

**OMB Clearance Request
Promoting Student Success in Algebra I**

**Appendix B: Protocols for
Curricular Alignment**

March 2014

PROMOTING STUDENT SUCCESS IN ALGEBRA I

Curricular Alignment Topical Area

District Math Leader Interview

Name:	Title:
District:	State:
Interviewed by:	Date:

INTRODUCTION AND BACKGROUND

Good morning/afternoon. First of all, thank you so much for being here and for being willing to participate in this project for the U.S. Department of Education. Before we start, we would like to introduce ourselves, provide a little background on our work, and answer any questions you might have.

My name is [name], and this is [name of the other site visitor]. We are researchers from American Institutes for Research and Windwalker Corporation, organizations that conduct research and technical assistance in education. We are here today to interview you as part of a collaborative effort to provide program developers and administrators with information to promote student success in Algebra I. We are particularly interested in Algebra I because it's a gatekeeper course in that it's a prerequisite for subsequent high school mathematics and science courses considered essential for getting into college. So, it is an important stepping-stone for success in high school and college.

We selected your district because your district has an interesting approach to the vertical alignment of mathematics curriculum in preparation for Algebra I instruction. By vertical alignment, we are referring to the framework in which math curricula are sequenced so that students are introduced to skills and understandings in earlier grades that provide the foundation for their understanding of algebraic concepts.

As part of this project for the U.S. Department of Education, we are speaking with teachers, math department leaders, school administrators, district staff, and students about the instructional practices employed that contribute to student success in Algebra I. With respect to district officials, we are interested in your perspectives on how the Algebra I curriculum is being developed and implemented and the curriculum's success in achieving its goals. The data we collect will be used to develop technical assistance tools to help program developers and administrators implement similar programs to support struggling students.

I'll talk more about the topics of this interview, but for now, are there any questions about the project or why we are here?

DESCRIPTION OF INTERVIEW PROCEDURE AND CONFIDENTIALITY

Next, I'd like to say a few things about the process for this discussion. Responses to this data collection will be used to summarize findings in an aggregate manner (within a school or district), or will be used to provide examples of implementation in a manner that does not associate responses with a specific site or individual. In the publications, pseudonyms will be used for each site. The project team may refer to the generic title of an individual (e.g., "project director," or "eighth grade teacher") but neither the site name nor the individual name will be used. All efforts will be made to keep the description of the site general enough so that a reader would never be able to determine the true name or identity of the site or individuals at the site. The contractor will not provide information that associates responses or findings with a subject or district to anyone outside the study team, except as required by law.

I'd like to ask you to sign a consent form before we begin. It outlines some of the issues I've just mentioned with regard to confidentiality. Please take a minute to read it and let me know if you have any questions.

PRA Burden Statement

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1810-xxxx. Public reporting burden for this collection of information is estimated to average 31 hours for curricular alignment, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is voluntary. If you have comments or concerns regarding the status of your individual submission of this survey, please contact (Project Director, Kirk Walters, at the American Institutes for Research at 202-403-5838 or at kwalters@air.org) directly. [Note: Please do not return the completed survey to this address.]

Are there any questions before we get started?

Notes to interviewer:

- Throughout the interview, possible probes are set aside following each general question. We would like to gather information relative to each of those probes. If, when the general question is asked, the respondent provides the information requested by the probes, you do not need to ask the probing questions. In addition to providing additional information, asking the probing questions may help move the interview pace or may prompt a less talkative respondent. Keep the tone conversational and comfortable.

- To the extent that this information can be retrieved from other data sources (e.g., school records) beforehand, document that information below prior to the interview. During the interview, prompt the District Official to confirm its accuracy if his or her initial response does not do so.

BACKGROUND ON ROLE AND EXPERIENCE

Let's begin with some information about you.

- 1. Can you tell me a bit about your background and how you came to serve as the mathematics coordinator for [district name]?**

Listen for:

- o How long have you worked for [district name]?*
- o How long have you served as the mathematics coordinator?*

- 2. Could you describe your current role in the district? What are your primary responsibilities?**

Listen for:

- o Do you work directly with teachers? If so, in what way(s)?*
- o Do you work directly with curriculum development? If so, in what way(s)?*

IMPETUS FOR AND DEVELOPMENT OF CURRICULAR FRAMEWORK

I understand that in {insert year} your district developed [began using] a curricular framework that aligns mathematics curricula across grades so that students are prepared for Algebra I. By curricular framework, I am referring to a list of standards and the grades/courses in which students are expected to be proficient with those standards. With the next several questions, I'd like to get a better understanding of why and how the framework was developed [adopted].

- 3. Can you explain how the curricular framework is vertically aligned to ensure student preparation for Algebra I?**

Listen for:

- o What important skills and understandings are emphasized in the early grades?*

- 4. Was this curricular framework developed, or was it an existing framework that the state/district adopted?**

- 5. What prompted the effort to adopt/develop this particular curricular framework?**

Listen for:

- o Was it a state or district initiative?
- o What was the rationale for doing so?
- o Was improved preparation for Algebra I a consideration?

Note to interviewer:

If the curricular framework is an existing framework that was adopted, continue with questions 6 and 7 and then skip to the Implementation of Curricular Framework section. Otherwise, go to question 8 and continue through the rest of the protocol.

6. Was an emphasis on particular mathematical skills/understandings in early grades a factor in the decision? If so, what particular skills/understandings were of interest?

Listen for:

- o Fluency with whole numbers and whole number operations
- o Fluency with fractions and fraction operations
- o Skill in geometry and measurement
- o Emphasis on algebraic thinking

7. To what extent was the sequencing of content a critical factor in selecting/developing the curricular framework? Please explain.

Listen for:

- o To what degree was the structure of mathematics a consideration?
- o To what degree were learning progressions (the pathway through which student learning progresses) a consideration?

8. Were you involved in the development of the curricular framework? If so, do you feel like your contributions were valued and reflected in the current framework?

