

# Responsive Mini-Lessons: Co-constructing—Not Descriptive

## About Responsive Mini-Lessons

Responsive Mini-Lessons (RMLs) provide short, targeted lessons that are responsive to each class's facility with oral argumentation, as assessed with the DiALoG Tool. The DiALoG Tool has eight components. Four are intrapersonal—claims, evidence, reasoning, and relevance; four are interpersonal—listening, co-constructing, critiquing, and regulation. RMLs are aimed at providing more practice with one of the eight components of the DiALoG Tool, so your students are more able to work together to enact rich, thoughtful, and engaging oral argumentation. For each component, the following phrases can be assigned, via the DiALoG Tool, to describe your students' abilities: Not Descriptive, Somewhat Descriptive, or Very Descriptive. An assigned phrase of Not Descriptive or Somewhat Descriptive indicates that your students likely need more support with that particular component of oral argumentation; a lesson is then suggested to help your students strengthen their abilities in that area. If the Not Descriptive phrase is assigned, the lesson provides basic, introductory support; if the Somewhat Descriptive phrase is assigned, the lesson assumes some basic facility with that component and provides an opportunity to practice it with more focus.

For the Co-constructing RMLs, the Not Descriptive lesson asks students to work with sentence frames to practice co-constructing ideas by using everyday examples as well as science examples. The Somewhat Descriptive lesson builds on the concepts introduced in the Not Descriptive lesson as students practice revising critiques to make them helpful for moving the conversation forward.

## Does a Responsive Mini-Lesson for the Not Descriptive Level Make Sense for Your Class?

The suggestion to provide a Responsive Mini-Lesson for the Not Descriptive level indicates that, based on your use of the DiALoG Tool, the following statement best describes your students' use of co-constructing during oral argumentation: *Students do not build on ideas offered by other students.* For more detail about this level and how it compares to other levels, please see the DiALoG Tool User Guide.

There is one Responsive Mini-Lesson provided for the Not Descriptive level.

### Goal

- Help students identify and understand the importance of co-constructing ideas when working with others.

# Responsive Mini-Lesson

## Materials and Teaching Considerations

### For the class

- Projection: Example: Statements About Ice Cream
- Projection and Copymaster: Co-constructing Statements
- Copymaster: Combining Ideas from Co-constructing Statements
- Teacher Reference: Co-constructing Statements
- Teacher Reference: Combining Ideas from Co-constructing Statements
- stapler\*

\*teacher provided

### For each pair of students

- 1 copy of Co-constructing Statements
- 1 set of Combining Ideas from Co-constructing Statements (2 pages)

**Time frame:** 30 minutes (This lesson can be extended, through discussion, to a full class period.)

### Teaching Considerations

Most lessons will begin with an introduction followed by the lesson itself. The introduction is a brief activity that sets up and supports the lesson that follows. Each introduction is teacher-led, while the lesson that follows is more student-centered.

## Getting Ready

- 1. Decide how to present the co-constructing statements.** During the lesson, you will present Example: Statements About Ice Cream and Co-constructing Statements. (The latter is also a copymaster.) The lesson is written as if these resources will be projected.
- 2. Make copies of Co-Constructing Statements.** Make enough copies so each pair of students gets one copy.
  - Refer to Teacher Reference: Co-constructing Statements to see the correct matches for the statements.
- 3. Make copies of Combining Ideas from Co-constructing Statements.** Make enough copies so each pair of students gets one set. There are 2 pages; staple together each set.
  - Refer to Teacher Reference: Combining Ideas from Co-constructing Statements to see two possible

student responses for each pair of statements.

- 4. Write the following co-constructing sentence frames on the board:**

### Sentence Frames: Co-constructing

- **Student 1:** I know that \_\_\_\_.
- **Student 2:** Something related to your idea is \_\_\_\_.
- **Student 2:** One way these two ideas are related is \_\_\_\_.
- **Student 1:** Another way these two ideas are related is \_\_\_\_.

## Introduction

- 1. Introduce the concept of co-construction.** Explain that in this lesson, students will work on an important attribute of oral argumentation: co-construction. Ask students for their initial ideas about what this could mean and why it might be important when participating in oral argumentation.

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2. **Summarize students' thinking.** After several students have shared ideas about what the term *co-construction* means, summarize their thinking. Add the following ideas, if students did not mention them:
  - When you are working with other students to better understand something, you can use, or incorporate, the ideas they offer. This will create an even more complex and comprehensive idea than if only one person thought of it.
  - In addition, when you share ideas, you are helping other people think about something in a new way. Even if you think someone else's ideas are not correct, you have to put some thought into figuring out why those ideas aren't correct and explaining those ideas to someone else. This helps your own thinking become clearer, stronger, and more focused.

