Thinking about progress monitoring: Decisions and instructional change strategies

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Credits

- Minnesota Reading Corps
- U of O folks, Dr. Mark Shinn, Dr. Roland Good
- U of M folks, Dr. Matt Burns, Dr. Ted Christ
- Aimsweb www. aimsweb.com
- Dibels Data System dibels.uoregon.edu
- Graduate Students, Practicum Sites and School Districts I've worked with…
  - Moorhead, Fargo, West Fargo, St Croix River Ed District, Fergus Falls Sped Coop, …

Progress Monitoring & RTI

- Data-based decision making improves student outcomes

Happy Camper (Grade K)
Grade K : Phoneme Segmentation Fluency
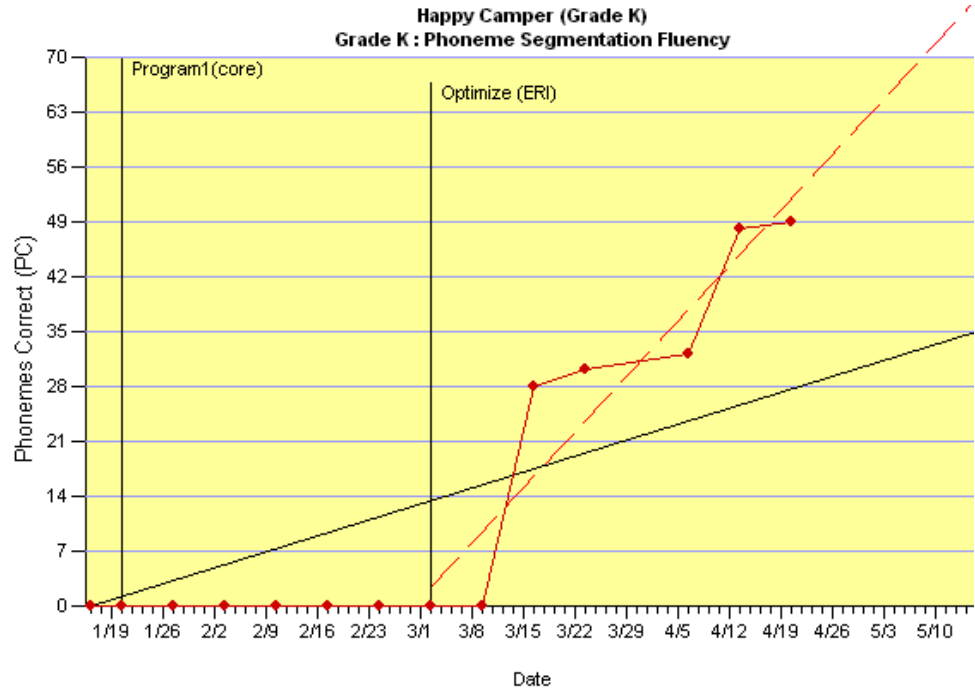
- The more "at risk" a student is (& the more intensive our interventions) the more important frequent progress monitoring becomes

"Good" Progress Monitoring

- Progress monitoring uses:
  - reliable, valid measures
  - tied to important educational outcomes
    - Need long term measurement, not just short term/mastery
  - sensitive to student growth
  - given frequently (1 to 4x per month)
    - My examples will be using General Outcome Measures of CBM or DIBELS in Reading
- Data are collected with fidelity

Review of Progress Monitoring Tools
Updated December 2007

Please note that the National Center on Student Progress Monitoring does not endorse or recommend the tools included in the chart. The Center provides this information to assist educators and practitioners in making informed decisions about scientifically based tools that best meet their individual needs.

Tools Area		Foundational Psychometric Standards		Progress Monitoring Standards				
		Reliability	Validity	Alternate Forms	Sensitive to Student Improvement	AYP Benchmarks	Improving Student Learning or Teacher Planning	Rates of Improvement Specified
Accelerated Math and Reader	*Math	•	•	•	•	•	•	•
	Reading	○	•	•	•	•	•	•
AIMSweb	iEarly Literacy	•	•	•	•	•	•	•
	Early Numeracy	•	•	•	•	•	○	•
	Math	•	•	•	○	•	○	•
	Maze	•	•	•	•	•	•	•
	Reading	•	•	•	•	•	•	•
	Spelling	•	•	○	•	•	•	•
	Written Expression	•	○	•	•	•	•	•
Dynamic Indicators of Basic Early Literacy Skills (DIBELS)	Initial Sound Fluency	•	•	•	•	•	○	•
	Nonsense Word Fluency	•	•	•	•	•	•	•
	*Oral Reading Fluency	•	•	•	•	•	•	•
	Phonemic Segmentation Fluency	•	•	•	•	•	•	•

Most Tools that Meet Standards are Members of the Curriculum-Based Measurement (CBM) "Family"

www.studentprogress.org
click on "Tools"

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Short Term (Mastery) and Long Term Progress Monitoring

**Short Term
Mastery Monitoring**
Test subskill mastery
and individual lesson effectiveness
Ex: QandA, worksheets
Following directions
Unit tests, "hot" reads
Accuracy, Skills "checks"
CBE, cba

**Long Term
General Outcome Measures**
Test retention,
generalization and progress
toward overall
general outcome (reading)
Ex: CBM, DIBELS

Both Mastery Monitoring and Long Term Progress Monitoring are Important

- Sometimes mastering subskills doesn't generalize to the general outcome or students don't retain the information over time
  - For example:
    - Melissa is very good at decoding letters and reading individual words, but is not generalizing these skills to reading text with automaticity and comprehension.
    - Adam was really good at using his comprehension strategies and using those when they were working on these skills in class (showed mastery), but when they moved on to another unit he quit using the strategies

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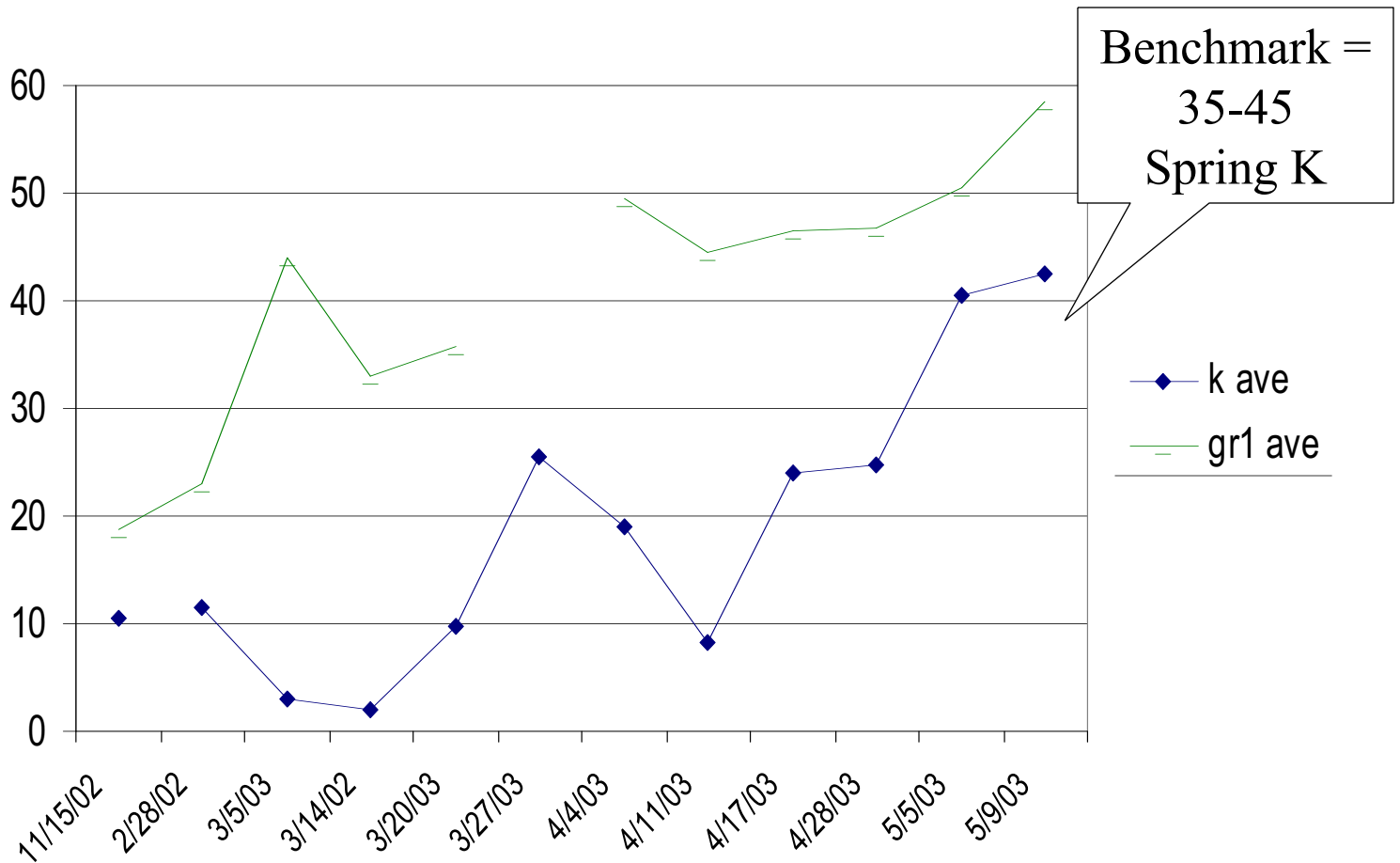- Data are collected with fidelity