9. Can you describe in detail how the curricular framework was developed?

Listen for:

- o Who was involved in the developing it, and what were their roles?
- o What specific roles did district representatives have compared to school leaders or teachers?
- o How long did it take to develop the framework?

10. In developing the framework, were specific skills or understandings emphasized in the earlier grades?

If yes, listen for:

- o What specific skills were emphasized (fluency with whole numbers, fluency with fractions, skill in geometry and measurement)?
- o What specific understandings were emphasized (conceptual understanding of whole numbers and whole number operations; conceptual understanding of fractions and fraction operations; algebraic thinking)?

11. Can you briefly describe the process you used for determining how these topics should be sequenced across the elementary- and middle-grades mathematics courses that come before Algebra I?

Listen for:

- o To what degree was the structure of mathematics a consideration?
- o To what degree were learning progressions (the pathway through which student learning progresses) a consideration?

12. We understand that your district provides tools to support the implementation of this curricular framework. [If necessary, explain: tools for sequencing/pacing, activities, assessing students.] What was the process for developing/selecting these tools?

Listen for:

- o Who was involved and what were their roles?
- o What features of these resources were important in the selection/development process?

IMPLEMENTATION OF CURRICULAR FRAMEWORK

Now that we have a better sense of how the framework was selected/developed, I am interested in how it is implemented.

Implementation Features and Context

13. Can you describe, more specifically, what implementation of the curricular framework is intended to look like in [schools or] classrooms within the district?

Listen for:

- o How do teachers emphasize algebraic thinking in the elementary and middle grades?
- o How do teachers develop fluency with numbers and fractions in the elementary and middle grades?

Tools Supporting Implementation

Now, we would like to ask specific questions about tools or resources that the district provides to support teachers' [and schools'] implementation of the curricular framework.

14. You provided us with a copy of the curricular framework. In what ways are teachers expected to use this framework in their instruction?

Listen for:

- o Are teachers expected to teach only the standards listed for their grade/course level or can they teach additional standards if they choose?*
- o Are teachers expected to teach the standards in the order listed for their grade or do they have the flexibility to teach the standards in whatever order they choose?*
- o Are there accompanied planning documents that they should use?*

Note to interviewer:

We expect that in addition to the curricular framework, which lists standards and grade levels for each standard, the district may provide additional planning resources that (a) outline units and associated standards and/or (b) specify the amount of time that should be spent on each standard/unit.

For each document of this sort, ask the following question:

15. You provided us with {insert planning resource}. In what ways are teachers expected to use this document in their instruction?'

Listen for:

- o How does this document support implementation of a curricular framework that supports student preparation for Algebra I?*
- o Are they required to follow the pacing/sequencing/organization specified in this document or do they have the flexibility to make changes?*

Note to interviewer:

We also expect that the district may provide us with instructional resources to be used directly in instruction. These may include a set of activities, access to online resources, and/or a textbook.

For each resource of this sort, ask the following question:

16. You provided us with {insert instructional resource}. In what ways are teachers expected to use this resource in their instruction?'

Listen for:

- o How is this resource intended to support teachers' implementation of the curricular framework?*
- o Is this curricular resource required or suggested for teachers?*
- o If required, are they expected to implement this resource as specified, or are they to use it only as a guide?*

Note to interviewer:

The district may provide additional resources. These could include, but are not limited to, an annotated curricular framework that describes the mathematics associated with each standard or a document that outlines the vertical nature of the standards.

For each resource of this sort, ask the following question:

17. You provided us with {insert additional resource}. In what ways are teachers expected to use this resource in instruction?

18. What additional tools or resources would be helpful for successful implementation of this curricular framework?

Teacher and Leader Support

19. What types of training or professional learning opportunities are available to teachers to support their implementation of the curricular framework? What about principals and teacher leaders?

NOTE: These could include, but are not limited to, workshops, webinars, instructional coaching, and professional learning communities.

Listen for:

- o What is the format for this training (e.g., webinar, in-person, Web-based materials to review)?*
- o Who provides the training, and who receives it?*
- o When and how often does the training occur? Is training provided only once or repeated regularly (e.g., annually, biannually)?*
- o What are the training objectives?*
- o Is there anything that is not currently covered in the training that should be?*
- o What resources, financial or otherwise, are needed to support this training?*

20. In what ways do you, as the district mathematics coordinator, support teachers and schools in implementing the curricular framework?

Listen for:

- o How frequently do you meet with them individually or collectively? For what purpose?*
- o To what extent do you monitor teachers' progress in implementing the framework?*
- o Do you conduct classroom observations? Do you conduct walkthroughs? If so, how often? Do you provide feedback to teachers and/or school leaders?*

Implementation Challenges

21. What are the major challenges that schools and teachers face in implementing the curricular framework? In what ways have you addressed these challenges?

Listen for:

o What strategies did and did not work and why?

22. What are the major challenges that your district has faced in implementing the curricular framework? In what ways have you addressed these challenges?

Listen for:

o What strategies did and did not work and why?

23. What changes would you make to increase success in implementing the framework?

OUTCOMES OF THE CURRICULAR FRAMEWORK

Next, I would like to talk about whether you think this approach to curricular alignment has been successful in your district.

24. How is success of a curricular framework that is vertically aligned to support student preparation for Algebra I measured?

Listen for:

o Is success in Algebra I (as measured by pass rates, grades, etc.) one of the measures?

o Are standardized test scores one of the measures?

o Is enrollment in advanced math courses one of the measures?

o Are there other measures?

25. Has the framework been successful according to these measures? Why or why not?

26. Do you think the implementation of the framework benefits certain students more than others? Why or why not?

27. What feedback have you received from teachers and school administration regarding the effectiveness of the framework?

Listen for:

o Are students prepared for Algebra I?

o Do teachers feel supported?

FINAL THOUGHTS AND CONCLUSION

OK, please take a step back to provide some key take-away thoughts from this interview today.

28. What do you think are the key components—the active ingredients—of a curricular framework that is vertically aligned to support preparation for Algebra I?

