

Examine Video

- Imagine how you would teach the beginning of the [3B fractions](#) unit (pages 57-64).
- Read over Akihiko Takahashi’s [lesson plan](#) for a series of three lessons based on this textbook segment, introducing fractions to grade 3-5 students in California.

The chart below suggests stopping points and questions to consider as you watch the video from Dr. T’s lessons. You may find it useful to print out the lesson plan and the chart below for reference as you watch and discuss the video. The links to the three lessons can be found here:

- [Lesson 1](#)
- [Lesson 2](#)
- [Lesson 3](#)

Analysis of TTP Lessons: Introduction to Fractions, Akihiko Takahashi

We suggest points to stop [STOP] and consider preceding questions. (If watching video online, you will need to move the cursor over the lower part of video to see the timecode.)

| Lesson Phase | Points to Observe and Discuss |
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| Lesson 1 | |
| Introduction, posing and understanding the problem (brief): Asking about numbers on road sign, introducing 2-meter strip, and strip a little longer than 1 meter. | What questions and moves enabled Dr. T. to check on students’ understanding of fractions? What images and ideas might students gain from looking at the board, and how might they influence their thinking? Why does Dr. T. ask students to predict the size? Why is the problem worded as it is? [STOP at 8:11] |
| Independent Problem-Solving 3 problems: $1/3$, $1/2$, $1/5$ | Describe and explain his questions and moves when circulating to the groups. Note down any student data that helps you think about the advantages and disadvantages of solving this problem individually vs. in a partnership or group. [STOP at 9:42] |
| Presentation of Students’ Solutions, Class Discussion (Neriage) | Why does Dr. T. ask students to show how they drew a line? What supports students’ understanding of other groups’ presentations? [STOP at end of Lesson 1] |
| Lesson 2 | |
| Introduction Poster of yesterday’s instruction, introduction of student’s journal, posing of new problem ($2/5$) | Describe the content of the introduction, and explain why you think Dr. T. chose to make the poster and share this journal entry? [STOP at 4:40] |
| Independent Problem-Solving $2/5$. Note: Mr. T. mistakenly presented $2/5$. He planned to present $2/3$ first, which might have been easier for students! | When a student says, “It’s hard because this one is half of this piece,” Dr. T. says, “Ahhhh,” but does not further comment. Discuss this choice. Discuss the role of the posted colored strips, included in the summary of the class’s Day 1 learning. [STOP at 8:40] |
| Presentation of Students’ Solutions, Class Discussion (Neriage) Independent Problem-Solving $2/3$; Presentation of Students’ Solutions, Class Discussion (Neriage) | Why might Dr. T. have chosen these particular solutions for presentation? What key mathematical ideas are brought out in the neriage? What teacher moves and questions support the students’ presentations and the neriage? How are the students helped to understand and link visual representations and abstract symbols? [STOP at end of Lesson 2] |

| Lesson 3 | |
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| Introduction, Posing Problem and Independent Problem-Solving: Make 3/4 | Why might Dr. T. have given a strip slightly less than a meter? Describe the focus of the <i>neriage</i> discussion here and why you think this focus was chosen. [STOP at 13:35] |
| Posing Problem and Independent Problem-Solving: Make a Fraction Chosen by Your Group | What questions does Mr. T. ask during the discussion? Why? This series of lessons has several episodes of summary and consolidation of ideas. Describe one. [STOP at end of Lesson 3] |

If you decide to revisit Dr. T.'s lessons when planning your research lesson, the linked summary of the video excerpts may also provide a useful refresher on the flow of Dr. T.'s lessons. [Link to excerpts coming soon! 09/03/2013]