How often?

Informally we collect progress monitoring data all the time…

On standardized general outcome measures

Oral reading fluency

– Weekly

– Median of 3 passages every 3 weeks

- Jenkins, Graff & Miglioretti (2009) Estimated Reading Growth using Intermittent CBM Progress Monitoring. *Exceptional Children, 75 (2),* 151-163

On other measures? NWF? Maze? IGDIs?

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Why is Progress Monitoring Important?

We do NOT KNOW ahead of time whether an intervention will be successful for an individual student

Do they assume in the hospital that your heart is working just fine after your bypass surgery?   After all… the surgery works well for MOST patients…..

Individual Progress Data are CRITICAL:
Small Group Segmenting Progress (02-03)

Benchmark = 35-45 Spring K

k ave

gr1 ave

| | | | | | | | | | | | |
|11/15/02|2/28/02|3/5/03|3/14/02|3/20/03|3/27/03|4/4/03|4/11/03|4/17/03|4/28/03|5/5/03|5/9/03|

Segmenting – Individual Results from the Same Small Groups…
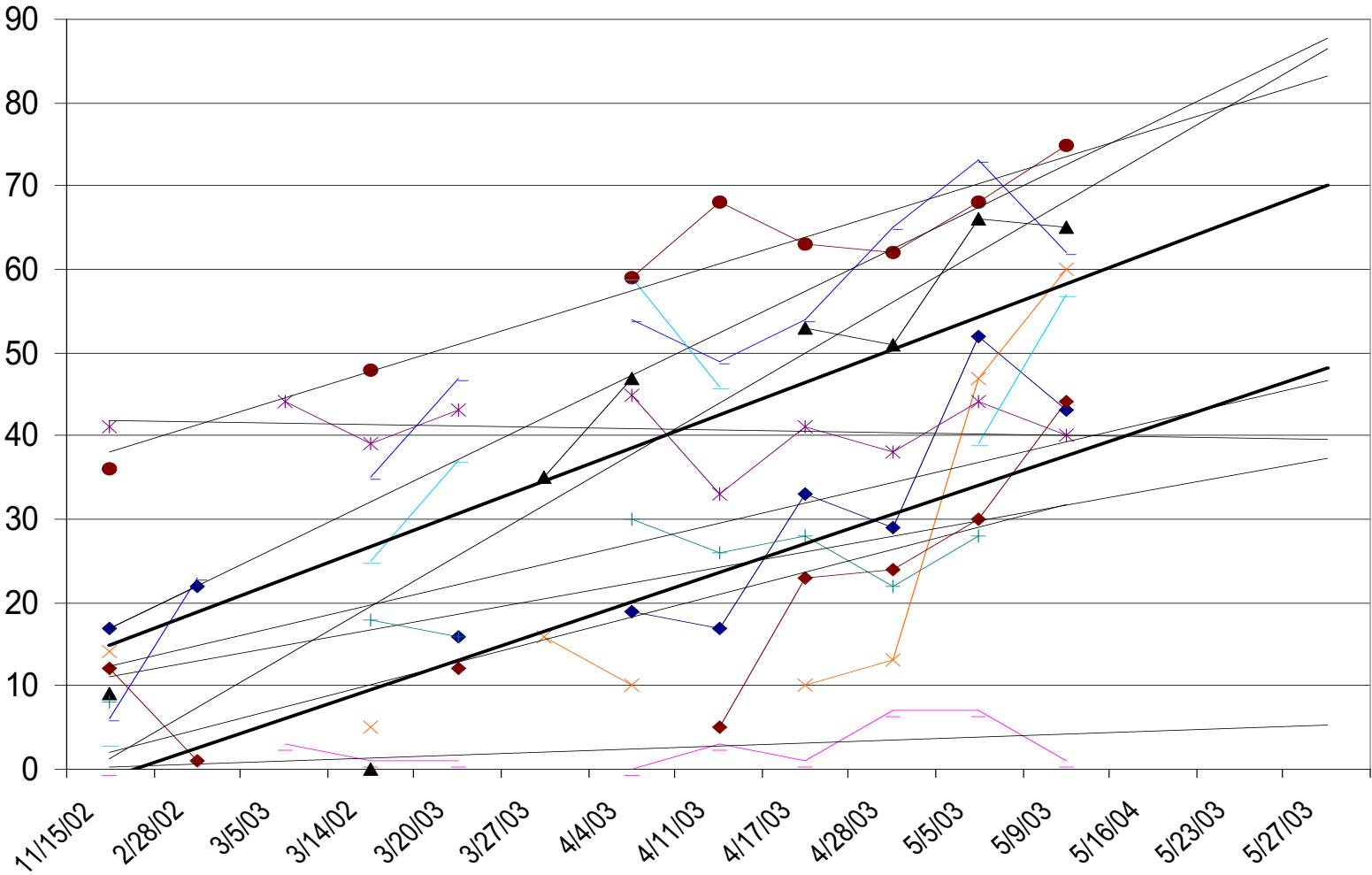
Survey Level Assessment (SLA)

- What is it?
  - Start with grade level (if possible) and, if student isn't at benchmark or other criteria, test down through successively "easier" grade levels of passages or probes
  - Several probes per grade level (over diff days if possible)
- Why do it?
  - Identify and begin to validate the extent of the skills problem
  - Find "instructional level" and "measurement level" (may be different than each other and different than "grade level")
  - Look at how behavior/skills change in easier material
- Note: can do this easiest in reading (and spelling), also can do it somewhat in math- hard in writing.