29. Do you have anything else that you would like to add before we conclude this interview?

Those are all the questions I have. Thank you for your time and for participating in this project.

PROMOTING STUDENT SUCCESS IN ALGEBRA I
Curricular Alignment Topical Area
Mathematics Coordinator/Department Chair Focus Group

Name:	Title:
School:	District:
Interviewed by:	Date:

INTRODUCTION AND BACKGROUND

Good morning/afternoon. First of all, thank you so much for being here and for being willing to participate in this project for the U.S. Department of Education. Before we start, we would like to introduce ourselves, provide a little background on our work, and answer any questions you might have.

My name is [name], and this is [name of the other site visitor]. We are researchers from American Institutes for Research and Windwalker Corporation, organizations that conduct research and technical assistance in education. We are here today to interview you as part of a collaborative effort to provide program developers and administrators with information to promote student success in Algebra I. We are particularly interested in Algebra I because it's a gatekeeper course in that it's a prerequisite for subsequent high school mathematics and science courses considered essential for getting into college. So, it is an important stepping-stone for success in high school and college.

We selected your district because your district has an interesting approach to the vertical alignment of mathematics curriculum in preparation for Algebra I instruction. By vertical alignment, we are referring to the framework in which math curricula are sequenced so that students are introduced to skills and understandings in earlier grades that provide the foundation for their understanding of algebraic concepts.

As part of this project for the U.S. Department of Education, we are speaking with teachers, math department leaders, school administrators, district staff, and students about the instructional practices employed that contribute to student success in Algebra I. With respect to math department leaders, we are interested in your perspectives on how the Algebra I curriculum is being developed and implemented and the curriculum's success in achieving its goals. The data we collect will be used to develop technical assistance tools to help program developers and administrators implement similar programs to support struggling students.

I'll talk more about the topics of this interview, but for now, are there any questions about the project or why we are here?

DESCRIPTION OF INTERVIEW PROCEDURE AND CONFIDENTIALITY

Next, I'd like to say a few things about the process for this discussion. During our session today, I'll be asking you some questions, and [another site visitor] will be taking notes on what you are saying. [S/he] will not record your names. If you don't mind, I would also like to record our conversation simply for note-taking purposes. No one outside of our project team will hear the recording; it will just be for our own reference. If you would like us to turn off the recorder at any point, just let me know. Would that be OK?

I want to assure you that we will treat the information you provide in a confidential manner. The recorded interview will be transcribed by a member of the project team, and only selected research staff will have access to the data, except as required by law. We will not use your name or attribute any quotes to you, instead, we will use pseudonyms in practice profiles. All efforts will be made to keep the description of the site general enough so that a reader would never be able to determine the true name or identity of the site or individuals at the site. Therefore, no one who reads the profiles of practice will know that the statements came from you.

I'd like to ask you to sign a consent form before we begin. It outlines some of the issues I've just mentioned with regard to anonymity and confidentiality. Please take a minute to read it and let me know if you have any questions.

Are there any questions before we get started?

Notes to interviewer:

- Throughout the interview, possible probes are set aside following each general question. We would like to gather information relative to each of those probes. If, when the general question is asked, respondents provide the information requested by the probes, you do not need to ask the probing questions. In addition to providing additional information, asking the probing questions may help move the interview pace or may prompt a less talkative respondent. Keep the tone conversational and comfortable.

- To the extent that this information can be retrieved from other data sources (e.g., school records) beforehand, document that information below prior to the interview. During the interview, prompt the Mathematics Coordinator to confirm its accuracy if his or her initial response does not do so.

BACKGROUND ON ROLE AND EXPERIENCE

Let's begin with some information about you.

- 1. Can you each tell how long you have worked in the district and in your current role?**
- 2. Could you each briefly describe your current role and primary job responsibilities?**

Listen for:

- o Do you work primarily with elementary or secondary teachers? If so, in what way(s)?*
- o Do you work directly with curriculum development? If so, in what way(s)?*

IMPETUS FOR AND DEVELOPMENT OF CURRICULAR FRAMEWORK

I understand that in {insert year} your district developed [began using] a curricular framework that aligns mathematics curricula across grades so that students are prepared for Algebra I. By curricular framework, I am referring to a list of standards and the grades/courses in which students are expected to be proficient with those standards. With the next several questions, I'd like to get a better understanding of why and how the framework was developed [adopted].

- 3. Can you explain how the curricular framework is vertically aligned to ensure student preparation for Algebra I?**

Listen for:

- o What important skills and understandings are emphasized in the early grades?*

- 4. Was this curricular framework developed or was it an existing framework that the state/district adopted?**
- 5. Do you know what prompted the effort to adopt/develop this particular curricular framework?**

Listen for:

- o Was it a state or district initiative?*
- o What was the rationale for doing so?*
- o Was improved preparation for Algebra I a consideration?*

Note to interviewer:

If the curricular framework is an existing framework that was adopted, continue with questions 6 and 7 and then skip to the Implementation of Curricular Framework section. Otherwise, go to question 8 and continue through the rest of the protocol.

- 6. Was an emphasis on particular mathematical skills/understandings in early grades a factor in the decision? If so, what particular skills/understandings were of interest?**

Listen for:

- o Fluency with whole numbers and whole number operations*
- o Fluency with fractions and fraction operations*
- o Skill in geometry and measurement*
- o Emphasis on algebraic thinking*

- 7. To what extent was the sequencing of content a critical factor in selecting/developing the curricular framework? Please explain.**

Listen for:

- o To what degree was the structure of mathematics a consideration?*
- o To what degree were learning progressions (the pathway through which student learning progresses) a consideration?*

- 8. Were you involved in the development of the curricular framework? If so, do you feel like your contributions were valued and reflected in the current framework?**

- 9. Can you describe in detail how the curricular framework was developed?**

Listen for:

- o Who was involved in developing it, and what were their roles?*
- o What specific roles did district representatives have compared with school leaders or teachers?*
- o How long did it take to develop the framework?*

- 10. In developing the framework, were specific skills or understandings emphasized in the earlier grades?**

If yes, listen for:

- o What specific skills were emphasized (fluency with whole numbers, fluency with fractions, skill in geometry and measurement)?*

- o *What specific understandings were emphasized (conceptual understanding of whole numbers and whole number operations; conceptual understanding of fractions and fraction operations; algebraic thinking)?*

11. Can you briefly describe the process you used for determining how these topics should be sequenced across the elementary- and middle-grades mathematics courses that come before Algebra I?

