Blended Learning Strategies for COMMON-CORE MATH

Sponsored by: DreamBox Learning
Michelle R. Davis
Senior writer, Education Week Digital Directions

Follow Michelle on Twitter: @EWmdavis
Blended Learning Strategies for Common-Core Math

Expert Presenters:

Sarah Lwanga, math department chairperson, Riverside Virtual School, Riverside, Calif.

Suzy Brooks, third grade teacher at Mullen-Hall School, Falmouth, Mass., and author of the teacher support blog Technically Invisible
An on-demand archive of this webinar will be available at www.edweek.org/go/webinar in less than 24 hrs.
Blended Learning Strategies for Math

Sarah Lwanga
Middle School Math Teacher
Riverside Virtual School
Riverside, CA
Blended Learning

- **Blended learning** is education that combines face-to-face classroom methods with e-learning (electronic learning)

  ~Wikipedia
E-Learning

- Can be
  - in / out of classroom
  - self-paced / instructor led
  - asynchronous / synchronous
  - distance / face to face
  - flexible
My Current Position

- Blended Learning Educator
- Middle School Mathematics
- Attend 3 days a week, 3 hours a day, coursework is done online.
Why Blended Learning?

- **Build Your Own School - BYOS**

- Resources & Learning are individualized and wrap around each student to create a personalized learning experience.

- It’s not about the teacher, it’s about the student.
BYOS allows for Differentiation

- Each student learns the math they need.
- PreAlgebra (7th grade)
- Filling in the holes
BYOS allows for personal learning

- E-Learning allows for students to learn their own way.
BYOS allows for individual accountability

- E-Learning expects students to be responsive to all classroom experiences, not just a few.
My Resources

- Game Based / Mastery Based Learning – Foundational Skills
- Discussion Boards & Blogs – Exploration
- AVID Tutorials – Deliberation
- Problem-Based Learning – Assessment
Game Based Learning

- They are faced with problems to try and persevere through.
- Games help them to do this, building foundational knowledge
- Students mastering foundational skills
Game Based Learning

Source: Mangahigh.com
<table>
<thead>
<tr>
<th>Achievement</th>
<th>Goal</th>
<th>Medals won</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adding &amp; subtracting up to 10</td>
<td>Beat the Target Rating in all Group A tables</td>
<td>7 8 9</td>
</tr>
<tr>
<td>Adding &amp; subtracting up to 20</td>
<td>Beat the Target Rating in all Group B tables</td>
<td>7 8 9</td>
</tr>
<tr>
<td>Adding &amp; subtracting up to 100</td>
<td>Beat the Target Rating in all Group C tables</td>
<td>7 8 9</td>
</tr>
<tr>
<td>Multipling &amp; dividing by up to 5</td>
<td>Beat the Target Rating in all Group D tables</td>
<td>7 8 9</td>
</tr>
</tbody>
</table>
ST Math

- Game Based Conceptual Learning of Mathematics
- Through repeated reasoning, students find generic processes.
$2^5$

$2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$

$5 + 5 + 5 + 5 + 5 + 5 + 5$

$5 \times 5 \times 5 \times 5 \times 5 \times 5 \times 5$

$2 + 2 + 2 + 2 + 2 + 2 + 2$
Mastery Based Learning

- ALEKS
- Khan Academy

- Recommended for students who don’t want the gaming experience

- Student mastering foundational skills
Discussion Boards

- Facilitate a classroom discussion about math

- Questions must be open ended.
- Quality Discussion Boards come after students have foundational knowledge

- Ex: Should you be allowed to use a calculator, why or why not?
Blogs – upcoming

- Summary
- Brainstorming
- Math Language Development
AVID Tutorials

- Students bring their point of confusion in math
- It is not homework help
- Students work together to grapple with a question about a problem.
- Goal = get past the point of confusion, not to get an answer.
- Students arrive with their knowledge and AVID tutorials help to clarify and support learning.
DreamBox Combines Three Essential Elements to Accelerate Student Learning

Rigorous Elementary Mathematics
- Common Core State Standards
- Standards for Mathematical Practice

Motivating Learning Environment
- Student directed, empowering
- Gaming fundamentals, rewards

Intelligent Adaptive Learning™ Engine
- Millions of individualized learning paths
- Tailored to a student’s unique needs
Blending-In
Technology Strategies in the Common Core Mathematics Classroom

Suzy Brooks
Falmouth Public Schools
Falmouth, MA
About Me

Grade 3 teacher Dreaming Big

Instructional Technology Specialist

Technically Invisible & SimplySuzy
My Reality

- Integrated Class with 16 students
- New Math Pilot
- New Writing Program
- BYOD/Flipped/iPad Classroom
- Implementing #CCSS and new Teacher Evaluation
Why Are We Blending In?

- Limited time
- Limited resources
- Wider range of interests, levels, learning styles
- Student Choice = Engagement
- Rethinking Teaching & Learning
## Math

**Effective Mathematicians**

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.

