# Developing and Investigating Unscripted Mathematics Videos

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## Developing Unscripted Videos and other Supports

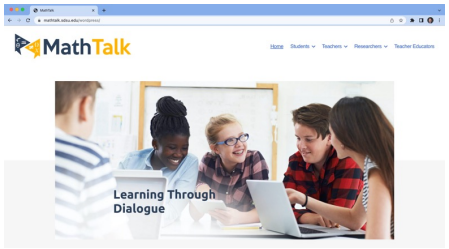
### Video Units

- MathTalk.org contains 8 video units on Algebra I and Algebra II topics
- Each unit features about 40 videos
- Videos are conceptually coherent and ideas build over time

### Resources for Teachers

- Potential conceptual challenges
- Focus questions
- Questions to support dialogue
- Ideas for math extensions

**Visit Mathtalk.org for these resources**



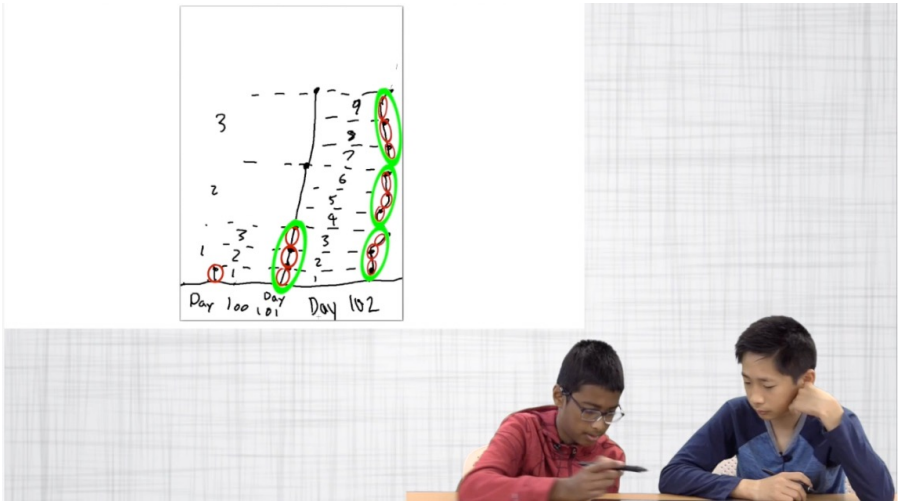




Figure 1: A screenshot from a MathTalk instructional video

## Why Reimagine Instructional Videos?

- Online videos are attractive for many reasons (e.g., users can control rate, users can review, access to many topics).
- Using videos in a flipped model has increased learning outcomes (Güler et al., 2023).
- However, videos tend to be procedurally-focused and expository (Bowers et al., 2012).
- Given researchers' understanding of teaching and learning, relying only on procedurally-focused and expository videos is undesirable.

## Investigating Learning from Unscripted Videos

### Research Questions

1. What can diverse populations of vicarious learners learn mathematically from dialogic videos, and how do the vicarious learners orient to the talent in the videos?
2. What is the nature of vicarious learners' evolving ways of reasoning as they engage with multiple dialogic video lessons over time and what processes are involved in vicarious learning?
3. What instructional practices encourage a classroom community to adopt productive ways of reasoning from dialogic videos?

### Emerging Research Findings

- Appropriation of meanings from videos is a complex process
- Students need opportunities to evoke their own meanings and ways of reasoning in order to use unscripted instructional videos to develop new meanings
- Misconceptions expressed in videos invite a negotiation process which can help students develop rich mathematical meanings

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