Listen for:

- o *To what degree was the structure of mathematics a consideration?*
- o *To what degree were learning progressions (the pathway through which student learning progresses) a consideration?*

12. We understand that your district provides tools to support the implementation of this curricular framework. [If necessary, explain: tools for sequencing/pacing, activities, assessing students.] What was the process for developing/selecting these tools?

Listen for:

- o *Who was involved and what were their roles?*
- o *What features of these resources were important in the selection/development process?*

IMPLEMENTATION OF CURRICULAR FRAMEWORK

Now that we have a better sense of how the framework was selected/developed, I am interested in how it is implemented.

Implementation Features and Context

13. Can you describe, more specifically, what implementation of the curricular framework is intended to look like in schools or classrooms within the district?

Listen for:

- o *How do teachers emphasize algebraic thinking in the elementary and middle grades?*
- o *How do teachers develop fluency with numbers and fractions in the elementary and middle grades?*

Tools Supporting Implementation

Now, we would like to ask specific questions about tools or resources that the district provides to support teachers' and schools' implementation of the curricular framework.

14. The district provided us with a copy of the curricular framework. In what ways are teachers expected to use this framework in their instruction?

Listen for:

- o Are teachers expected to teach only the standards listed for their grade/course level or can they teach additional standards if they choose?*
- o Are teachers expected to teach the standards in the order listed for their grade or do they have the flexibility to teach the standards in whatever order they choose?*
- o Are there accompanied planning documents that they should use?*

Note to interviewer:

We expect that in addition to the curricular framework, which lists standards and grade levels for each standard, the district may provide additional planning resources that (a) outline units and associated standards and/or (b) specify the amount of time that should be spent on each standard/unit.

For each document of this sort, ask the following question:

15. The district provided us with {insert planning resource}. Are you familiar with this resource? In what ways are teachers expected to use this document in their instruction?’

Listen for:

- o How does this document support the implementation of a curricular framework that supports student preparation for Algebra I?*
- o Are they required to follow the pacing/sequencing/organization specified in this document or do they have the flexibility to make changes?*

Note to interviewer:

We also expect that the district may provide us with instructional resources to be used directly in instruction. These may include a set of activities, access to online resources, and/or a textbook.

For each resource of this sort, ask the following question:

16. The district also provided us with {insert instructional resource}. Are you familiar with this resource as well? In what ways are teachers expected to use this resource in their instruction?’

Listen for:

- o How is this resource intended to support teachers’ implementation of the curricular framework?*
- o Is this curricular resource required or suggested for teachers?*
- o If required, are they expected to implement this resource as specified, or are they to use it only as a guide?*

Note to interviewer:

The district may provide additional resources. These could include, but are not limited to, an annotated curricular framework that describes the mathematics associated with each standard or a document that outlines the vertical nature of the standards.

For each resource of this sort, ask the following question:

- 17. The district also provided us with {insert additional resource}. In what ways are teachers or schools expected to use this resource?**
- 18. Are there other resources that you or your school uses to support teachers in implementing the curricular framework so that students are prepared for Algebra I? If so, please explain.**
- 19. What additional tools or resources would be helpful for the successful implementation of this curricular framework?**

Teacher and Leader Support

- 20. What types of training or professional learning opportunities are available to teachers and teacher leaders to support their implementation of the curricular framework?**

NOTE: These could include, but are not limited to, workshops, webinars, instructional coaching, and professional learning communities.

Listen for:

- o What is the format for this training (e.g., webinar, in-person, Web-based materials to review)?*
- o Who provides the training, and who receives it?*
- o When and how often does the training occur? Is training provided only once or repeated regularly (e.g., annually, biannually)?*
- o What are the training objectives?*
- o Is there anything that is not currently covered in the training that should be?*
- o What resources, financial or otherwise, are needed to support this training?*
- o What resources, financial or otherwise, are needed to support this professional learning opportunity?*

- 21. To ensure that the math curricula are aligned across grades, do you and/or the teachers in your school collaborate with others, such as teachers from the elementary- and middle-grades feeder schools?**

Listen for:

- o With whom do you collaborate?*

- o What is usually covered in your collaborations?*
- o How often do you meet?*
- o How much time would you estimate each session takes?*
- o Are you provided with additional resources, such as time during teacher work days, off-site meetings, and additional prep time, to have these meetings?*

22. In what ways do you, as mathematics coordinators or department chairs, support teachers in implementing the curricular framework?

Listen for:

- o How frequently do you meet with them individually or collectively? For what purpose?*
- o To what extent do you monitor teachers' progress in implementing the framework?*
- o Do you conduct classroom observations? Do you conduct walkthroughs? If so, how often? Do you provide feedback to teachers and/or school leaders?*

Implementation Challenges

23. What are the major challenges that teachers in your school face in implementing the curricular framework? In what ways have you addressed these challenges?

Listen for:

- o What strategies did and did not work and why?*

24. What are the major challenges that your school has faced in implementing the curricular framework? In what ways have you addressed these challenges?

Listen for:

- o What strategies did and did not work and why?*

25. What changes would you make to increase success in implementing the framework?

OUTCOMES OF THE CURRICULAR FRAMEWORK

Next, I would like to talk about whether you think this approach to curricular alignment has been successful in your school and district.

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Listen for:

- o Is success in Algebra I (as measured by pass rates, grades, etc.) one of the measures?*
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27. Has the framework been successful according to these measures? Why or why not?