### Lesson

1. **Explain the activity.** Say, **"This activity will help you work on co-constructing as you discuss. First, you will get a set of statements. By themselves, each statement is just a single idea. However, two or more ideas can be put together. When you work with other people, you can put two or more ideas together to come up with even more ideas. Let's work on an example together."**
2. **Project Example: Statements About Ice Cream.** Read aloud each statement. Keep this projected through Step 8.
3. **Call students' attention to the sentence frames on the board.** Say, **"Eventually, I want you to be able to co-construct ideas independently, without statements like these. However, sometimes when you practice something new, it is a good idea to slow down and pay special attention to the language you use and how it feels to interact by using language in special ways. Today, you will practice using sentence frames to discuss these statements. This will help you slow down and pay attention to the language you use."**
4. **Explain the procedure.** Let students know that they will work in pairs to practice using the sentence frames on the board.
  - Student 1 will begin by reading and completing the first sentence frame with one of the two statements being projected: *I know that \_\_\_\_\_.*
  - Student 2 will read and complete the second sentence frame with the other statement being projected: *Something related to your idea is \_\_\_\_\_.*
  - Student 2 will then use the next sentence frame to give one idea that explains how the two statements are related: *One way these two ideas are related is \_\_\_\_\_.*
  - Student 1 will use the last sentence frame to give a different idea about how the two statements are related: *Another way these two ideas are related is \_\_\_\_\_.*
5. **Pairs practice using sentence frames.** Have pairs practice by using the co-constructing sentence frames on the board with the projected Example: Statements About Ice Cream. Circulate and listen to students' discussions. Choose examples you hear that will help all students understand how to put these ideas together.

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- 6. Have a few pairs share with the class.**

Although students' answers may vary widely, all ideas within reason should be accepted. **[Americans are probably eating more vanilla ice cream now than they used to. Americans are probably eating more of all three flavors than then used to. Americans are eating a lot of ice cream. Americans are eating more ice cream than any other dessert.]**
- 7. Review the concept of co-constructing.**

Remind students that co-constructing happens when you take two or more ideas and put them together to produce a new idea. Co-constructing can also happen when your original idea is made stronger because you added new information to it. The practice activity and the activities that follow are meant to illustrate how co-construction can happen.
- 8. Project Co-constructing Statements and explain next steps.** Let students know that they will continue to work in pairs as they consider a set of statements like the ones you are projecting.
  - Point out Ideas: Set 1 on the left side of the table and Ideas: Set 2 on the right side.
  - Pairs' will match each idea from Set 1 that goes together with an Idea from Set 2 by drawing a line from the idea on the left to a corresponding idea on the right.
- 9. Distribute Co-constructing Statements.**

Distribute one sheet to each pair of students. Provide a few minutes for students to match the statements.
- 10. Remind students of the Sentence Frames: Co-constructing on the board.** Remind students to use these as they now work with the statements they just matched.
  - Explain that students will practice using co-constructing language by using the sentence frames and the statements provided.
  - Partners should take turns being Student 1 and Student 2, alternating after each set of statements is addressed.
- 11. Pairs work independently.** Circulate and listen to students' discussions, offering support as needed. Provide approximately 5–8 minutes for pairs to work.
- 12. Regain students' attention and distribute Combining Ideas from Co-constructing Statements.** Distribute one set to each pair of students.
  - Explain that these sheets have the co-constructing statements that have already been paired together.
  - Pairs will choose the set of statements they thought they did the best with—the statements with which they had the best discussion and did the most co-constructing.
  - Under the set of statements they choose to write about, they will record the ideas they constructed together when they discussed these statements.
- 13. Pairs write about one set of statements.**

Circulate and offer support as needed.
- 14. Pairs share with another pair.** Have each pair meet with another pair and share the work they did.

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15. **Whole-class discussion.** Have students share their thinking about what it felt like to slow down and use these co-constructing statements so specifically during the activity.
16. **Summarize important ideas from the lesson.** Remind students that the kind of talk they participated in—co-construction—is something that can make discussions richer and more rewarding for all students. It shows that students are actively engaged in listening and thinking while others talk and share their own thoughts.

## Why This Mini-Lesson Matters

This mini-lesson provides accessible examples and language supports to help students understand and engage in the co-construction of science ideas with peers. Designing an activity structure that prompts and supports specific interactions such as co-constructing can help students increase those interactions (Berland 2011). Using everyday examples and/or highly accessible science examples ensures that challenges with science content do not prevent students from grasping and engaging in the process of co-constructing. Research has also shown that students struggle with learning the language to communicate science ideas, which creates a major obstacle to learning science (Wellington and Osborne 2001). The sentence frames used in this lesson help students learn and produce language to express and co-construct science ideas.

