**Lesson Two:**

**Uptake Questions**

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| Part | Content |
| Part 1 | Introduction to Uptake Questions |
| Practice | Uptake Questions |

# **Overview**

The purpose of this discourse lesson is to introduce uptake as a type of authentic question. Uptake questions create opportunities for promoting students’ high-level thinking and mathematical reasoning during mathematics task-based discussions. The teacher will introduce students to uptake questions by building on what students know about authentic questions. Students will practice creating uptake questions in a small-group activity.

# **Objectives**

At the end of this lesson, students will be able to:

* identify uptake questions, and
* create uptake questions.

# **Materials**

Question tree

Sticky notes of authentic questions from Lesson One

### **Part 1: Introduction to Uptake Questions**

Remind students about what they learned in Lesson One. Test questions are questions whose answers can easily be found or determined. They generally have only one correct answer and can be answered with a number or a few words. Authentic questions are questions that have more than one correct answer and are open to argument, debate, and discussion. Authentic questions are special because there are different *kinds* of authentic questions. The focus of this lesson is on a type of authentic question called an uptake question.

### **[Slide 2: Read]**

Inform students that they are going to learn about a specific type of authentic question: uptake questions.

### **[Slide 3: Uptake]**

Introduce the idea of uptake questions.

Explain that:

* Uptakeis when someone asks a question about what someone else already said or asked.
* Explain that students need to listen carefully to what other group members say so they can ask for more information.

### **[Slide 4: Example 1]**

Remind students that when we are given a math problem, we can ask questions about the problem that help us solve the problem. Explain that the purple box on the left contains the math problem that the teacher wants her students to solve. On the right side, students ask and reply to questions about the math problem in order to help to solve it.

Read the math problem is the purple box: There are 8 students in line for ice cream, and one-half of the students want vanilla. How many want vanilla ice cream?

Then read the example conversation.

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| Audrey | What are some different ways to represent the “part” and the “whole” in this situation? |
| Carlos | I would draw the students in two lines to represent the parts and all of the students would be the whole. |
| Chloe | Why would you draw the students in two lines? |

In this example, Audrey starts off asking an authentic question about the math problem. Carlos responds to her authentic question by describing how he would represent the parts and the whole with a drawing. Finally, Chloe asks an *uptake question*, **“Why would you draw the students in two lines?”**

### **[Slide 5: Example 2]**

Inform students that they will see a second example of an uptake question.

Read the math problem is the purple box: Akiko’s teacher wants her to add 98 and 43. What is the sum of these numbers?

Then read the example conversation.

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| Carlos | What are some ways for Akiko to add these two numbers without doing a lot of extra work? |
| Chloe | I would use the give-and-take method to add them because I think that’s an easy method and also 98 is very close to 100, which is a friendly number. |
| Audrey | How would the give-and-take method work on this problem? |

In this example, Carlos starts off asking an authentic question about the math problem. Chloe responds to his authentic question by describing why she would choose to use the give-and-take method to solve the problem. Finally, Chloe asks an *uptake question*, **“How would the give-and-take method work on this problem?”**

### **[Slide 6: Question Tree]**

* An uptake question is a type of authentic question because it helps students build off something that was said or asked previously. It stimulates discussion by encouraging students to examine a concept or idea more deeply, and it allows students to follow-up on important or interesting aspects of others’ previously asked questions or responses.

### A cartoon of a person holding leaves Description automatically generated

### **[Slides 7–9]**

**Practice: Authentic Questions and Test Questions**

### **[Instruction]**

# In this practice, a cooperative-grouping situation (3-5 students) is recommended where students can take a shared role in generating questions about the math problem and practicing responding to them. If possible, students should go back to the same small group as in Lesson One.

### **[Before]**

Have the students read “Jeffrey’s multiplication problem” again. Let students know that they will be focusing on asking and responding to uptake questions based on this problem. Assign one authentic question from the sticky notes collected in Lesson One to each small group.

### **[During]**

Each small group practices answering the authentic question by generating different responses. Encourage students to generate uptake questions based on other students’ responses. Students can practice responding to them and trying to generate other uptake questions.

### **[Examples of Uptake Questions]**

* Authentic question: What are some ways we could use what we know about multiplication?
  + Response: We know that multiplication and division are inverse operations, so we could try division.
  + Uptake question: How would you know what numbers to use for division?
* Authentic question: How can the two zeros in the number 2300 help us to come up with solutions? 
  + Response: Zeros represent powers of 10, so we could just move the decimal place once to the left and that times 10 could be what Jeffrey multiplied.
  + Uptake questions: What might happen if we moved the decimal to the right instead of to the left?