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Subject: ____________  Date: ____________

<table>
<thead>
<tr>
<th><strong>C</strong></th>
<th><strong>E</strong></th>
<th><strong>S</strong></th>
<th><strong>S</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Release</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Embrace</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Standards**

**Practice**
Nervous?? No kidding.

- Start Small - One subject, one day
- Become familiar with available resources
- Take a class
- Reach out
- Lean on your students
Define Blended Learning, Please.

- Individualized: Based on Student, Subject, Support
- Requires Flexibility of Thought & Action
- Dynamic and Varied Technology, Groupings & Lessons
- Depends on Grade Level
Need a Genius?

- Big Picture Learning’s article, *At the Core of the Apple Store*.

- Run your classroom much like an Apple Store.
  - Whole Group
  - Individual
  - 1:1
  - Small Group
  - Independent / Self-Directed
Maximize Resources

- SMARTBoard as a Learning Center
- BYOD/BYOT
- Write Now, Tech Later
- Say CHEESE!!!
- BLT (Before Lab Time)
- CONTRACTS
- If it’s Free, it’s for ME!!
SMARTCenters
Online Games & Manipulatives or Handwritten

National Library of Virtual Manipulatives
Drivers’ Education
BYOD / BYOT

iPad, iTouch, iPhone
Android Tablet
Nintendo DS
Netbook, Laptop
eReader
Write Now, Tech Later
Flip Over Math

Flip Over Math Video
BLT (Before Lab Time)

1. XtraMath (2 rounds)
2. Type To Learn (10 min)
3. New Blog Post
Say Cheese!

Using digital cameras, take pictures of student work, so that it can be digitally shared later on in a slideshow, portfolio, minilesson, small group, or in a blog post.
### Weekly Math Mission

#### Contact Mission Control

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
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<tbody>
<tr>
<td>Monday:</td>
<td></td>
</tr>
<tr>
<td>Review</td>
<td>2:00</td>
</tr>
<tr>
<td>New</td>
<td>2:20</td>
</tr>
<tr>
<td>Tuesday:</td>
<td></td>
</tr>
<tr>
<td>New</td>
<td>1:45</td>
</tr>
<tr>
<td>Review</td>
<td>2:20</td>
</tr>
<tr>
<td>Wednesday:</td>
<td></td>
</tr>
<tr>
<td>Review</td>
<td>2:00</td>
</tr>
<tr>
<td>Thursday:</td>
<td></td>
</tr>
<tr>
<td>Extend</td>
<td>1:45</td>
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<tr>
<td>Review</td>
<td>2:00</td>
</tr>
<tr>
<td>Friday:</td>
<td></td>
</tr>
<tr>
<td>Review</td>
<td>1:45</td>
</tr>
<tr>
<td>Assess</td>
<td>2:00</td>
</tr>
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</table>

**My Math Fact Family:**

---

#### Team Endavors

<table>
<thead>
<tr>
<th>Day</th>
<th>With Whom?</th>
<th>Initials</th>
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<tbody>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Complete Challenge Card
- Flashcard Practice
- Game Play
- Flip Over Math

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#### Flying Solo

**Workbook Pages:**

- 153, 154, 155
- 156, 157, 158

**ScootPad:**

**Level:**

**Technology Connection:**

---

#### ANSWER Strategy

(on back)

**Number of the Day:**

<table>
<thead>
<tr>
<th>M</th>
<th>T</th>
<th>W</th>
<th>T</th>
<th>F</th>
</tr>
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<tbody>
<tr>
<td>769</td>
<td>423</td>
<td>87</td>
<td>2013</td>
<td>567</td>
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</tbody>
</table>

---

**My CAFE Goal:**

- C: Computation
- A: Awareness & Accuracy
- F: Fact Fluency
- E: Explain my thinking

---

**NAME:**

**Math in Focus Chapter 8**

**DATES:**

Feb 25, 26, 27, 28, Mar 1
If it’s FREE, it’s for ME!!

- Apps
- Websites
- Donations
Coming Soon to a Classroom Near..... YOU!!
Thank you!

Simply Suzy
DreamBox Learning: What We Do
Reinvent the Learning Experience

- **Truly Formative Learning:** Eliminate the wall between Instruction and Assessment
- **Conceptual Understanding & Procedural Fluency**
- **Common Core Aligned:** Consistent Progressions & Coherent Connections
- **Dynamic, continuous & real-time data feed the adaptive engine** – averaging 50,000 data points per hour per student
Intelligently adapt & individualize to:

- Students’ own intuitive strategies
- Kinds of mistakes
- Efficiency of strategy
- Scaffolding needed
- Response time
Why is DreamBox so Effective?
Integrated Assessment and Instruction

Students who demonstrate understanding of this concept skip the unit and move to a new skill assessment.