## Resources

Berland, L. K. (2011). Explaining variation in how classroom communities adapt the practice of scientific argumentation. *Journal of the Learning Sciences* 20(4): 625-664.

Wellington, J., and Osborne, J. (2001). *Language and Literacy in Science Education*. United Kingdom: McGraw-Hill Education.



The Learning  
Design Group



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# Example: Statements About Ice Cream

<b>Idea 1</b>	<b>Idea 2</b>
<p>According to a large survey taken in 2015, America's favorite ice-cream flavor is vanilla, followed by chocolate, and then butter pecan.</p>	<p>According to a survey taken in 2013, Americans are eating more desserts than they used to eat compared to years before, and ice cream is their favorite dessert.</p>

## Co-constructing Statements

<b>Ideas: Set 1</b>	<b>Ideas: Set 2</b>
Many predators live in green forest environments.	People who play video games can have better hand-eye coordination over time.
On the human tongue, there are about 10,000 taste buds.	A balloon that was let go in one town was found three miles away.
Some jobs require that people have good hand-eye coordination.	Obsidian is a black rock that is made by volcanoes.
Balloons filled with helium can rise into the atmosphere and travel great distances. Balloons filled just with someone's breath usually can't travel far at all.	Green tree frogs often live in green environments.
Tuft is a white rock that is made by volcanoes.	On a single human taste bud, there are many cells that can sense (taste) several different things, such as sweet, salty, and sour.



Names: \_\_\_\_\_ Date: \_\_\_\_\_

## Combining Ideas from Co-constructing Statements

1. Choose the set of statements that you and your partner had the best discussion about.
2. On the lines provided, record the ideas you co-constructed about the set of statements you chose.

- Many predators live in green forest environments.
- Green tree frogs often live in green environments.

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- On the human tongue, there are about 10,000 taste buds.
- On a single human taste bud, there are many cells that can sense (taste) several different things, such as sweet, salty, and sour.

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- Some jobs require that people have good hand-eye coordination.
- People who play video games can have better hand-eye coordination over time.

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Names: \_\_\_\_\_ Date: \_\_\_\_\_

## Combining Ideas from Co-constructing Statements (continued)

- Balloons filled with helium can rise into the atmosphere and travel great distances. Balloons filled just with someone's breath usually can't travel far at all.
- A balloon that was let go in one town was found three miles away.

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- Tuft is a white rock that is made by volcanoes.
- Obsidian is a black rock that is made by volcanoes.

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## Co-constructing Statements

Ideas: Set 1	Ideas: Set 2
(A) Many predators live in green forest environments.	(C) People who play video games can have better hand-eye coordination over time.
(B) On the human tongue, there are about 10,000 taste buds.	(D) A balloon that was let go in one town was found three miles away.
(C) Some jobs require that people have good hand-eye coordination.	(E) Obsidian is a black rock that is made by volcanoes.
(D) Balloons filled with helium can rise into the atmosphere and travel great distances. Balloons filled just with someone's breath usually can't travel far at all.	(A) Green tree frogs often live in green environments.
(E) Tuft is a white rock that is made by volcanoes.	(B) On a single human taste bud, there are many cells that can sense (taste) several different things, such as sweet, salty, and sour.

## Combining Ideas from Co-constructing Statements

- Many predators live in green forest environments.
- Green tree frogs often live in green environments.

Green tree frogs avoid predators by blending into the green environment.

OR

Predators probably don't have much success finding green tree frogs in a green forest.

- On the human tongue, there are about 10,000 taste buds.
- On a single human taste bud, there are many cells that can sense (taste) several different things, such as sweet, salty, and sour.

The human tongue can probably taste a lot of different things because it has so many taste buds and cells.

OR

The human tongue is very complex and has a lot of microscopic things going on to help it sense different tastes.

- Some jobs require that people have good hand-eye coordination.
- People who play video games can have better hand-eye coordination over time.

Some jobs might require that people have played video games before they can be hired for those jobs.

OR

Some people who play video games might be hired for jobs because they will be good at those jobs.

- Balloons filled with helium can rise into the atmosphere and travel great distances. Balloons filled just with someone's breath usually can't travel far at all.
- A balloon that was let go in one town was found three miles away.

The balloon must have been filled with helium.

OR

The balloon probably wasn't filled with only someone's breath.

- Tuft is a white rock that is made by volcanoes.
- Obsidian is a black rock that is made by volcanoes.

Volcanoes form different kinds of rocks.

OR

Both tuft and obsidian are rocks that are made from volcanoes.