A comment on materials…

In READING

- When possible, students are monitored using grade level materials
- If this is not possible due to frustration or lack of sensitivity, "test down" and use the highest grade level of measures possible
  - Periodically "check" how the student is doing on grade-level materials and move into grade level materials as soon as possible

Gus' Reading "Survey Level" Data
(Gus is in Grade 4)
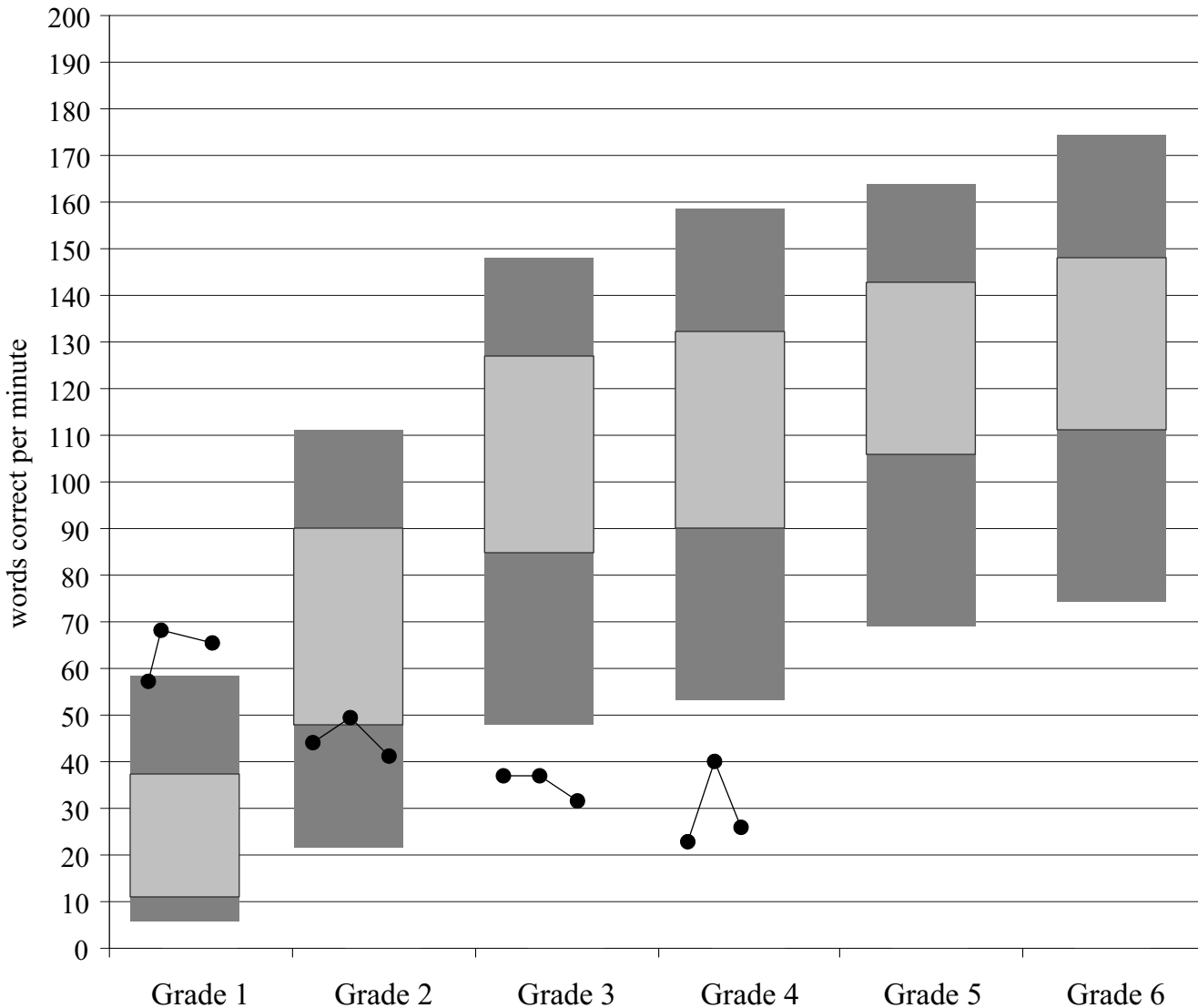
Note: error rates high (5-15) in Gr4, slightly lower (4-8) in Gr 3 and 2, and much lower in Gr 1 (1-4)

What Material Should we use…

- To "instruct" Gus?
- To monitor Gus' progress?

Systems for "Using" the data

- Culture of professionalism and using data to inform decisions

- Easy access to data and reports

- Time set aside to look at and "use" the data

- Professional Development in data collection and use
  - Professional development and support in learning new and varied interventions

Use Graphs!

Sadie Secondgrade (Grade 2)
Grade 2 : Reading - Standard Progress Monitor Passages

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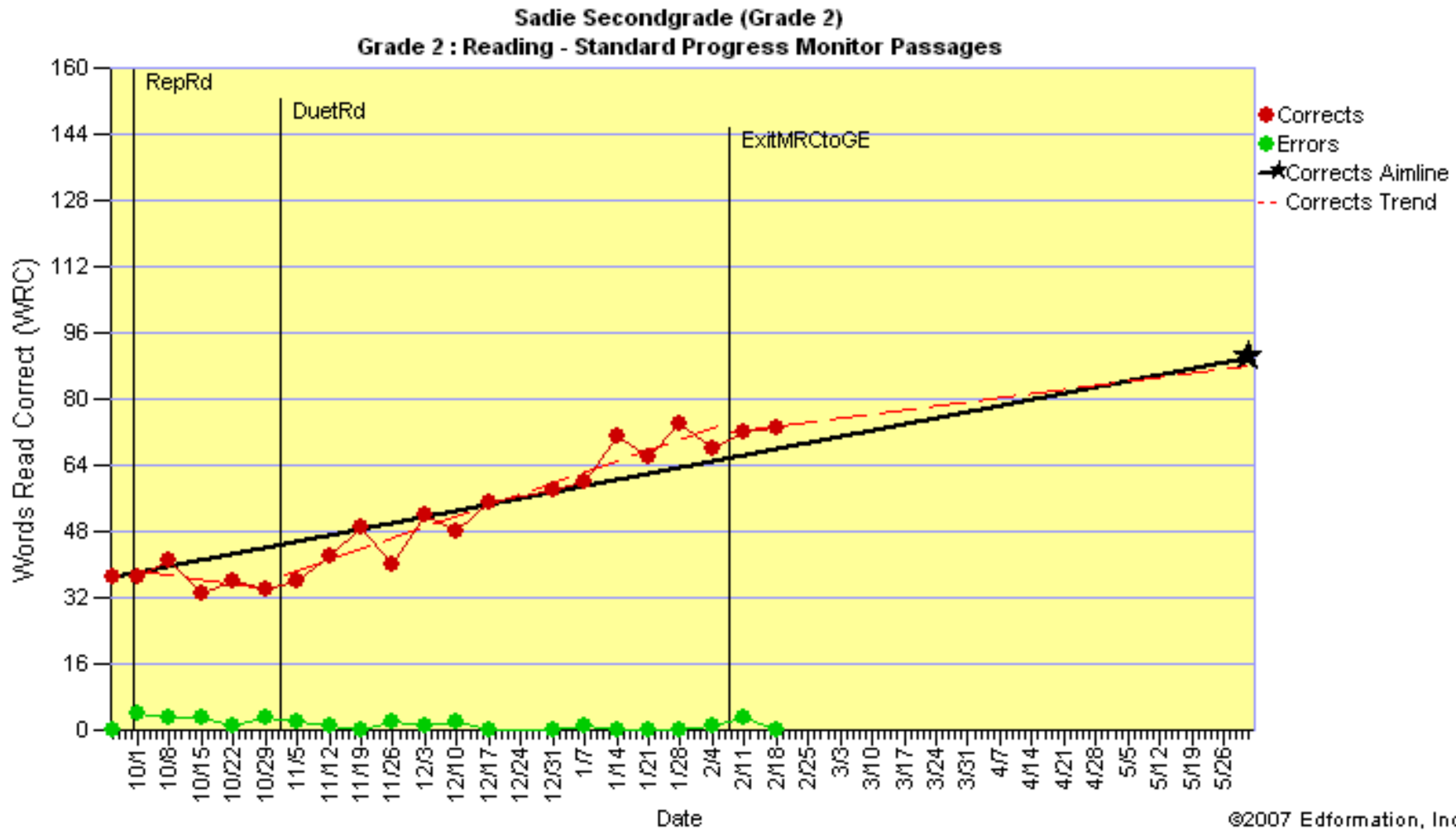
Looking at the Graphs

- Is there "go upness"????
- Is there ENOUGH "go upness"????

