



Prompting Inquiry: Using Commercial Games for Rich Math Learning

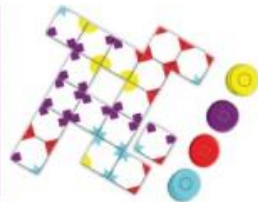
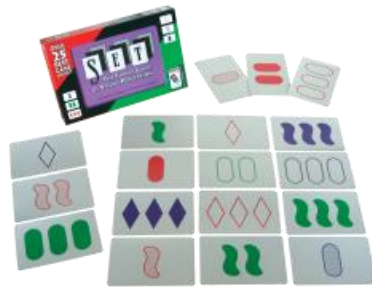
Kaitlyn Ireland & Janelle McFeetors
Faculté St Jean & U of Alberta

Learning through Games

- Exploring
- Analyzing
- Convincing

(McFeetors & Mason, 2009)

Explore a Game



Gallery Walk

- On flip chart paper record connections to POS
 - Goals for Students (pp. 2-3)
 - Mathematical processes (pp. 4-6)
 - Nature of math (pp. 7-8)
 - Specific outcomes

Learning through Experiences

... they are periods of **genuine reflection**
only when they follow after
times of more overt **action**
and are used to **organize**
what has been gained in **periods of activity**
in which the hands
and other parts of the body
beside the brain are used.

(Dewey, 1938/1997, p.62)

Prompting Matters

At the heart of using **productive talk** in instruction are the **questions** we pose.

Our questions are the **catalyst** for students' **thinking and talking**. ...

The most **challenging questions** ask students to **explain** a complex situation, **evaluate** the usefulness of a method, or **synthesize** a set of findings.

Setting the Stage

- Shifting the focus

*We're not playing
games in math class,
we're in math class
playing games!*

~~Evan

Setting the Stage

- Shifting the focus
- Raising expectations

*You have a good
chance of winning
and a lot of strategies.
~~Owen*

Setting the Stage

- Shifting the focus
- Raising expectations
- Listening

Use your 66s and 99s: If you hear someone explain a good idea, write it down!

~~Nancy

Setting the Stage

- Shifting the focus
- Raising expectations
- Listening
- Creating partnerships

Pick a mathematically productive partner—not a dance partner—someone who challenges you to think hard and generate new ideas.

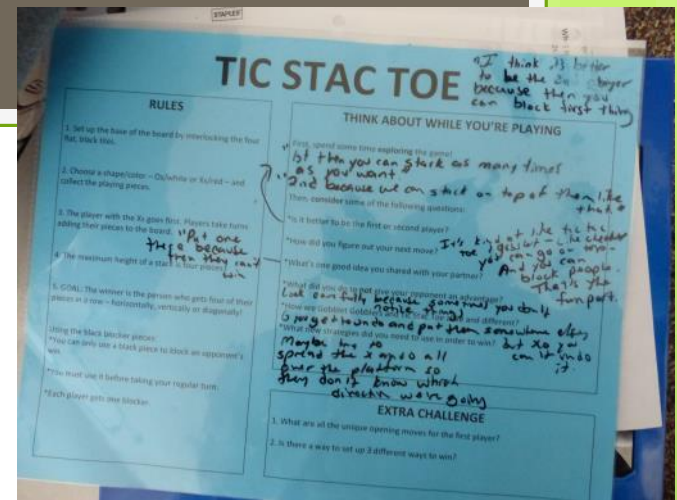
~~Nancy

Attending in the Moment

- Anticipating key moments

I think those guiding questions ... is just having that opportunity to articulate things I think makes a difference.

~~Candice



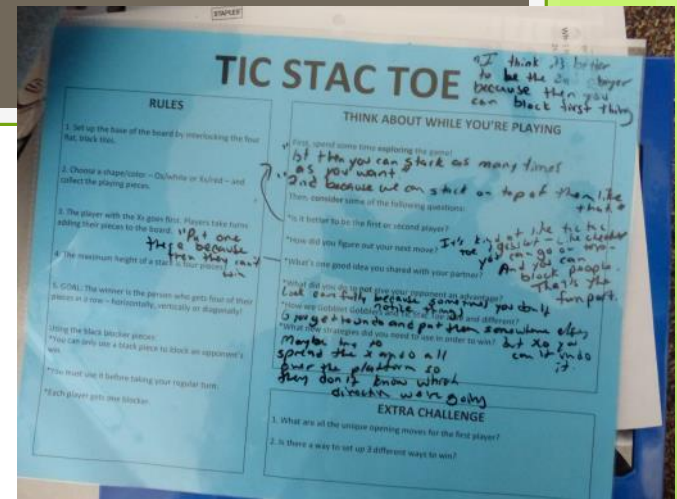
The questions actually made me play the game better. I made new strategies. ~~Erica

Attending in the Moment

- Anticipating key moments
- Building on specifics

I would say I used them primarily as jumping off places. I would see another question that was forming to do with strategy, like, “I noticed you just did this and I’m wondering what the purpose was.”

~~Nancy



Attending in the Moment

- Modeling curiosity

And that we were copying down what they said so that they could see what we privileged and got excited about. And they started to think about why that was important, and why their ideas were meaningful. And then they started to build on that.

~~Nancy

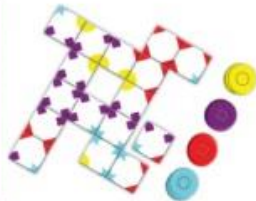
Attending in the Moment

- Modeling curiosity
- Using tact

You could tell if they were extremely focused, you'd be cautious of how you were asking the question so you weren't disruptive.

~~Candice

Analyze a Game



Re-viewing Math Thinking

- Generating ideas with partners
- Creating space
- Providing cases
- Eliciting justifications



Your Turn!

- What questions did you ask your colleagues to draw out their math thinking?
- Jot down a prompt you can use next week during a game/activity to prompt a math conversation with students.
- Jot down one approach to posing questions you'll try next week.

References

- Chapin, S. H., O'Connor, C., & Anderson, N. C. (2009). *Classroom discussions: Using math talk to help students learn*. Sausalito, CA: Math Solutions.
- Dewey, J. (1938/1997). *Experience and education*. New York: Touchstone.
- McFeetors, P. J., & Mason, R. T. (2009). Learning deductive reasoning with games of logic. *Mathematics Teacher*, 103(4), 284-290.