28. Do you think the implementation of the framework benefits certain students more than others? Why or why not?

29. What feedback have you received from teachers and administrators regarding the effectiveness of the framework

Listen for:

- o Are students prepared for Algebra I?*
- o Do teachers feel supported?*

30. In what ways do you think the current framework in your district does or does not address critical content and sequences? Why?

FINAL THOUGHTS AND CONCLUSION

OK, please take a step back to provide some key take-away thoughts from this interview today.

31. What do you think are the key components—the active ingredients—of a curricular framework that is vertically aligned to support preparation for Algebra I?

32. Do you have anything else that you would like to add before we conclude this interview?

Those are all the questions I have. Thank you for your time and for participating in this project.

PROMOTING STUDENT SUCCESS IN ALGEBRA I

Curricular Alignment Topical Area

Algebra I Teacher Focus Group

Name:	Title:
School:	District:
Interviewed by:	Date:

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BACKGROUND ON ROLE AND EXPERIENCE

Let's begin with some information about you.

- 1. To get started, could each of you tell me how long have you been teaching at this school, how many classes you are currently teaching, and whether they are all Algebra I classes?**

IMPETUS FOR AND DEVELOPMENT OF CURRICULAR FRAMEWORK

I understand that in *_{insert year}_* your district developed [began using] a curricular framework that aligns mathematics curricula across grades so that students are prepared for Algebra I. By curricular framework, I am referring to a list of standards and the grades/courses in which students are expected to be proficient with those standards. With the next several questions, I'd like to get a better understanding of why and how the framework was developed [adopted].

- 2. Can you explain how the curricular framework is vertically aligned to ensure student preparation for Algebra I?**

Listen for:

- o What types of important skills and understandings for Algebra I are emphasized in the early grades?*

- 3. Do you know what prompted the effort to adopt/develop this particular curricular framework?**

Listen for:

- o Was it a state or district initiative?*
- o What was the rationale for doing so?*
- o Was improved preparation for Algebra I a consideration?*

- 4. Were you or any other Algebra I teachers involved in the selection/development of the curricular framework or tools to support its implementation? If so, how, and did you feel your contributions were reflected in the framework?**

Listen for:

- o Did Algebra I teachers provide advice?*
- o Did Algebra I teachers develop any materials?*

IMPLEMENTATION OF CURRICULAR FRAMEWORK

Now that we have a better sense of how the framework was selected/developed, I am interested in how it is implemented.

Implementation Features and Context

5. **How does the implementation of the curricular framework in earlier grades shape your instruction in Algebra I?**

Listen for:

- o Do you teach courses that precede Algebra I?*
- o How do teachers emphasize algebraic thinking in the elementary and middle grades?*
- o How do teachers develop fluency with numbers and fractions in the elementary and middle grades?*

6. **What do you expect students to know and be able to do as a result of having completed earlier coursework aligned to the curricular framework before they get to you in Algebra I?**

Listen for:

- o What specific skills were emphasized (fluency with whole numbers, fluency with fractions, skill in geometry and measurement)?*
- o What specific understandings were emphasized (conceptual understanding of whole numbers and whole number operations; conceptual understanding of fractions and fraction operations; algebraic thinking)?*

Tools Supporting Implementation

Now, we would like to ask some specific questions about tools or resources that the district provides to support your implementation of the curricular framework.

7. **The district has provided us with a copy of the curricular framework. In what ways do you use this framework in your instruction to build on what students learn in earlier courses?**

Note to interviewer:

We expect that in addition to the curricular framework, which lists standards and grade levels for each standard, the district may provide additional planning resources that (a) outline units and associated standards and/or (b) specify the amount of time that should be spent on each standard/unit.

For each document of this sort, ask the following question:

8. The district provided us with {insert planning resource}. Are you familiar with this resource? In what ways do you use this document to inform your instruction in Algebra I?

Listen for:

- o Do you use it to better understand what students should already know and be able to do before they come to you?*
- o Do you use it directly to support students in mastering concepts taught in courses preceding Algebra I?*

Note to interviewer:

We also expect that the district may provide us with instructional resources to be used directly in instruction. These may include a set of activities, access to online resources, and/or a textbook.

For each resource of this sort, ask the following question:

9. The district also provided us with {insert instructional resource}. Are you familiar with this resource as well? In what ways do you use this document to inform your instruction in Algebra I?

Listen for:

- o Do you use it to better understand what students should already know and be able to do before they come to you?*
- o Do you use it directly to support students in mastering concepts taught in courses preceding Algebra I?*

Note to interviewer:

The district may provide additional resources. These could include, but are not limited to, an annotated curricular framework that describes the mathematics associated with each standard or a document that outlines the vertical nature of the standards.

For each resource of this sort, ask the following question:

10. The district also provided us with {insert instructional resource}. Are you familiar with this resource as well? In what ways do you use this document to inform your instruction in Algebra I?

11. What additional tools or resources would be helpful for the successful implementation of this curricular framework?

Teacher Professional Learning and Support

12. What types of professional learning opportunities are available to you to support your implementation of the curricular framework?

NOTE: These could include, but are not limited to, workshops, webinars, instructional coaching, and professional learning communities.

Listen for:

- o What is the format for this training (e.g., webinar, in-person, Web-based materials to review)?*
- o Who provides the training, and who receives it?*
- o When and how often does the training occur? Is training provided only once or repeated regularly (e.g., annually, biannually)?*
- o What are the training objectives?*
- o Is there anything that is not currently covered in the training that should be?*
- o What resources, financial or otherwise, are needed to support this training?*

13. Which of these professional learning opportunities did you find most helpful for helping you to understand what to expect when students come to you in Algebra I?

14. What additional training or professional learning opportunities would be most helpful for ensuring successful implementation of the curricular framework?

15. To ensure that the math curricula are aligned across grades, do you and/or the teachers in your school collaborate with others, such as teachers from the elementary- and middle-grades feeder schools?