# Basic Visual Analysis: "Go Upness"?

Moira, Grade 3
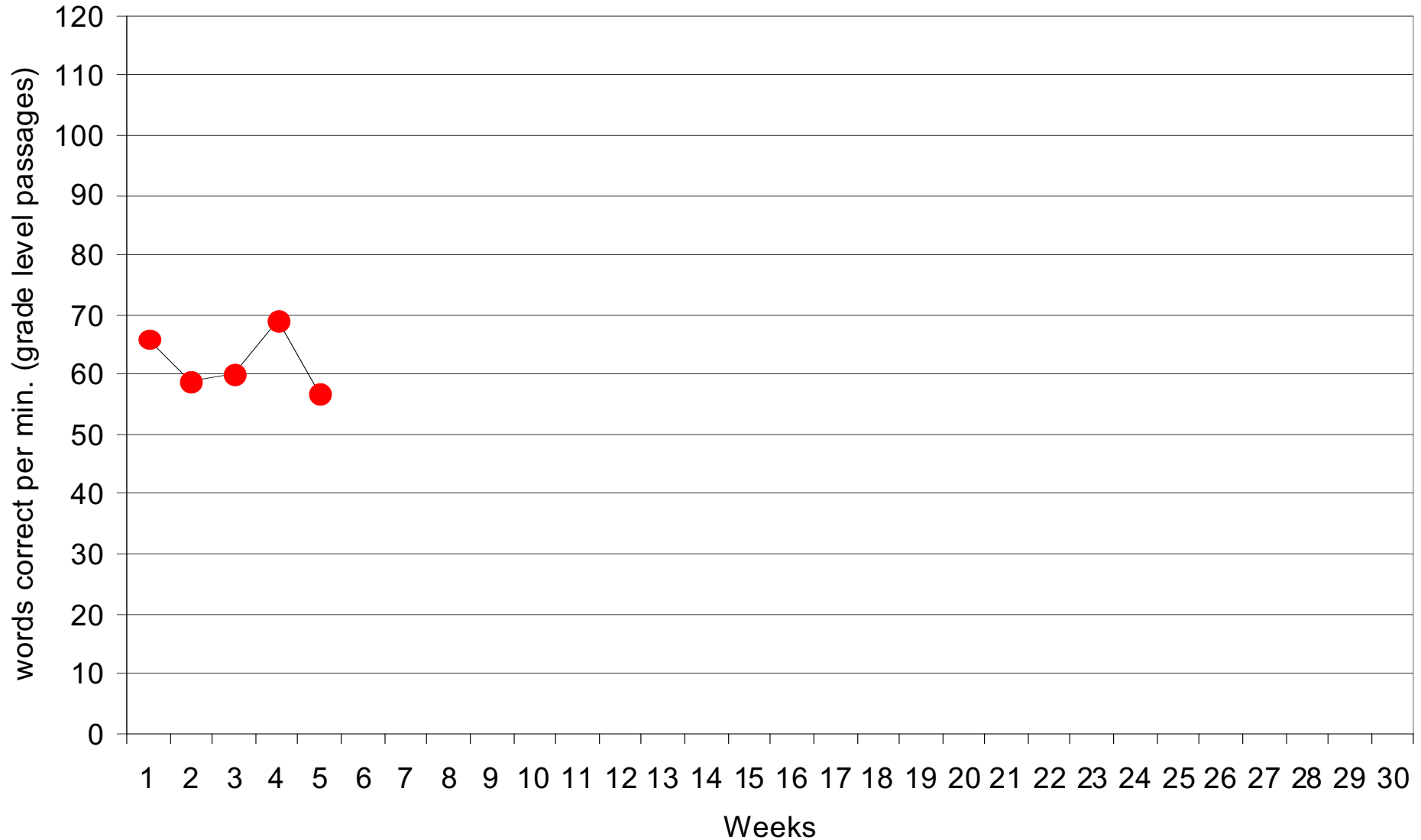
Aimline

- Shows general trajectory needed for student to reach his/her goal
  - Typically set so student gets back "on target" within a set amount of time (e.g., by the end of the year)
  - Tier 2- meet next benchmark or end of year benchmark
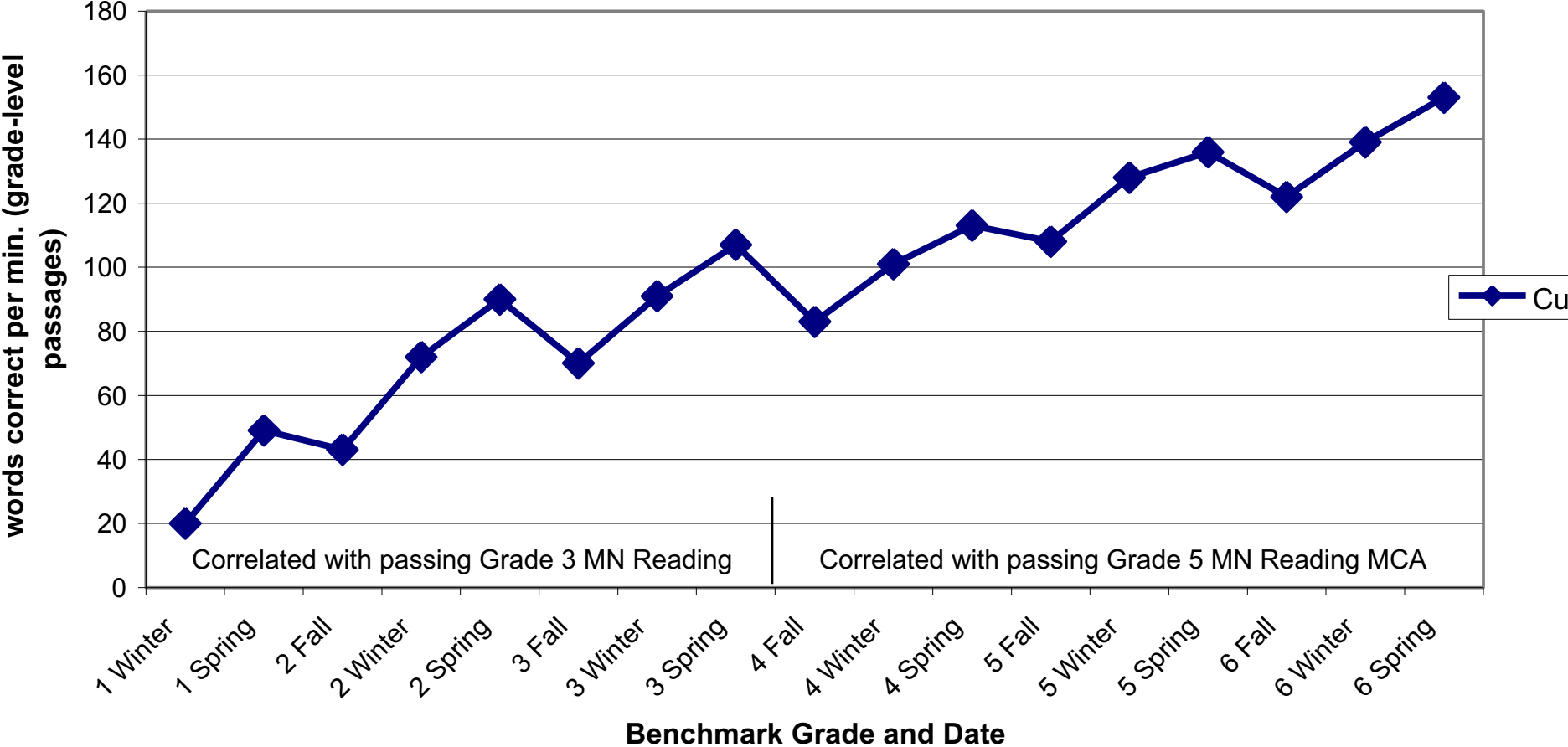 - Tier 3- depends… remember Gus?

