

# Can 3 wrongs make a right?

Using Test Items to Drive Student Thinking

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# What is assessment?

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- Voodoo
- Punishment
- The bane of my existence
- A sadistic plot
- A process of reasoning from evidence
- All of the above
- None of the above



# My answer, and some other points

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- Assessment is a process of **reasoning** from **evidence** about **student understanding**.
- Assessment is an essential part of instruction.
- There are also other purposes for assessment.
- Assessments are usually made for a purpose (but often co-opted for other purposes).
- Assessments for different purposes should probably look different.
- **Students *can* learn** from assessment too.



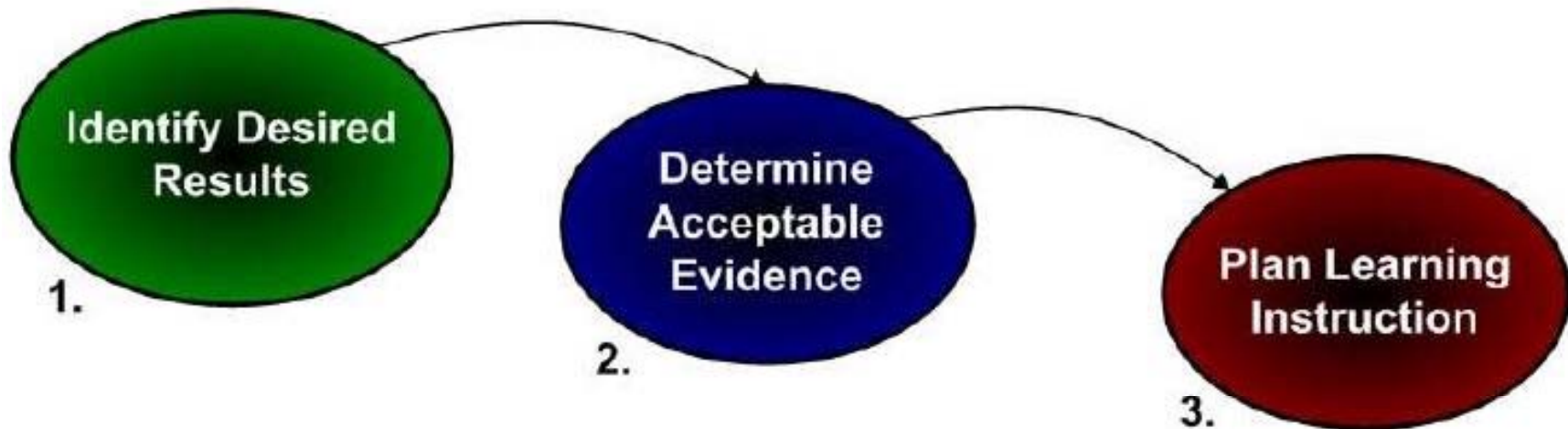
# Introductions

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- Who am I?
- Who are you?
- Why are we here?
  - To learn more about large-scale assessment...
  - ... and how we can apply ideas in the classroom
  - How we as teachers can learn from assessment
  - Using items to spur higher-order student thinking

# Assessing at large and small scales

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# How assessment differs by scale

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- What are some ways in which large-scale assessment is similar to or different from classroom assessment? Think about...
  - Item types
  - Content
  - Frequency
  - Producers
  - Consumers



# Making large-scale assessments

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- Standards
- Assessment framework
- Blueprint
- Items
- Field-testing
- Form

<http://www.isbe.state.il.us/assessment/math.htm>



# What makes a good item...

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- ... on a classroom test?
- ... on a large-scale assessment?
  
- In what ways would the answers be the same?
- In what ways might they differ? Why?
  