Listen for:

- o Are you provided time during teacher work days, off-site meetings, additional prep time, etc., to have these meetings?*

16. Do you feel that you are adequately supported to implement instruction that builds on the mathematics content that students learn in coursework prior to Algebra I?

Listen for:

- o In what ways are you supported?*
- o To whom do you turn for support?*
- o What additional resources/support would you like to receive?*
- o Who do you believe should be providing the additional support?*

Implementation Challenges

17. What are the major challenges you have faced in designing instruction that is vertically aligned to what students learned in courses preceding Algebra I? In what ways have you addressed these challenges?

Listen for:

o What strategies did and did not work and why?

18. What changes would you make to increase the success of implementing the curricular framework?

OUTCOMES OF THE CURRICULAR FRAMEWORK

Next, I would like to talk about whether you think this approach to curricular alignment has been successful in your school and district.

19. Do you feel that your students come adequately prepared to your Algebra I class?

Listen for:

o Where are their strengths?

o What are their weaknesses?

o Are there skills/understandings that should be emphasized more in the coursework leading up to Algebra I that are not currently emphasized in the curricular framework?

20. Do you think the implementation of the framework benefits certain students more than others? Why or why not?

21. Have you noticed any changes in student performance or preparation since the adoption of the curricular framework?

22. Have you experienced any other changes since this framework's adoption, such as increased collaboration within your department and/or across schools?

23. Do you think the framework emphasizes the skills and understandings needed to be successful in Algebra I? How?

FINAL THOUGHTS AND CONCLUSION

OK, please take a step back to provide some key take-away thoughts from this interview today.

24. What do you think are the key components—the active ingredients—of a curricular framework that is vertically aligned to support preparation for Algebra I?

25. Do you have anything else that you would like to add before we conclude this interview?

Those are all the questions I have. Thank you for your time and for participating in this project.

PROMOTING STUDENT SUCCESS IN ALGEBRA I
Curricular Alignment Topical Area
Elementary School Teacher Focus Group

Name:	Title:
School:	District:
Interviewed by:	Date:

INTRODUCTION AND BACKGROUND

Good morning/afternoon. First of all, thank you so much for being here and for being willing to participate in this project for the U.S. Department of Education. Before we start, we would like to introduce ourselves, provide a little background on our work, and answer any questions you might have.

My name is [name], and this is [name of the other site visitor]. We are researchers from American Institutes for Research and Windwalker Corporation, organizations that conduct research and technical assistance in education. We are here today to interview you as part of a collaborative effort to provide program developers and administrators with information to promote student success in Algebra I. We are particularly interested in Algebra I because it's a gatekeeper course in that it's a prerequisite for subsequent high school mathematics and science courses considered essential for getting into college. So, it is an important stepping-stone for success in high school and college.

We selected your district because your district has an interesting approach to the vertical alignment of mathematics curriculum in preparation for Algebra I instruction. By vertical alignment, we are referring to the framework in which math curricula are sequenced so that students are introduced to skills and understandings in earlier grades that provide the foundation for their understanding of algebraic concepts.

As part of this project for the U.S. Department of Education, we are speaking with teachers, math department leaders, school administrators, district staff, and students about the instructional practices employed that contribute to student success in Algebra I. With respect to teachers, we are interested in your perspectives on how the Algebra I curriculum is being developed and implemented and the curriculum's success at achieving its goals. The data we collect will be used to develop technical assistance tools to help program developers and administrators implement similar programs to support struggling students.

I'll talk more about the topics of this interview, but for now, are there any questions about the project or why we are here?

DESCRIPTION OF INTERVIEW PROCEDURE AND CONFIDENTIALITY

Next, I'd like to say a few things about the process for this discussion. During our session today, I'll be asking you some questions, and [another site visitor] will be taking notes on what you are saying. [S/he] will not record your names. If you don't mind, I would also like to record our conversation simply for note-taking purposes. No one outside of our project team will hear the recording; it will just be for our own reference. If you would like us to turn off the recorder at any point, just let me know. Would that be OK?

I want to assure you that we will treat the information you provide in a confidential manner. The recorded interview will be transcribed by a member of the project team, and only selected research staff will have access to the data, except as required by law. We will not use your name or attribute any quotes to you, instead, we will use pseudonyms in practice profiles. All efforts will be made to keep the description of the site general enough so that a reader would never be able to determine the true name or identity of the site or individuals at the site. Therefore, no one who reads the profiles of practice will know that the statements came from you.

I'd like to ask you to sign a consent form before we begin. It outlines some of the issues I've just mentioned with regard to anonymity and confidentiality. Please take a minute to read it and let me know if you have any questions.

Are there any questions before we get started?

Notes to interviewer:

- Throughout the interview, possible probes are set aside following each general question. We would like to gather information relative to each of those probes. If, when the general question is asked, respondents provide the information requested by the probes, you do not need to ask the probing questions. In addition to providing additional information, asking the probing questions may help move the interview pace or may prompt a less talkative respondent. Keep the tone conversational and comfortable.

- To the extent that this information can be retrieved from other data sources (e.g., school records) beforehand, document that information below prior to the interview. During the interview, prompt the Teachers to confirm its accuracy if their initial response does not do so.

BACKGROUND ON ROLE AND EXPERIENCE

Let's begin with some information about you.

- 1. To get started, could each of you tell me how long have you been teaching, how long you have been teaching at this school and what grades you teach?**

IMPETUS FOR AND DEVELOPMENT OF CURRICULAR FRAMEWORK

I understand that in *_{insert year}_* your district developed [began using] a curricular framework that aligns mathematics curricula across grades so that students are prepared for Algebra I. With the next several questions, I'd like to get a better understanding of the framework and how you are implementing it in your classrooms.