Outcomes: DIBELS® Benchmark Goals
80% - 100% Chance of Getting to Next Goal

- Initial Sound Fluency:
  - **25** sounds per minute by **winter Kindergarten**
- Phoneme Segmentation Fluency:
  - **35** sounds per minute by **spring Kindergarten**
- Nonsense Word Fluency:
  - **50** sounds per minute *with at least 15 words recoded* by **winter First Grade**
- DIBELS® Oral Reading Fluency:
  - **40** words correct per minute by **spring First Grade**
  - **90** words correct per minute by **spring Second Grade**
  - **110** words correct per minute by **spring Third Grade**
  - **118** words correct per minute by **spring Fourth Grade**
  - **124** words correct per minute by **spring Fifth Grade**
  - **125** words correct per minute by s**pring Sixth Grade**
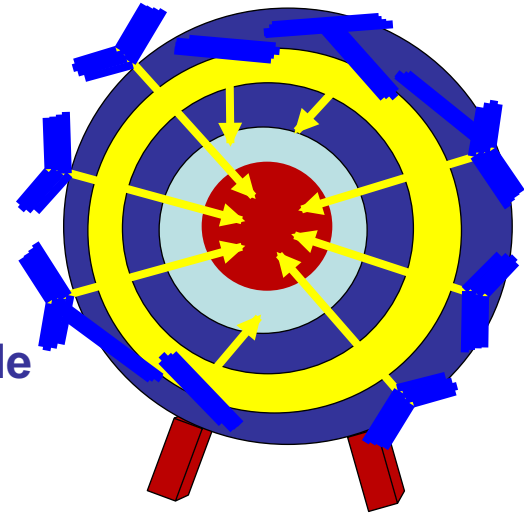
Can correlate your data with state tests….

**AIMSweb R-CBM Cut Scores correlated with
passing the MN Reading MCAs**

Correlated with passing Grade 3 MN Reading

Correlated with passing Grade 5 MN Reading MCA

words correct per min. (grade-level passages)

Benchmark Grade and Date

Minnesota Reading Corps Target Scores

based on SCRED Targets Tied to 80% likelihood of Passing MN MCA-II

Grade	Measure	Fall target	Winter target	Spring target
K	Letter sounds	8	16	36
1	Nonsense Word Fluency (NWF)	28	52	
1	Oral Reading Fluency (ORF)	Don't do ORF in Fall	22	49
2	Oral Read Fluency	43	72	90
3	Oral Read Fluency	70	91	107

Note: AIMSweb materials are used

Using an Aimline

Moira, Grade 3
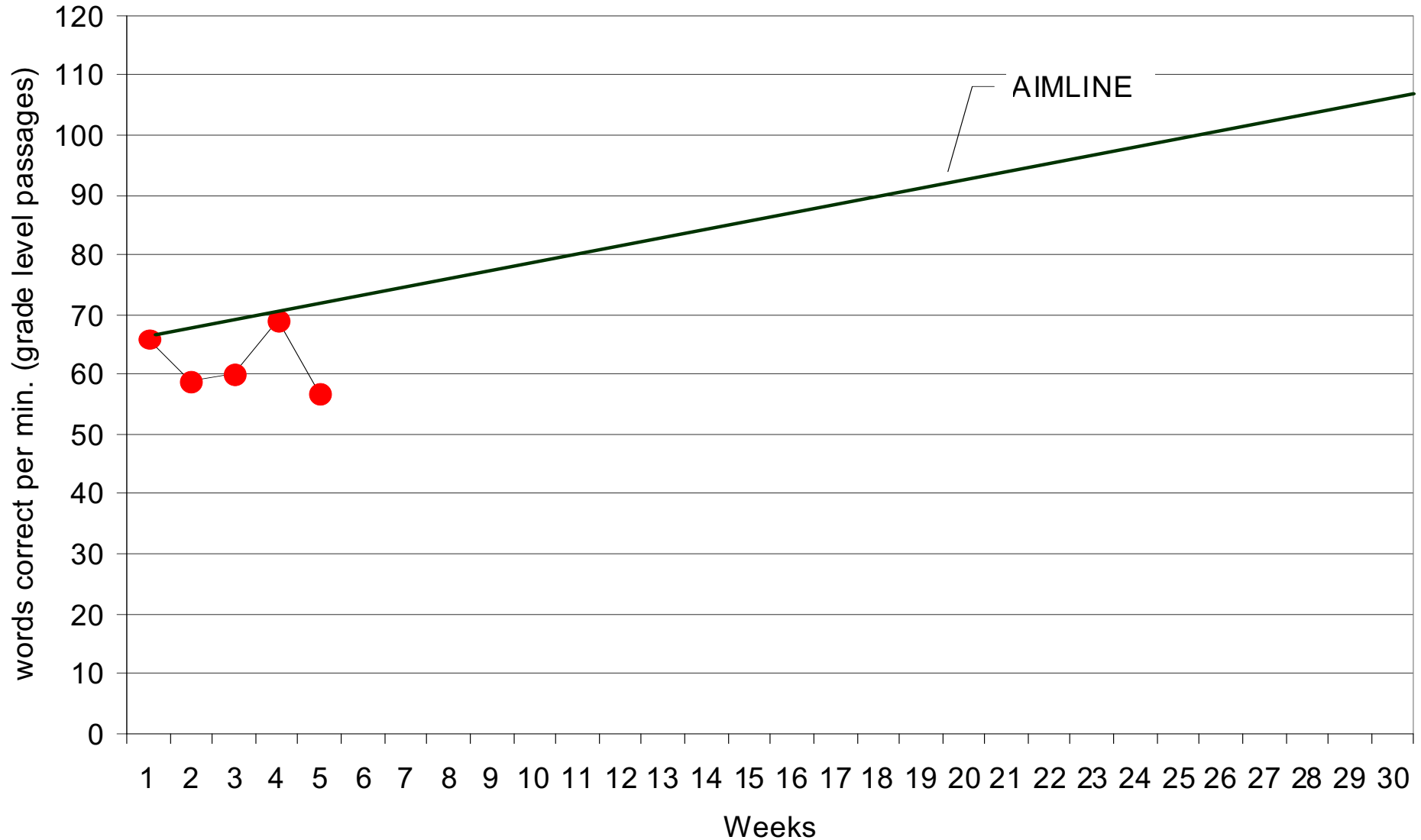
Data Decision Guidelines

- If the student has some data points above and some below the aimline (doing the "aimline hug"), keep doing what you are doing!

- If the student has 4 <u>consecutive</u> data points above the <u>aimline</u>, consider moving the student to less intervention (e.g., decreasing minutes, or moving from Tier 2 to Tier 1 or Tier 3 to Tier 2)
 - Also use other pieces of information
  - Continue to progress monitor

Data Decision Guidelines Cont'd

If the student has 4 <u>consecutive </u>data points <u>below</u> the <u>aimline</u>, ASK THE FOLLOWING QUESTIONS (and continue to progress monitor):

- – What does the "other" evidence available suggest about the student's progress?
  - Error rates? Behavior during the intervention?

- – What is the general "trend" of the data? Is the student likely to get where we want if this continues?
 - Use visual analysis and other evidence
  - Use "trendlines" and "aimlines"

Trendline

- Shows the general "trend" or trajectory of the student's data so far
  - Web-based Programs typically use an OLS regression line
    - Aimsweb, Dibels data system, Excel
  - Need approx. 7 to 9 data points
  - Trendlines on few data points or on highly variable data are NOT reliable!!!
    - Christ, T (2006). Short term estimates of growth using CBM ORF: Estimating Standard Error of Slope to construct confidence intervals. *School Psychology Review, 35(1)* 128-133

