

# Reading Training: Week 3

Reading Training: EECS 183 Transfer Training Study

SIGN IN & GRAB YOUR WORKBOOK / FLASHCARDS

# Today's Agenda: Before Break (50 min)



- Weekly Diary: <https://forms.gle/CDtjEX1gET2zWxR6A> (5 min)
- Ice Breakers: (5 minutes)
  - Introduce yourself to your table and share what superpower you would have
  - Share with the group
- **Workbook Warmup:** More Context Clues & Analogies
  - Individually do pages 20-30 (20 min - get as far as you can in this time!)
- **New Vocabulary:** Add flash cards to your deck for the 5 following words: (5 min)
  - distend
  - gouge
  - levee
  - abstemious
  - commensurate
- **New Vocabulary:** Quiz with your neighbor - don't just define the word - also use it in a sentence! (5 min)
- All Vocabulary: Quiz all the vocabulary (this week and last week) with your neighbor (10 min)

The image features a solid orange background. In the top-left corner, there are three vertical bars of varying heights, each composed of several overlapping semi-transparent circles. In the bottom-right corner, there are four vertical bars of increasing height from left to right, also composed of overlapping semi-transparent circles.

**BREAK! (10 minutes)**

# Today's Agenda: After Break (50 min)



- Last week we learned the overall structure of a research paper. This week, we will be delving into the first section, the introduction!
- Video 1: [How to Write an Introduction](#) (7 min)
  - From the perspective of writing a paper, this video explains the introduction purpose
- Scientific papers are meant to be **persuasive**: The author is trying to convince you (the reader) of the validity and importance of their conclusion
- One common and excellent way to structure the introduction of a scientific paper is to use the **Heilmeier Catechism**: a template for making a persuasive argument

# Heilmeier Catechism



The Heilmeier Catechism is a set of 8 questions that can help guide a proposal.

1. What are you trying to do? Articulate your objectives using absolutely no jargon.
2. How is it done today, and what are the limits of current practice?
3. What's new in your approach and why do you think it will be successful?
4. Who cares? If you're successful, what difference will it make?
5. What are the risks and the payoffs?
6. How much will it cost?
7. How long will it take?
8. What are the midterm and final "exams" to check for success?

Video: Let's learn a little more about the [Heilmeier Catechism](#) (2 min)

Video: Let's see the Heilmeier Catechism being used for [writing a career funding grant](#) (10 min)

# Heilmeier Catechism and Research Papers



- The Heilmeier Catechism is often used in the introduction of a research paper
- This is so because the introduction of a research paper functions as a proposal for the rest of the paper. The catechism can be adapted to a research paper introduction as follows:

1. State the overall motivating problem for the research
2. Describe the elements of a good solution to the problem
3. Describe the current state-of-the-art
4. Describe how the state-of-the-art **does not** have the properties listed for a good solution
5. State insights (what new things are the paper going to use to help solve the problem?)
6. State the proposal - the scientific contribution of the paper
7. Describe how proposed solution **does have** the elements of a good solution that were listed

Google for the paper: *InFix: Automatically Repairing Novice Program Inputs*

- This is a paper I (Madeline) wrote last year, and the introduction follows the plan above
- Read the introduction of the paper (10 minutes)
- Then with your neighbor, identify each of the 7 elements above (10 minutes)



# Heilmeier Catechism Debrief (5 min)

- Knowing this catechism is helpful for two main reasons:
  - When reading papers, it can help you read the introduction faster because you can look for the different sections
  - When writing persuasive proposals, it can help give them more structure