- 2. Can you explain how the curricular framework is vertically aligned to ensure student preparation for Algebra I?**

Listen for:

- o What types of important skills and understandings for Algebra I are emphasized in the early grades?*

- 3. Do you know what prompted the effort to adopt/develop this particular curricular framework?**

Listen for:

- o Was it a state or district initiative?*
- o What was the rationale for doing so?*
- o Was improved preparation for Algebra I a consideration?*

- 4. Were you or any other teachers of courses leading up to Algebra I involved in the selection/development of the curricular framework or tools to support its implementation? If so, how, and did you feel your contributions were reflected in the framework?**

Listen for:

- o Providing advice*
- o Developing materials*

IMPLEMENTATION OF CURRICULAR FRAMEWORK

Now that we have a better sense of how math curricula are aligned for student success in Algebra I, we would like to discuss how you go about implementing instruction for the vertically aligned standards.

5. Can you describe, more specifically, what the implementation of the curricular framework looks like in your classroom?

Listen for:

- o How do you emphasize algebraic thinking?*
- o How do you develop fluency with numbers and fractions?*

Tools Supporting Implementation

Now, we would like to ask some specific questions about tools or resources that the district provides to support your implementation of the curricular framework.

6. The district has provided us with a copy of the curricular framework. In what ways do you use this framework in your instruction?

Listen for:

- o Do you teach only the standards listed for your grade/course level or can you teach additional standards if you choose?*
- o Do you teach the standards in the order listed for your grade or do you have the flexibility to teach the standards in whatever order you choose?*
- o Are there accompanying planning documents that you use?*

Note to interviewer:

We expect that in addition to the curricular framework, which lists standards and grade levels for each standard, the district may provide additional planning resources that (a) outline units and associated standards and/or (b) specify the amount of time that should be spent on each standard/unit.

For each document of this sort, ask the following question:

7. The district provided us with {insert planning resource}. Are you familiar with this resource? In what ways do you use this document in your instruction?’

Listen for:

- o How does this document support your implementation of a curricular framework that supports student preparation for Algebra I?*
- o Do you follow the pacing/sequencing/organization specified in this document or do you have the flexibility to make changes?*

Note to interviewer:

We also expect that the district may provide us with instructional resources to be used directly in instruction. These may include a set of activities, access to online resources, and/or a textbook.

For each resource of this sort, ask the following question:

- 8. The district also provided us with {insert instructional resource}. Are you familiar with this resource as well? In what ways do you use this resource in your instruction?’**

Listen for:

- o How is this resource intended to support your implementation of the curricular framework?*
- o Is this curricular resource required or suggested for teachers?*
- o If required, are you expected to implement this resource as specified, or are you to use it only as a guide?*

Note to interviewer:

The district may provide additional resources. These could include, but are not limited to, an annotated curricular framework that describes the mathematics associated with each standard or a document that outlines the vertical nature of the standards.

For each resource of this sort, ask the following question:

- 9. The district also provided us with {insert additional resource}. In what ways are you using this resource?**

- 10. Are there other resources or tools that you or your school uses to support teachers in implementing the curricular framework so that students are prepared for Algebra I? If so, please explain.**

- 11. What additional tools or resources would be helpful for the successful implementation of this curricular framework?**

Teacher and Leader Support

12. What types of training or professional learning opportunities are available to you to support your implementation of the curricular framework?

NOTE: These could include, but are not limited to, workshops, webinars, instructional coaching, and professional learning communities.

Listen for:

- o What is the format for this training (e.g., webinar, in-person, Web-based materials to review)?*
- o Who provides the training, and who receives it?*
- o When and how often does the training occur? Is training provided only once or repeated regularly (e.g., annually, biannually)?*
- o What are the training objectives?*
- o Is there anything that is not currently covered in the training that should be?*
- o What resources, financial or otherwise, are needed to support this training?*

13. Which of these training or professional learning opportunities did you find most helpful for helping you understand how to best prepare students for success in Algebra I?

14. What additional training or professional learning opportunities would be most helpful for implementing the curricular framework?

15. To ensure that the math curricula are aligned across grades, do you and/or the teachers in your school collaborate with others, such as teachers from the middle grades or high school?

Listen for:

- o Are you provided time during teacher work days, off-site meetings, additional prep time, etc., to have these meetings?*

16. Do you feel that you are adequately supported to implement instruction that prepares students for success in Algebra I?

Listen for:

- o In what ways are you supported?*
- o To whom do you turn for support?*
- o What additional resources/support would you like to receive?*
- o Who do you believe should be providing the additional support?*

Implementation Challenges

17. What are the major challenges that you have faced in implementing the curricular framework? In what ways have you addressed these challenges?

Listen for:

o What strategies did and did not work and why?

18. What changes would you make to increase the success of implementing the curricular framework?

OUTCOMES OF THE CURRICULAR FRAMEWORK

Next, I would like to talk about whether you think this approach to curricular alignment has been successful in your school and district.

19. Do you feel that your students leave your class with a stronger preparation for Algebra I?

Listen for:

o Where are their strengths?

o What are their weaknesses?

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23. Do you think the current framework emphasizes important skills and understandings needed for Algebra I? Why or why not?

Listen for:

o Fluency with whole numbers

o Fluency with fractions

o Skills in geometry and measurement

o Development of algebraic thinking in coursework prior to Algebra I

- o Other skills or content*

FINAL THOUGHTS AND CONCLUSION

OK, please take a step back to provide some key take-away thoughts from this interview today.

24. What do you think are the key components—the active ingredients—of a curricular framework that is vertically aligned to support preparation for Algebra I?

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Those are all the questions I have. Thank you for your time and for participating in this project.

PROMOTING STUDENT SUCCESS IN ALGEBRA I

Curricular Alignment Topical Area

Middle School Teacher Focus Group

Name:	Title:
School:	District:
Interviewed by:	Date:

INTRODUCTION AND BACKGROUND

Good morning/afternoon. First of all, thank you so much for being here and for being willing to participate in this project for the U.S. Department of Education. Before we start, we would like to introduce ourselves, provide a little background on our work, and answer any questions you might have.

