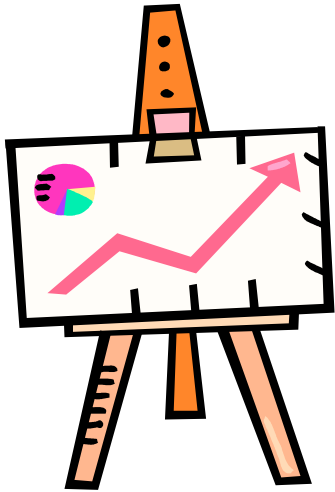


Formative Assessment: Progress Monitoring and Curriculum-Based Measurement



What is Progress Monitoring?

“Progress monitoring encompasses a system of brief assessments that are given frequently, at least monthly, to determine whether students are progressing through the curriculum in desired fashion and are likely to meet long-term goals” (Stecker, Fuchs, & Fuchs, 2008; p. 11)

- Why monitor progress?
 - Federal mandates require monitoring of academic progress for *all* students (NCLB)
 - IDEA 2004 requires assessment programming and evaluation of progress toward annual goals

What is Curriculum-Based Measurement (CBM)?

- One type of empirically-validated progress monitoring
 - Reliable and valid (Deno, 1992)
- “ ... a set of standardized procedures used to assess student performance on long-term goals in reading, spelling, written expression, and math curriculum” (Hosp & Hosp, 2003; p. 11)
- Used to facilitate instructional planning

Attributes of CBM

(Hosp, Hosp, & Howell, 2007)

- Aligned with the curriculum being taught
- Reliable and valid measures
- Criterion-referenced
- Standardized procedures
- Repeated measurement
 - Rate of progress and level of progress
- Clearly defined tasks completed within time intervals (i.e., performance sampling)
- Data-based decision rules
- Efficient

CBM can be used to . . .

- Monitor student learning outcomes
- Evaluate intervention effectiveness
- Guide instruction and cue instructional changes
- Measure AYP
- Monitor annual goals and objectives

L. S. Fuchs & Fuchs, 2004; L. S. Fuchs, Fuchs, Hamlett, & Stecker, 1990; Hosp & Hosp 2003; Yell & Stecker, 2003

Other Advantages of CBM

- Increased student awareness of progress (Davis, et al., 1995)
- More effective instruction (Fuchs et al., 1993)
- Higher student achievement (Fuchs et al., 1989)
- Increased student responsibility for learning
- Relationship between CBM and high stakes testing (Good et al., 2001)
- Better communication between parents and teachers (Marston et al., 1982)

CBM and Response to Intervention (RTI)

(Hosp et al., 2007)

RTI is a tiered approach to instruction and intervention. Data are used to make decisions about the effectiveness of instruction

- Tier 1: Evidenced-based instruction for all students
 - Use CBM for benchmarking (3 x year) or screening (monthly)
- Tier 2: Targeted instruction for students not making progress in Tier 1
 - Use CBM for progress monitoring (every other week)
- Tier 3: Intensive instruction for students not making progress at Tier 1 & Tier 2
 - Use CBM for progress monitoring (1 – 2 x week)

CBM and Response to Intervention (RTI)

(Hosp et al., 2007)

Using CBM data for different types of decisions

- **Screening/Benchmarking**
 - Purpose: To quickly determine which students are on track and which students are at-risk for academic failure
 - Question: “Which students are currently at risk?”
 - Considerations: Indicates there is a problem but not necessarily detailed information on how to correct it
- **Progress Monitoring**
 - Purpose: To determine if instruction is working
 - Question: “Is the student making sufficient progress towards goals?”
 - Consideration: The frequency of assessment should increase when students are identified as not making adequate progress

Types of CBM

(Hosp et al., 2007)

- Early Reading
- Reading
- Spelling
- Writing
- Math

See **Tip Sheets** for more detail on how to use CBM in each of these academic areas

Characteristics of Probes

- Represent the whole year's curriculum
- Each probe different but equivalent in terms of difficulty
- Administration and scoring must be standardized & consistent through out the year

Types of CBM

(Hosp et al., 2007)

- Early Reading
 - Administered individually
 - Letter-sound fluency (LSF): pronouncing letter sounds aloud for 1 minute from page with randomized letters
 - Word identification fluency (WIF): reading common words for 1 minute from a list of words
 - DIBELS
 - Initial sound fluency:
 - Phoneme segmentation fluency
 - Letter naming fluency
 - Nonsense word fluency

Types of CBM: Reading

(Hosp et al., 2007)

See the
**Reading
CBM Tip
Sheet** for
more detail

- Administered individually
- Oral reading fluency: reading aloud from a passage for 1 minute
- Maze passage reading: silently reading a passage where words have been deleted- students identify the correct word to be inserted from a list of words options

Types of CBM: Spelling

(Hosp et al., 2007)

- Administered as group or individually
- Each probe has 12 (grades 1 & 2) or 17 (grades 3 & higher) words and is timed for 2 minutes
- Words represent the whole year's curriculum

