

Facilitator's Guidelines for 5th Meeting

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

Preparing for the Meeting



Read:

- Chapter 5 in Writing in Science in Action
- 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 5th Meeting
- Selected samples (see the third section of these guidelines for this meeting) from the Scientific Conclusions section of the Student Notebook Entries: Pre-kindergarten Through Fifth Grade section on the website
- Background Information for the Go-Carts Video Episode on the website



Test the technology and the DVD to be sure that everything will work during the meeting.

Meeting Focus: Modeling and scaffolding; supporting claims with evidence; conclusions

Meeting Overview



Participants will discuss how they have used modeling and scaffolding in their instruction and the ways in which they think it has been effective. They also will share the successes and challenges their students have had in making claims and providing evidence for those statements.



Then they will write their own conclusion before reading student conclusions from kindergarten through fifth grade.



In a video episode, they will watch a teacher conduct a science discussion in which students interpret test results on a graph, make conclusions based on the data, then learn how to write a complex conclusion about their investigation.



After discussing the episode, participants will revise their own conclusions if needed, then plan how their students can learn to write a basic or complex conclusion in an upcoming investigation.

1. Reflecting on Practice (about 20 minutes)

Section Overview: Participants will reflect on their use of modeling and scaffolding, including ways in which their instruction has helped students learn how to make claims and support them with evidence.

 Discuss the guiding questions.

 After discussing the fourth question, note that students can have trouble making a notebook entry, no matter how well a teacher models the writing during the writing minilesson, if students have not had a chance to hear and use the language during class discussions and in talking with a partner. In the video episode that participants will watch later in this meeting, they will see how, during class discussions, the teacher naturally introduces and models language that students will need to use in their talking and writing.

1. Reflecting on Practice

Guiding Questions	Notes
1. What modeling did you do in the last few weeks to show students specific scientific skills (e.g., planning and/or conducting a controlled investigation, recording data in a data table) and thinking and writing skills (e.g., supporting claims with evidence)? 2. What evidence do you have that this modeling was effective? 3. What were your students' successes and challenges in making claims and supporting them with evidence? 4. During the shared reflection discussions after students investigated a question using concrete materials, how did you model how to use specific language (e.g., "The data show," "I think . . . because . . .")? What opportunities did you give students to use that language during the discussion?	

2. Writing an Entry: Scientific Conclusion (about 10 minutes)

Section Overview: Participants will write a scientific conclusion.

-  Participants read the data table in Figure 11–4 in Chapter 11. Then they write a conclusion to the investigative question, using the data from the table to support their answer.

2. Writing a Scientific Conclusion

Conclusion

3. Critiquing Notebook Entries (about 35 minutes)

Section Overview: Teachers will read conclusions at each of the six elementary-grade levels, and then discuss the similarities and differences among the conclusions in terms of both the components and the language in the entries.

- ☐ Read the guiding question.
- ☐ Regardless of grade level, every teacher should read and discuss the following samples from the *Scientific Conclusions* section of *Student Notebook Entries*:
 - Kindergarten, Sample B, Helen
 - First Grade, Sample C, Kimberly S. L.
 - Second Grade, Sample A, Brenna
 - Third Grade, Sample B, Ivan
 - Fourth Grade, Sample C, Rees
 - Fifth Grade, Sample A, Emily
- ☐ After talking about each sample, beginning with the strengths, discuss the annotations for that sample.
- ☐ Then discuss the guiding question.
- ☐ Note that even young students can write a simple conclusion in which they answer an investigative question, then provide data to support the answer. As students learn more skills, their conclusions include more components and more complex language.
- ☐ To see the components of conclusions, participants can refer to the “Characteristics of an Exemplary Basic or a Complex Conclusion” checklist (parts 1 through 3) in Figure 6–3 in Chapter 6.

3. Critiquing Notebook Entries

Guiding Question	Notes
1. What similarities and differences do you notice in what is included in these six conclusions (e.g., an answer to the question, quantitative and/or qualitative data) and the language the students use (e.g., "The data show," "My evidence is," "Therefore")?	

4. Viewing and Discussing the Go-Carts Video Episode (about 45 minutes)

Section Overview: Participants will watch a video episode in which students have conducted an investigation about the effect of wheel size on the distance a go-cart can travel. In a shared reflection discussion after the investigation, the teacher helps students make meaning of their test results, then models how to write a complex conclusion.

- ☐ Read the guiding questions. Then discuss them after watching the episode.
- ☐ After the discussion, go over the Background Information for the Go-Carts Video Episode.
- ☐ When teachers reread their own conclusion, they might want to refer to the "Model How to Write a Basic Conclusion" section in Chapter 11, which is based on the same data table the teachers used.

4. Viewing and Discussing the Go-Carts Video Episode

Guiding Questions	Notes
1. What evidence do you see of students using scientific skills and thinking as they conduct their investigations, interpret their data, reflect on their predictions, and discuss and write their complex conclusions? 2. What modeling and scaffolding for interpreting data and making and writing complex conclusions do you observe in this classroom and this teacher's instruction that would meet the needs of students who: ☐ are learning English? ☐ are served in special education programs? ☐ meet state academic standards? ☐ exceed state academic standards? 3. What, if anything, would you revise in the conclusion you wrote before watching this video episode?	

5. Considering Next Steps (about 10 minutes)

Section Overview: Teachers will discuss how they can teach their students how to interpret data and write basic or complex conclusions in their next science investigations.

 *Discuss the guiding questions.*

 *Note that not all investigations have quantitative (measured) data.*

5. Considering Next Steps

Guiding Questions	Notes
1. Which of the science investigations in your unit would be suitable for writing a basic or complex conclusion? (If none of the investigations is suitable, then provide opportunities for making and writing claims and supporting them with evidence.) 2. What strategies do you want to implement to develop your students' ability to write conclusions?	

6. Preparing for the Next Meeting

1. In the weeks before the next meeting:
 - ☐ Read Chapter 6.
 - ☐ During discussions and minilessons, begin to develop your students' abilities to interpret, and talk and write about, data.
 - ☐ 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 in Action
 - ☐ Teacher's guide for your science unit, or whatever instructional materials you use with your current science unit
 - ☐ Your own science notebook