Students who don’t have these skills work through a unique sequence of lessons in the unit to learn these concepts.
# Robust Reporting

## Classroom Summary Report

<table>
<thead>
<tr>
<th>Student</th>
<th>Grade</th>
<th>Kindergarten Curriculum</th>
<th>1st Grade Curriculum</th>
<th>2nd Grade Curriculum</th>
<th>3rd Grade Curriculum</th>
<th>Time on Task (HH:MM)</th>
<th>Notifications</th>
<th>Student Reports</th>
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<tbody>
<tr>
<td>Alexander F</td>
<td>1</td>
<td>🟢</td>
<td></td>
<td></td>
<td></td>
<td>17:55</td>
<td></td>
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</tr>
<tr>
<td>Alexi K</td>
<td>1</td>
<td>🟢</td>
<td></td>
<td></td>
<td></td>
<td>14:04</td>
<td></td>
<td>Weekly Details</td>
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<tr>
<td>Billy R</td>
<td>1</td>
<td>🟢</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Brianna S</td>
<td>1</td>
<td>🟢</td>
<td></td>
<td></td>
<td></td>
<td>51:43</td>
<td></td>
<td>Weekly Details</td>
</tr>
<tr>
<td>Cassandra H</td>
<td>1</td>
<td>🟢</td>
<td></td>
<td></td>
<td></td>
<td>18:02</td>
<td></td>
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</tr>
<tr>
<td>Erinne N</td>
<td>1</td>
<td>🟢</td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td></td>
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<td>Josephine J</td>
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<tr>
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<td>18:18</td>
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<tr>
<td>Kylee P</td>
<td>K</td>
<td>🟢</td>
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<td></td>
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<tr>
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<td>1</td>
<td>🟢</td>
<td></td>
<td></td>
<td></td>
<td>36:10</td>
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<tr>
<td>Marianne I</td>
<td>1</td>
<td>🟢</td>
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<td></td>
<td></td>
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<tr>
<td>Mario E</td>
<td>1</td>
<td>🟢</td>
<td></td>
<td></td>
<td></td>
<td>23:44</td>
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<td>Michael B</td>
<td>1</td>
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<td></td>
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<tr>
<td>Ramona G</td>
<td>1</td>
<td>🟢</td>
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<td></td>
<td></td>
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<tr>
<td>Renee Q</td>
<td>1</td>
<td>🟢</td>
<td></td>
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<td>11:02</td>
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<tr>
<td>Rilee L</td>
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<td>🟢</td>
<td></td>
<td></td>
<td></td>
<td>13:18</td>
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<tr>
<td>Roberta A</td>
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<tr>
<td>Sakurah P</td>
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<tr>
<td>Solomon O</td>
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<td>🟢</td>
<td></td>
<td></td>
<td></td>
<td>09:57</td>
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<td>Weekly Details</td>
</tr>
</tbody>
</table>
## Strong Support for Differentiation

### Concept: Multiplication: Double & Halve

Students use known basic facts and double one factor and halve the other to determine the product of a more challenging problem.

<table>
<thead>
<tr>
<th># Completed with Proficiency</th>
<th># In Progress</th>
<th># Not Started</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 students</td>
<td>10 students</td>
<td>9 students</td>
</tr>
<tr>
<td>John P (about 1 month ago)</td>
<td>Avaneesh S (71%)</td>
<td>Anthony P</td>
</tr>
<tr>
<td>Jacob C (about 1 month ago)</td>
<td>Charles K (71%)</td>
<td>Brittany B</td>
</tr>
<tr>
<td>Rebecah D (about 1 month ago)</td>
<td>Emmanuel M (71%)</td>
<td>Christina P</td>
</tr>
<tr>
<td>Julian B (about 1 month ago)</td>
<td>Luke R (71%)</td>
<td>Emily C</td>
</tr>
<tr>
<td>Edgar H (about 1 month ago)</td>
<td>Alanna M (64%)</td>
<td>Karly H</td>
</tr>
<tr>
<td>Pedro S (2 months ago)</td>
<td>Domenic G (64%)</td>
<td>Leah P</td>
</tr>
<tr>
<td>Daniel C (3 months ago)</td>
<td>Daniel S (57%)</td>
<td>Michael D</td>
</tr>
<tr>
<td></td>
<td>Dominique S (28%)</td>
<td>Samantha S</td>
</tr>
<tr>
<td></td>
<td>Suna C (28%)</td>
<td>Vanessa C</td>
</tr>
<tr>
<td></td>
<td>Caitlin S (21%)</td>
<td></td>
</tr>
</tbody>
</table>
For more information visit

www.dreambox.com
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Blended Learning Strategies for Common-Core Math

Required Reading from *Education Week*:

**Educators Craft Own Math E-Books for Common Core**
Concerned about what they see as a dearth of instructional materials aligned with the [Common Core State Standards in math](https://www.corestandards.org/), several educators in Utah, with support from the state office of education, are taking matters into their own hands. They're in the early stages of developing a set of e-textbooks for high school math that will be freely available.

**Spotlight on Math and the Common Core**
School districts are tapping into online gaming, video instruction, and other blended learning techniques to teach math while also identifying the digital resources that pair with the goals of the Common Core State Standards. Our guests will review techniques and digital resources for math instruction that emphasizes the use of blended learning and meeting the new common-core requirements.
Road Maps to COMMON CORE Success

REGISTER TODAY!
March 21, 2013
Virtual Event
Streamed Live!