- A non-obvious criterion: **alignment**



# Which parts do we care about?

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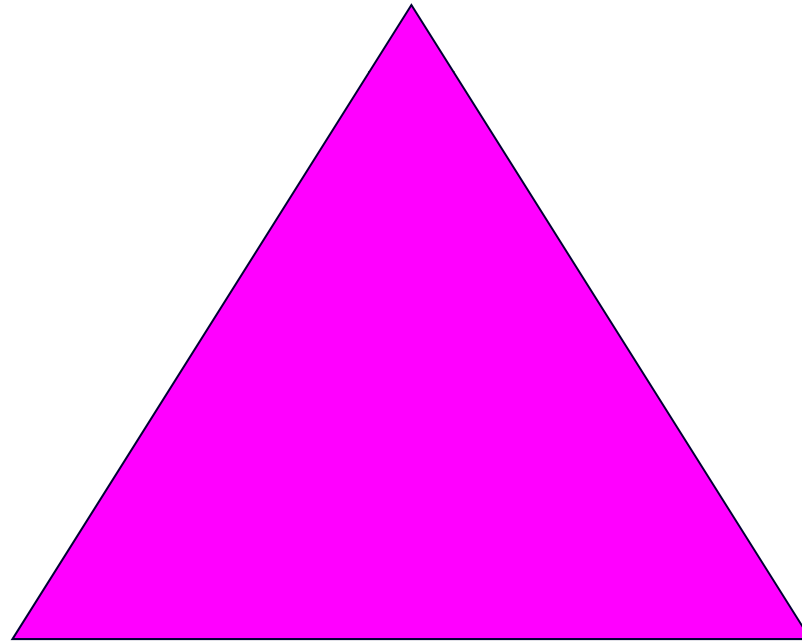
- Creating items and assessments
- Understanding the results of assessments
  
- What about our students?
  - What should they **know** about this process?
  - What are some important **feelings** to reinforce?
  - Could this improve their **math understanding**?



# The assessment triangle

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**Interpretation**



**Cognition**

**Observation**



## The goal

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Kids get the item right for the right reason, and wrong for the right reason.

The right reason is understanding of the objective.



A rectangle has length 3.7 cm and width 5.4 cm. What is its perimeter?

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A. 8.1 cm

B. 9.1 cm

C. 16.2 cm

D. 18.2 cm

A. 18.2 cm

B. 18.2 cm<sup>2</sup>

C. 19.98 cm

D. 19.98 cm<sup>2</sup>



# Building a multiple-choice item

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- ❑ Figure out what you're trying to assess
- ❑ Make a task (stem or prompt) and answer it
- ❑ What misconceptions most concern you?
- ❑ Create distractors based on misconceptions
- ❑ Clean up your item and options
- ❑ Is it still aligned with the objective?



# You wrote a test. Now what?

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- Now that we have good items, how do we as teachers learn from the assessment results?
- All data gets meaning through **comparison**
  - Across domains for one student at one time
  - Across time for one domain for one student
  - Across students for one domain at one time
- Or, for advanced users...



# Promoting student thinking

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- How can assessment items, and our practices and use of them, promote student thinking?
  
- What are our ideas?
  - Might think of these as “feel” / “think” / “act”
  - Or, as “before” / “during” / “after” assessment
  - What are some common themes?



# Some ideas for the classroom — 1

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- Grading for work, not just for the answer  
(also a way to give more feedback per minute)
- Build understanding of distractors as errors  
linked to misunderstandings (not random)
- Build effective test-taking habits  
(really, this is about critical reading)
  - Anticipating options
  - Using the information provided



## Some ideas for the classroom — 2

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- Have them use an MC item to explain the error behind each distractor (good opener/launch task)
- Have students devise distractors and write rationales
- Can lead up to writing items, if you scaffold at first:
  - at the end of a unit
  - for prior learning topics (review)
  - in groups
  - for more “procedural” topics



# Cognitive demand

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- (How) does this item make students think?
- Low: Recall, recognition, perform procedure
- Medium: Represent, multi-step, integrate, apply, solve a problem, compare, justify
- High: Plan, analyze, judge, create, abstract, generalize, formulate a problem
- What kinds of items can do each?



# Classroom practices, part 3

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- What methods have you used?
- Let's discuss challenges and successes...
- What are your open questions?



# How will this affect your teaching?

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- What's one idea you've gained or one connection you've made?
- What's one thing you're going to try?
- What's one thing you'll tell someone about?



# Thank you!

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- Please email with feedback, corrections, questions, ideas, comments, and resources!
- I'm happy to send you these slides

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