Moira, Grade 3
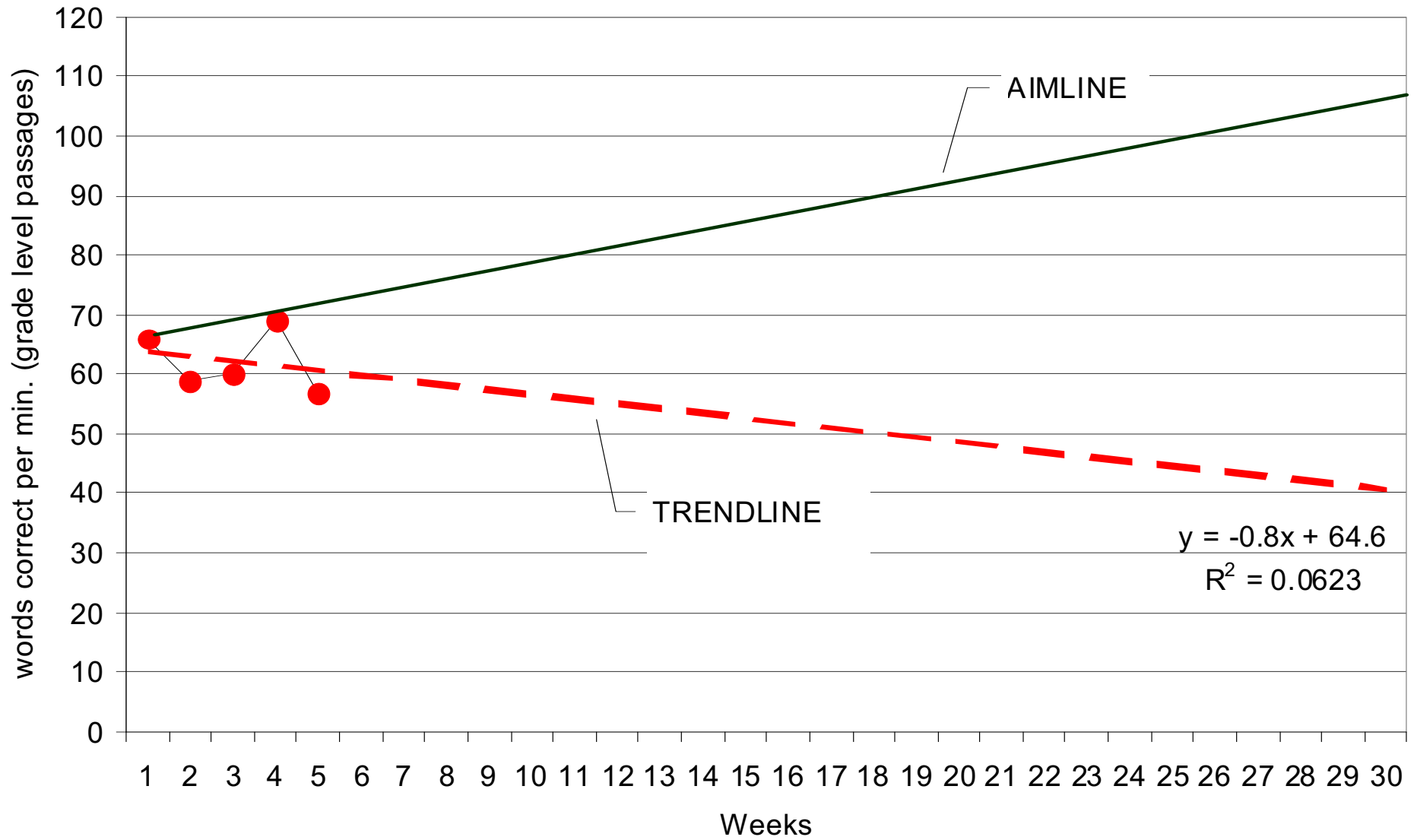
words correct per min. (grade level passages)

Weeks

AIMLINE

TRENDLINE

$y = -0.8x + 64.6$

$R^2 = 0.0623$

Washington School District - Jefferson Elementary School
Justin Boehne (Grade 3)
Grade 3 : Reading - Standard Progress Monitor Passages
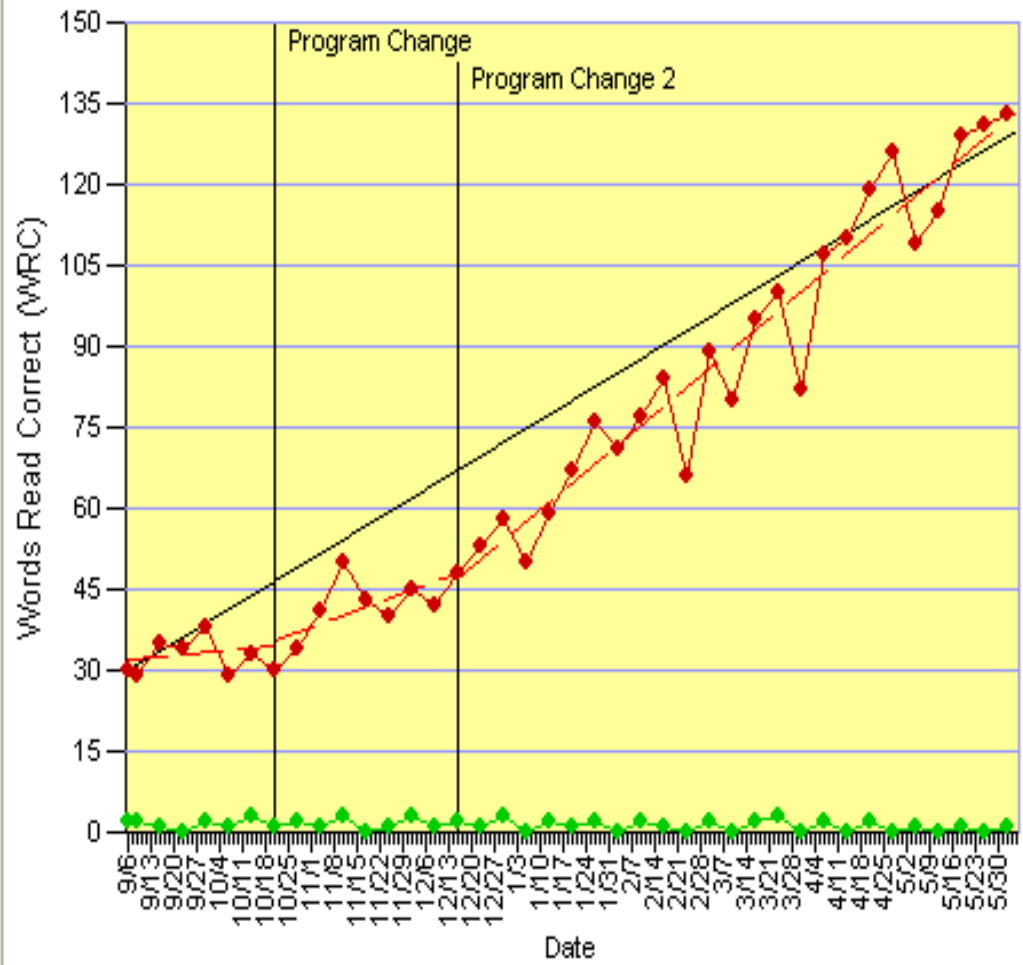
How much progress is "enough"?

- What is "adequate" progress?
  - Criterion referenced
    - will student meet goal? in reasonable amt of time
    - Growth is at or above "target" growth rate
  - Norm referenced
    - Growth is at or above growth of grade level peers
  - Individually referenced
    - Growth is better than before
  - "Intervention"/research referenced
    - Growth is similar to what was seen in research on this intervention (with similar population)

MRC Target Growth Rates 0708

	K	1		2	3
	Letter Sound Fluency	**Nonsense Word Fluency** (Fall - Winter)	**Oral Reading Fluency** (Winter – Spring)	**Oral Reading Fluency**	**Oral Reading Fluency**
Target Growth Rate	**1.15**	**1.11**	**1.67**	**1.31**	**1.08**

Remember to use your brain!
(and eyes and ears)

These are guidelines,
THINKING is REQUIRED…

If overall trend of progress is good but s/he happens to have 4 data points just barely below the aimline, you may decide to continue your intervention for a week and see what happens.

