

Facilitator's Guidelines for 4th Meeting

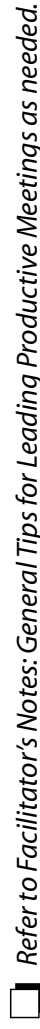
Unless otherwise noted, all materials are on the website in the Guidelines for Science-Writing Group Meetings section.

Preparing for the Meeting

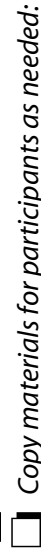


Read:

- pages 67–78 in Writing in Science
- these facilitator's guidelines and the materials that follow



Refer to Facilitator's Notes: General Tips for Leading Productive Meetings as needed.



Copy materials for participants as needed:

- Participants' Guiding Questions for 4th Meeting
 - Box and T-charts and Scientific Comparisons section of the Student Notebook Entries: Pre-kindergarten Through Fifth Grade section on the website
 - Background Information for Balls Video Episode on the website
-  Test the technology and the DVD to be sure that everything will work during the meeting.

Meeting Focus: Scientific comparisons; specific modeling strategies; supporting claims with evidence

Meeting Overview



Teachers will reflect on how differentiating instruction and using scaffolding in teaching students how to make and write comparisons can help students develop their scientific thinking skills and subsequently their understanding of science concepts.



Next, participants will critique students' comparisons and continue to discuss the positive effects of scaffolding on students' scientific thinking and conceptual understanding.



Participants will turn their attention to modeling and scaffolding as they watch a video episode in which students are learning to plan and conduct a controlled investigation, then write a simple form of conclusion in which they make a claim and then support it with evidence from their tests.



Teachers then will critique a notebook entry from that episode that shows how focusing on evidence of conceptual understanding and scientific thinking rather than conventions of writing can help us recognize a student's significant strengths in science.



Finally, teachers will plan how they can do more modeling in their upcoming lessons as well as teach their students how to provide evidence for claims.

1. Reflecting on Practice (about 20 minutes)

Section Overview: Participants will discuss how they think differentiating their instruction and using the box and T-chart strategy and the Compare and Contrast writing frame in their instruction has affected their students' learning.



Discuss the guiding questions.

1. Reflecting on Practice

Guiding Questions	Notes
1. When using the box and T-chart strategy and the Compare and Contrast writing frame, in what ways, if any, did you differentiate your instruction for students in different places on the academic-skills continuum? 2. How do you think using this scaffolding helped your students organize and deepen their thinking about the science concepts? Give examples.	

2. Critiquing Notebook Entries (about 35 minutes)

Section Overview: Participants will look at notebook entries in which students are making comparisons, then think about the effects of scaffolding on students' learning of concepts and scientific thinking.

- ☐ *By grade-level group if possible, teachers discuss each sample (and the annotations) from their grade level (and above and/or below that level if possible) in the Box and T-charts and Scientific Comparisons section of Student Notebook Entries.*
- ☐ *Remind everyone to stay focused on the Three Key Elements, asking, "What does this entry tell us about the student's understanding of science content, and the level of her scientific thinking and scientific skills?" Begin by discussing strengths.*
- ☐ *After talking about each sample, discuss the notes for that sample.*
- ☐ *Then discuss the guiding questions.*
- ☐ *In discussing the first question, note that in virtually all the samples, regardless of the students' level of writing skills, the scaffolding has helped students write more detailed comparisons than students typically do. Furthermore, students organize the contrasts by category and include the properties or characteristics for each object or organism (e.g., the property of bounciness for each ball instead of just for one of them). Because the process of making the box and T-chart and then writing the comparison focuses and organizes their thinking, students can develop a strong understanding of the concepts related to the properties or characteristics of the objects or organisms.*

2. Critiquing Notebook Entries

Guiding Questions	Notes
1. In these notebook entries, what evidence do you see of the students' observational skills and their scientific thinking? 2. What effect do you think these scientific skills and thinking have on the development of students' understanding of science concepts? 3. After discussing these comparisons, what would you like to do next with your instruction?	

3. Viewing and Discussing the Balls Video Episode (about 40 minutes)

Section Overview: Teachers will watch a video episode and consider the ways the teacher uses modeling and scaffolding.

- ☐ Before watching the video episode, read the guiding questions.
- ☐ Then discuss them after watching the episode.
- ☐ The "Strategies for Your Classroom" section of Chapter 5 in Writing in Science in Action might be helpful in guiding the discussion.
- ☐ After the discussion, go over the Background Information for the Balls Video Episode.

3. Viewing and Discussing the Balls Video Episode

Guiding Questions	Notes
1. In what ways does the teacher model how to plan and conduct a fair test? What is effective about this modeling? 2. What kinds of scaffolding does the teacher provide in the science and writing sessions to help students learn how to plan fair tests and write claims supported with evidence? 3. Which of this teacher's strategies do you typically use in your inquiry-based science and science-writing instruction? 4. Which strategies do you think you could implement more often and/or more effectively than you do now?	

4. Making Claims Supported with Evidence (about 15 minutes)

Section Overview: In critiquing two notebook entries, participants will consider the value of looking at entries in terms of the Three Key Elements and also will see examples of young students' simple conclusions.

 Read the guiding questions.

 Read and discuss Figure 5–3 in Chapter 5 in Writing in Science in Action in terms of the guiding questions. Then look at the translation and critiquing of the entry in the “Notebook Entry: Keeto” section of the chapter. Note how much thinking and understanding are communicated in this entry despite the student’s emergent skills in spelling and the use of conventions.

 Read and discuss Figure 5–5 using the guiding questions.

 Note that a critical part of scientific communication is making claims or statements and then supporting them with evidence. In this investigation, students are using this structure to write a simple conclusion.

4. Making Claims Supported with Evidence

Guiding Questions	Notes
1. What <i>strengths</i> do you see in the entries in terms of making a claim or statement and supporting it with evidence? 2. What other strengths do you see in terms of: ☐ science content understanding? ☐ scientific thinking? ☐ scientific skills?	

5. Considering Next Steps (about 10 minutes)

Section Overview: Teachers will look at upcoming lessons and plan how they could do more modeling with their students and help them learn how to make claims and provide appropriate evidence to support the claims.



Discuss the guiding questions.

5. Considering Next Steps

Guiding Questions	Notes
1. How could you do more modeling during the science session and the writing session to help develop your students' scientific and writing skills? 2. In upcoming lessons, where could you emphasize making claims and supporting them with evidence, or reasoning?	

6. Preparing for the Next Meeting

1. In the weeks before the next meeting:

☐ Read Chapter 5 in Writing in Science in Action.

☐ Emphasize and model the scientific practice of providing evidence and/or reasoning for statements or claims. Using because and I think this because can be part of this practice.

☐ Continue making entries in your own science notebook as you plan instruction and during investigations, if needed.

2. Confirm the date and time of the next meeting: _____.

3. Remember to bring the following to the next meeting:

☐ Writing in Science

☐ Writing in Science in Action

☐ Teacher's guide for your science unit, or whatever instructional materials you use with your current science unit

☐ Your own science notebook