Meaningful Support for Teachers

Specific Ways to Encourage Game-Based Learning in the Classroom

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Let’s Learn

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Impact of *Math Snacks* Games Use
Math Test Performance of 5th Graders

*n=741 students in fifth grade*

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**Math Snacks** introduced to Group A after Test 1

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Group B continued with *regular instruction*
Impact of *Math Snacks* Games Use Math Test Performance of 5th Graders

*n=741 students in fifth grade*

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**Test 1 - Test 2**

*Math Snacks* introduced to Group A after Test 1

*Math Snacks* introduced to Group B after Test 2

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Let’s Learn
gameplay

create some numbers
Gate is a game where students take a journey to free spirits from darkness. At the start of each level, the player builds numbers to open the gate. Then, they defeat monsters by building similar numbers. Gate isn’t just about place value: it helps students start to compose and decompose numbers with addition, subtraction, and multiplication — gradually doing so in more efficient ways. It will take students a few levels to become proficient with the game mechanics for building the numbers.

There are 16 levels in this game and students will be asked to build numbers as large as 999 and as small as .01. Students are encouraged to use addition, subtraction, and even multiplication to build these numbers as efficiently as possible. Please make sure to point out the number line at the bottom of the screen and the number wheel under the main character.

Talking is allowed! Encourage your students to talk to each other and share strategies. Remind students that proper hand placement on the keyboard helps. Turn the sound up on the game – that helps too!

Time Required: Two gaming sessions: 40 minutes each. Bonus activity: 30 minutes

Learning Objectives: By playing Gate and engaging in at least one of the recommended bonus activities, students will be able to:
- Build numbers using addition, subtraction, multiplication, and division.
- Recognize place value from hundreds to hundredths.
- Develop mental computation skills using place value and the four basic operations.

Vocabulary: Hundreds, tens, ones, tenths, hundredths, decimal, place value

Vocabulary in Spanish: Cientos, decenas, unidades, décimas, centésimas, decimal, dar un valor

Materials and Technology required:
- Access to computers and the Internet
- Bonus activity: Strips of white paper and sheets of colored construction paper

Play Gate and view the Teaching with Gate video at http://mathsnacks.com/gate-en.html
What have we created to support teacher development?

Support Materials

Comprehensive website: Geniversity
- Planning materials
- Quick Start
- Teacher guides
- Lesson plans
- Assessments
- Screencast videos
Teacher Guides

- Overview
- Preparing
- Considerations
- Potential difficulties
- Key points
- Questions for deeper thinking
- Underlying genetics

Lesson Plans

- Materials
- Eliciting prior knowledge
- Engage/Explore/Explain
- Evaluate
- Follow-up
Online Course
To front load, or not to front load? That is the question.

By now you've probably noticed that Gertrude uses maximal generative vocabulary. You've probably also noticed the distinct lack of Punnett squares, as well as lack of detail about meiosis and proton synthesis. This is intentional, and has made some teachers we've worked with wonder. If any of these things have left you feeling a little queasy, listen to what James Paul Gee has to say. Perhaps he'll put your mind at ease, at least a little.

(This video was found at adelupes and was produced with support from the John D. and Catherine T. MacArthur Foundation)
Teacher Materials

• Video clips
game play examples

• Discussion Guides
include tips on how to break down video clip content

• Teacher Play Guides
content support, navigation tips, & guiding questions

Teacher Materials (cont.)

• Teacher version of game (QS only)
all levels unlocked

• Sample "bridge" activities
EdGE-developed classroom activities that tie game content to formal instruction
What were our “a HA” moments?

Lessons Learned

- Keeping together vs. own pace
- Content knowledge / experimentation
- Practices take practice
Aha Moments (Lessons Learned)

- **Keep It Simple**
  don’t ask teachers to add too much

- **Teachers Want Control**
  customizability & monitoring capabilities are popular requests from teachers

- **Learning More…**
  reviewing & coding teacher logs, looking for new/additional ways to support teachers

How do we help teachers prepare to use games?
Helping Teachers Prepare

- To play’s the thing
- How to use the narrative
- Argumentation support
- Triple threat

Teacher Guidance

- **Google Drive Folders**
  contain all materials & supports for participation in research study

- **Encourage Teachers to Play**
  games are not just for students—teachers need to play too!

- **Keep in Touch**
  email teachers regularly to provide positive reinforcement … and the occasional “nudge”
Let’s discuss

What do we still need from each other?
“What do we still not know?”
“What can we help each other do?”
“What unexpected thing should we expect?”