My name is [name], and this is [name of the other site visitor]. We are researchers from American Institutes for Research and Windwalker Corporation, organizations that conduct research and technical assistance in education. We are here today to interview you as part of a collaborative effort to provide program developers and administrators with information to promote student success in Algebra I. We are particularly interested in Algebra I because it's a gatekeeper course in that it's a prerequisite for subsequent high school mathematics and science courses considered essential for getting into college. So, it is an important stepping-stone for success in high school and college.

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BACKGROUND ON ROLE AND EXPERIENCE

Let's begin with some information about you.

- 1. To get started, could each of you tell me how long have you been teaching, how long you have been teaching at this school, and what grades you teach?**

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I understand that in *_{insert year}_* your district developed [began using] a curricular framework that aligns mathematics curricula across grades so that students are prepared for Algebra I. With the next several questions, I'd like to get a better understanding of the framework and how you are implementing it in your classrooms.

- 2. Can you explain how the curricular framework is vertically aligned to ensure student preparation for Algebra I?**

Listen for:

- o What types of important skills and understandings for Algebra I are emphasized in the early grades?*

- 3. Do you know what prompted the effort to adopt/develop this particular curricular framework?**

Listen for:

- o Was it a state or district initiative?*
- o What was the rationale for doing so?*
- o Was improved preparation for Algebra I a consideration?*

- 4. Were you or any other teachers of courses leading up to Algebra I involved in the selection/development process? If so, how?**

Listen for:

- o Providing advice*
- o Developing materials*

IMPLEMENTATION OF CURRICULAR FRAMEWORK

Now that we have a better sense of how math curricula are aligned for student success in Algebra I, we would like to discuss how you go about implementing instruction for the vertically aligned standards.

5. Can you describe, more specifically, what the implementation of the curricular framework looks like in your classroom?

Listen for:

- o How do you emphasize algebraic thinking?*
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- o Do you teach only the standards listed for your grade/course level or can you teach additional standards if you choose?*
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Listen for:

- o How does this document support your implementation of a curricular framework that supports student preparation for Algebra I?*

- o Do you follow the pacing/sequencing/organization specified in this document or do you have the flexibility to make changes?

Note to interviewer:

We also expect that the district may provide us with instructional resources to be used directly in instruction. These may include a set of activities, access to online resources, and/or a textbook.

For each resource of this sort, ask the following question:

14. The district also provided us with {insert instructional resource}. Are you familiar with this resource as well? In what ways do you use this resource in your instruction?’

Listen for:

- o How is this resource intended to support your implementation of the curricular framework?
- o Is this curricular resource required or suggested for teachers?
- o If required, are you expected to implement this resource as specified, or are you to use it only as a guide?

Note to interviewer:

The district may provide additional resources. These could include, but are not limited to, an annotated curricular framework that describes the mathematics associated with each standard or a document that outlines the vertical nature of the standards.

For each resource of this sort, ask the following question:

15. The district also provided us with {insert additional resource}. In what ways are you using this resource?

16. Are there other resources or tools that you or your school uses to support teachers in implementing the curricular framework so that students are prepared for Algebra I? If so, please explain.

17. What additional tools or resources would be helpful for the successful implementation of this curricular framework?

Teacher and Leader Support

18. What types of training or professional learning opportunities are available to you to support your implementation of the curricular framework?

NOTE: These could include, but are not limited to, workshops, webinars, instructional coaching, and professional learning communities.

Listen for:

- o What is the format for this training (e.g., webinar, in-person, Web-based materials to review)?*
- o Who provides the training, and who receives it?*
- o When and how often does the training occur? Is training provided only once or repeated regularly (e.g., annually, biannually)?*
- o What are the training objectives?*
- o Is there anything that is not currently covered in the training that should be?*
- o What resources, financial or otherwise, are needed to support this training?*

19. Which of these training or professional learning opportunities did you find most helpful for helping you understand how to best prepare students for success in Algebra I?

20. What additional training or professional learning opportunities would be most helpful for implementing the curricular framework?

21. To ensure that the math curricula are aligned across grades, do you and/or the teachers in your school collaborate with others, such as teachers from the elementary grades and high schools?

Listen for:

- o Are you provided time during teacher work days, off-site meetings, additional prep time, etc., to have these meetings?*

22. Do you feel that you are adequately supported to implement instruction that builds on the mathematics content that students learn in coursework prior to Algebra I?

Listen for:

- o In what ways are you supported?*
- o To whom do you turn for support?*
- o What additional resources/support would you like to receive?*
- o Who do you believe should be providing the additional support?*

Implementation Challenges

23. What are the major challenges that you have faced in implementing the curricular framework? In what ways have you addressed these challenges?

Listen for:

- o What strategies did and did not work and why?*

24. What changes would you make to increase the success of implementing the curricular framework?

OUTCOMES OF THE CURRICULAR FRAMEWORK

Next, I would like to talk about whether you think this approach to curricular alignment has been successful in your school and district.

25. Do you feel that your students leave your class with a stronger preparation for Algebra I?

Listen for:

- o Where are their strengths?*
- o What are their weaknesses?*
- o Are there skills/understandings that should be emphasized more in the coursework leading up to Algebra I that are not currently emphasized in the curricular framework?*

26. Do you think the implementation of the framework benefits certain students more than others? Why or why not?

27. Have you noticed any changes in student performance or preparation since the adoption of the curricular framework?

28. Have you experienced any other changes since this framework's adoption, such as increased collaboration within your department and/or across schools?

29. Do you think the current framework emphasizes important skills and understandings needed for Algebra I? Why or why not?

Listen for a discussion of:

- o Fluency with whole numbers*
- o Fluency with fractions*
- o Skills in geometry and measurement*
- o Development of algebraic thinking in coursework prior to Algebra I*
- o Other skills or content*

FINAL THOUGHTS AND CONCLUSION

OK, please take a step back to provide some key take-away thoughts from this interview today.

30. What do you think are the key components—the active ingredients—of a curricular framework that is vertically aligned to support preparation for Algebra I?

31. Do you have anything else that you would like to add before we conclude this interview?

Those are all the questions I have. Thank you for your time and for participating in this project.