do you ask students to demonstrate or explain their work to the class (individually or in a small group)?

- [ ] Daily
- [ ] Every other day
- [ ] Weekly
- [ ] Monthly
- [ ] A few times per school year
- [ ] Never/April Never

### 33. How often do you ask students to use mathematical applets?

- [ ] Daily
- [ ] Every other day
- [ ] Weekly
- [ ] Monthly
- [ ] A few times per school year
- [ ] Never/April Never

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34. **How often do you ask students to work on problems for which there is no immediately obvious method of solution?**

- [ ] Daily
- [ ] Every other day
- [ ] Weekly
- [ ] Monthly
- [ ] A few times per school year
- [ ] Never/Almost Never

35. **How often do you ask students to verbally communicate their solutions and reasoning to solving math problems?**

- [ ] Daily
- [ ] Every other day
- [ ] Weekly
- [ ] Monthly
- [ ] A few times per school year
- [ ] Never/Almost Never

36. **How often do you have students respond to one another or debate ideas?**

- [ ] Daily
- [ ] Every other day
- [ ] Weekly
- [ ] Monthly
- [ ] A few times per school year
- [ ] Never/Almost Never

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37. How often do you collect and reflect on students' work for the purpose of informing your instruction?

- Daily
- Every other day
- Weekly
- Monthly
- A few times per school year
- Never/Almost Never

38. How often do you collect and reflect on students' work for the purpose of informing your instruction?

- Daily
- Every other day
- Weekly
- Monthly
- A few times per school year
- Never/Almost Never

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Please rate items 31-32 according to the following:

1. I need help developing knowledge and skills in this area
2. I feel confident but occasionally seek guidance from others
3. I feel confident with a little guidance from others (I don't see much difference between 2 and 3, can you make them more different?)
4. I feel fully confident in my knowledge and skills

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<tbody>
<tr>
<td>39. Identifying common student misconceptions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<td>40. Recognizing different levels of algebraic thinking in my students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<td>41. Incorporating different types of activities in math teaching</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>42. Implementing a variety of teaching strategies that incorporate inquiry-based learning</td>
<td>1</td>
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<td>43. Using technology to support teaching and learning math</td>
<td>1</td>
<td>2</td>
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