See the **Spelling CBM Tip Sheet** for more detail

Spelling CBM can serve as an alternative to traditional weekly spelling test and can provide more information on student's maintenance of spelling skills (more than just basic memorization that occurs with traditional spelling tests)

Types of CBM: Writing

(Hosp et al., 2007)

- Administered as group or individually
- Teachers give brief story starter
 - For example: “My day was going bad until ...”
(Hosp et al., p. 86)
- Students write for 3 minutes

See the
**Writing CBM
Tip Sheet** for
more detail

Types of CBM: Math

(Hosp et al., 2007)

- Administered as group or individually
- Student complete a timed probe – times vary according to the task
- K – 1st Grade
 - Number Identification
 - Missing Number
 - Quantity Array
 - Quantity Discrimination
- 1st – 6th Grade
 - Computation
 - Concepts & Application

See the
**Math CBM
Tip Sheet** for
more detail

CBM Steps

Adapted from Hosp et al., 2007

Step 1: Determine CBM task for progress monitoring

Step 2: Identify level of material

Step 3: Administer and score

Step 4: Graph scores

Step 5: Set ambitious goals

Step 6: Apply data decision rules

See **CBM Tip Sheets** for more detail on how to use CBM in each of these academic areas

Scoring CBM

- Early Reading
 - LSF: letter sounds correct (LSC)
 - WIF: words identified correctly (WIC)
- Reading
 - ORF: words read correctly (WRC)
 - Maze: words correctly restored (WCR)
- Spelling
 - Correct letter sequences (CLS)
 - or Words spelled correctly (WSC)
- Writing
 - Total words written (TWW)
 - or Total number of words spelled correctly (WSC)
 - or Total number of correct writing sequences (CWS)

Scoring CBM

- K – 1st Grade Math
 - Number Identification: total numbers correctly identified
 - Missing Number: total numbers correctly identified
 - Quantity Array: total numbers correctly identified
 - Quantity Discrimination: total numbers correctly identified
- 1st – 6th Grade Math
 - Computation: total number of digits correct
 - Concepts & Application: total number of blanks correct

Using Data to Make Decisions

Look at the last 3 data points. If the data points are:

- **Close** to the goal line (all on the line, or some above and some below)
 - Continue your instruction as implemented
- All **below** the goal line
 - Change your instruction
- All **above** the goal line
 - Change your goal for the student and maintain your instruction as implemented

Where to Find Reading Probes

- AIMSweb www.aimsweb.com
 - ORF and maze passages
 - Cost for materials; graphing and data management available
- Dynamic Indicators of Basic Early Literacy Skills (DIBELS)
<https://dibels.uoregon.edu>
 - Free ORF passages; data management available
- Edcheckup www.edcheckup.com
 - ORF and maze passages
 - Cost for materials; graphing and data management available
- Monitoring Basic Skills Progress (PRO-ED)
<http://www.proedinc.com/customer/default.aspx>
 - ORF and maze passages
 - Cost for materials; graphing and data management as well as computerized administration available

Where to Find Reading Probes

- Vanderbilt University

<http://kc.vanderbilt.edu/site/services/education/page.aspx?id=445>

- Cost for copying and postage

- Yearly Progress Pro (McGraw-Hill)

www.mhdigitallearning.com

- Maze passages available

- Cost for materials; graphing and data management as well as computerized administration available

- Also see <http://rti4success.org/progressMonitoringTools>

Where to Find Math Probes

- AIMSweb

www.aimsweb.com

- Monitoring Basic Skills Progress (PRO-ED)

<http://www.proedinc.com/customer/productView.aspx?ID=1431>

- Vanderbilt University

<http://kc.vanderbilt.edu/site/services/education/page.aspx?id=445>

- Yearly Progress Pro (McGraw-Hill)

www.mhdigitalllearning.com

Creating Your Own Math Probes

- www.aplusmath.col
- <http://themathworksheetsite.com/>
- <http://www.superkids.com/aweb/tools/math/>
- [http://www.interventioncentral.org/
index.php/cbm-warehouse](http://www.interventioncentral.org/index.php/cbm-warehouse)

Where to Find Spelling Probes

Premade Spelling CBM Probe Sheets

- Many teachers design their own spelling CBM lists, but AIMSweb, with Pearson Publishing, has compiled graded standard spelling word lists from the most frequently occurring words from 7 commonly used spelling series and reading word lists
- www.aimsweb.com
- Cost for materials; graphing and data management available

Where to Find Writing Probes

- **Premade Writing CBM Story Starters**
- www.aimsweb.com
- Cost for materials; graphing and data management available

Also see Hosp et al., 2007

IRIS Center Resources: Modules

**Classroom Assessment (Part 1): An Introduction to
Monitoring Academic Achievement in the Classroom**

<http://iris.peabody.vanderbilt.edu/gpm/chalcycle.htm>

**Classroom Assessment (Part 2): Evaluating Reading
Progress**

<http://iris.peabody.vanderbilt.edu/rpm/chalcycle.htm>

RTI: Mathematics

http://iris.peabody.vanderbilt.edu/rti_math/chalcycle.htm

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