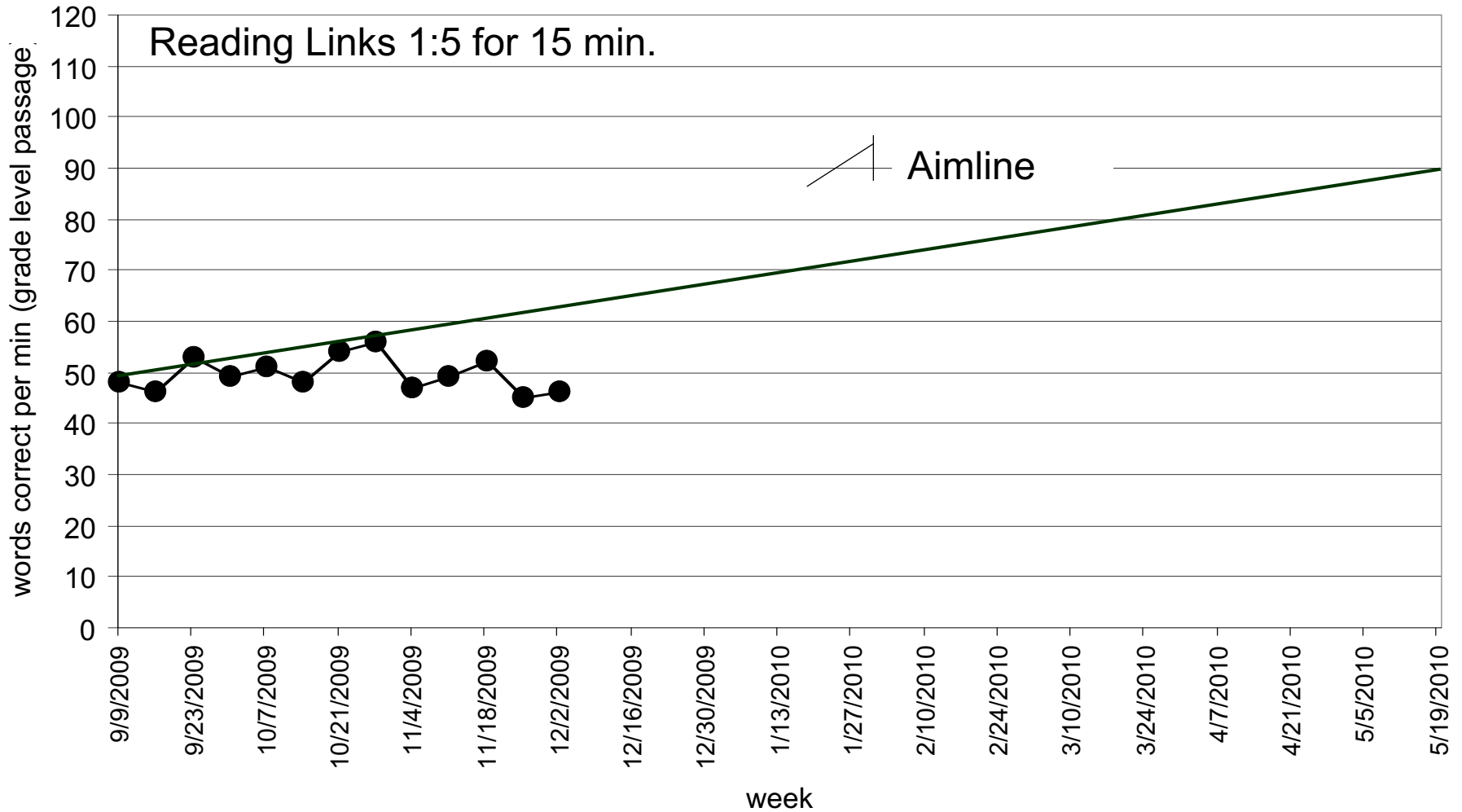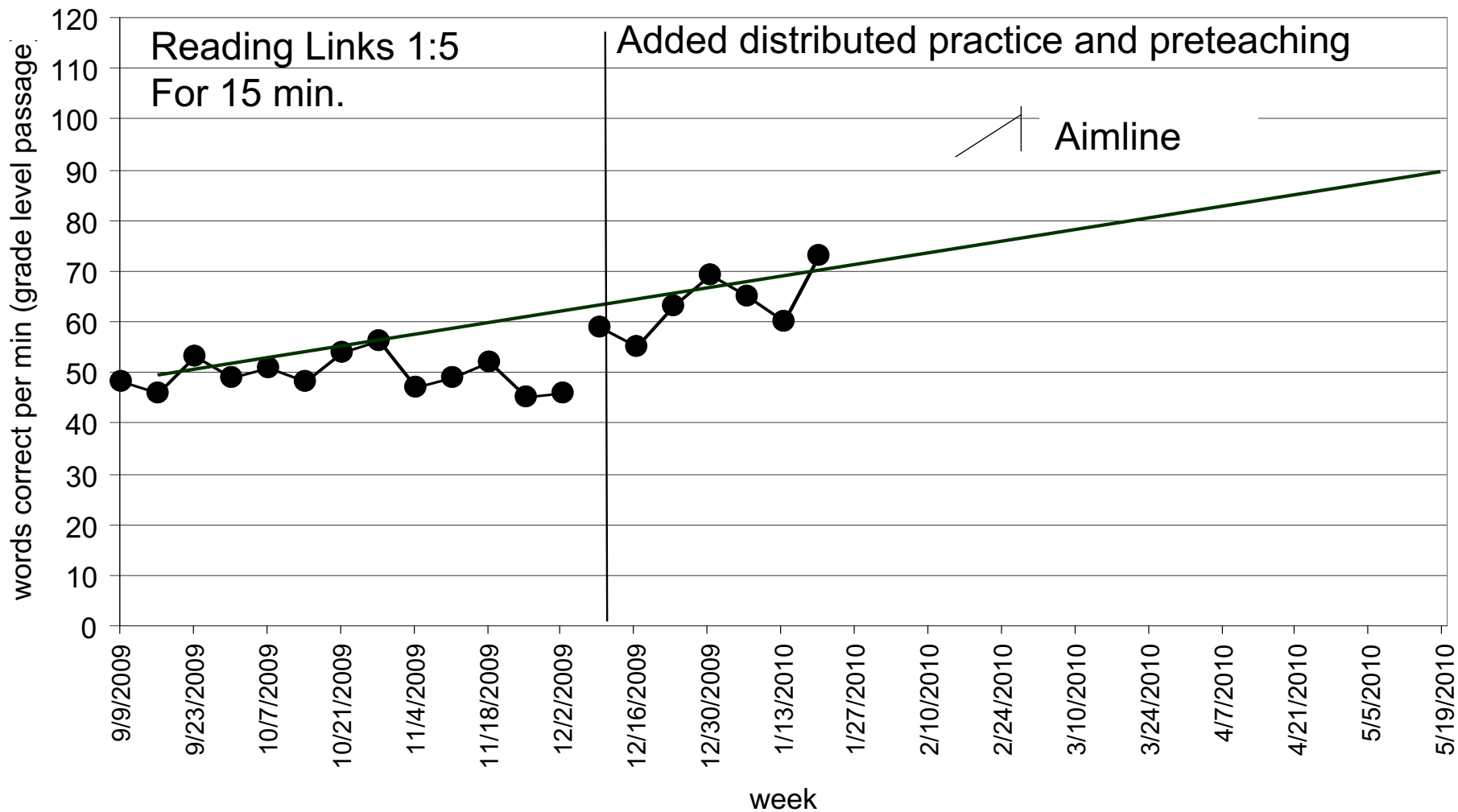Use Convergence of Data (teacher report, mastery monitoring, behavioral indicators)

Prefrontal Cortex
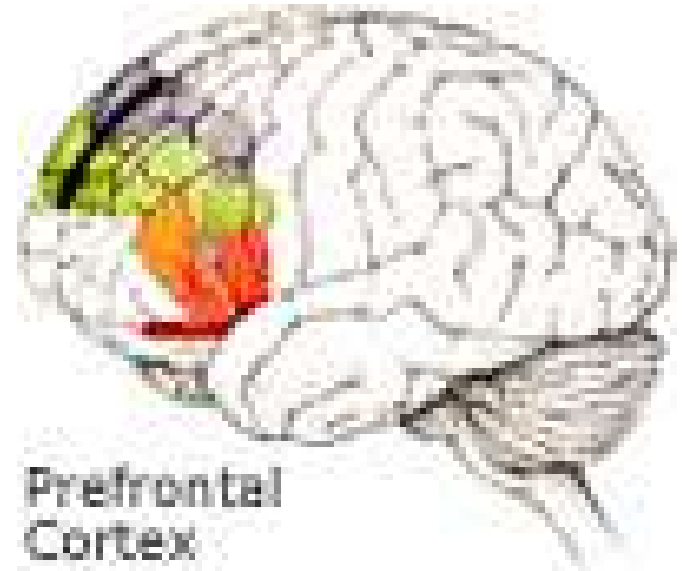
Practice Exercises:

- Is there go upness?

- Is there enough go upness?

- What else would you like to know?

- What would you do?
    - Exit to less intense service
    - Keep going and collect more data
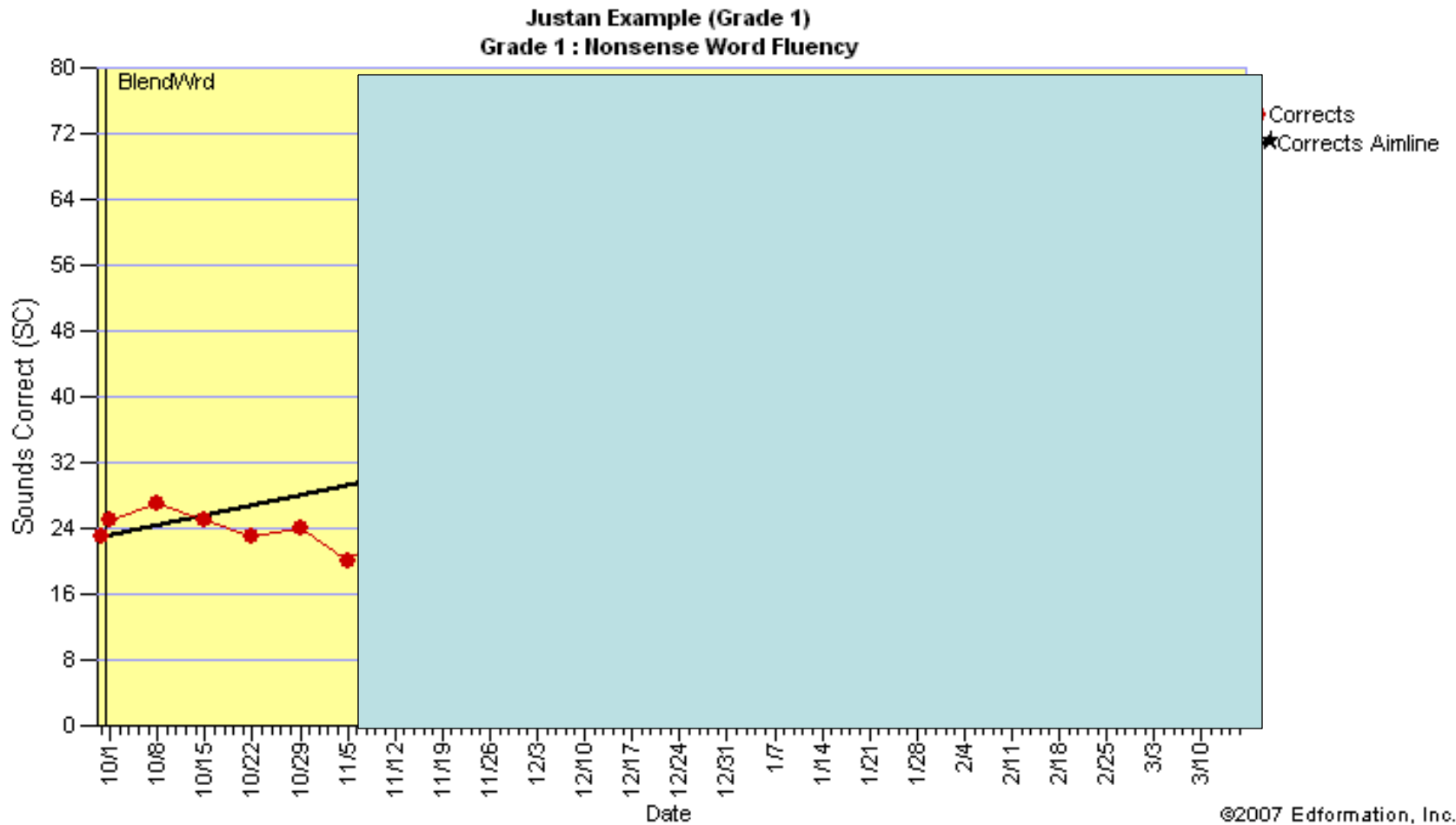   - Problem solve and change something
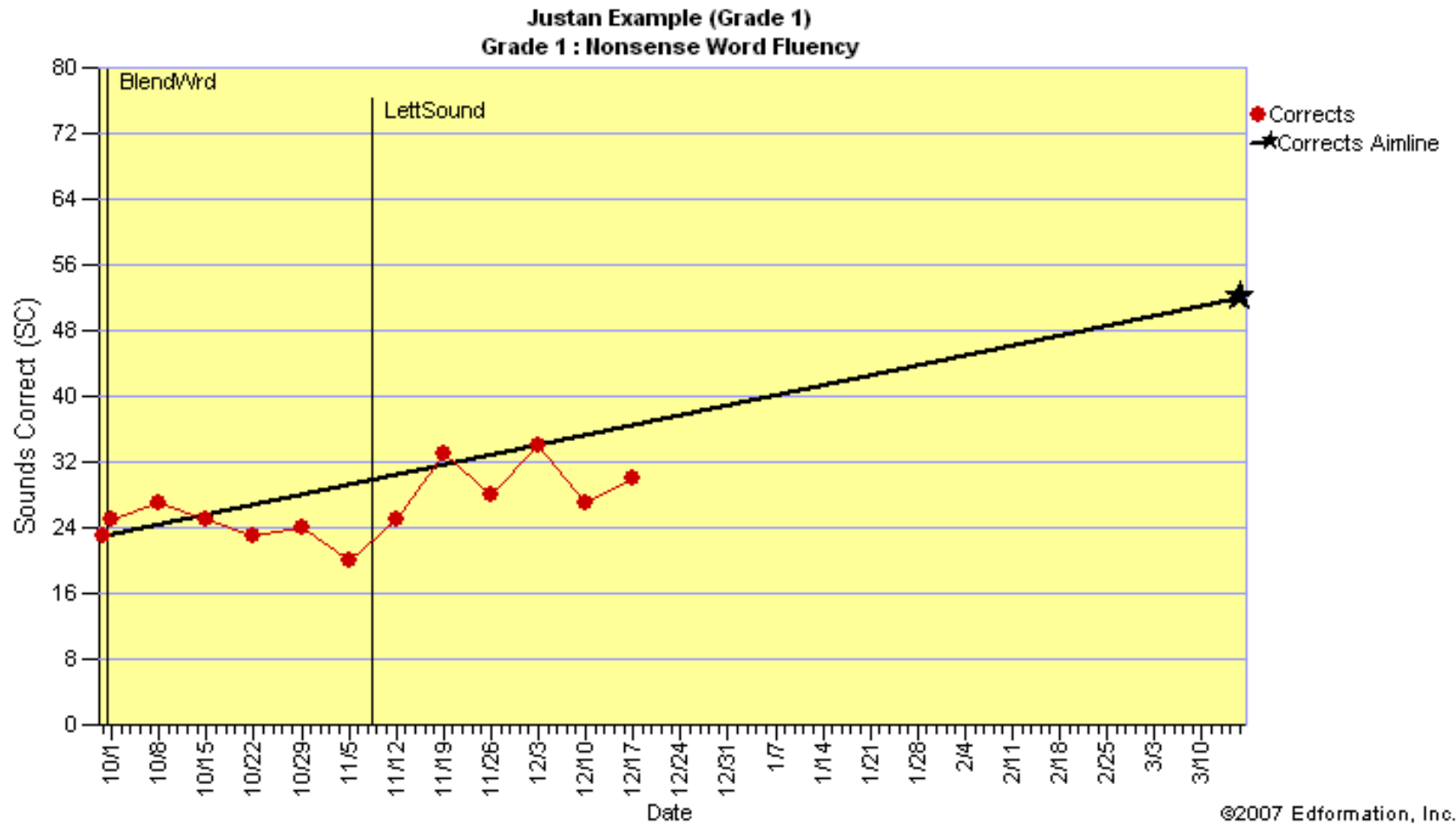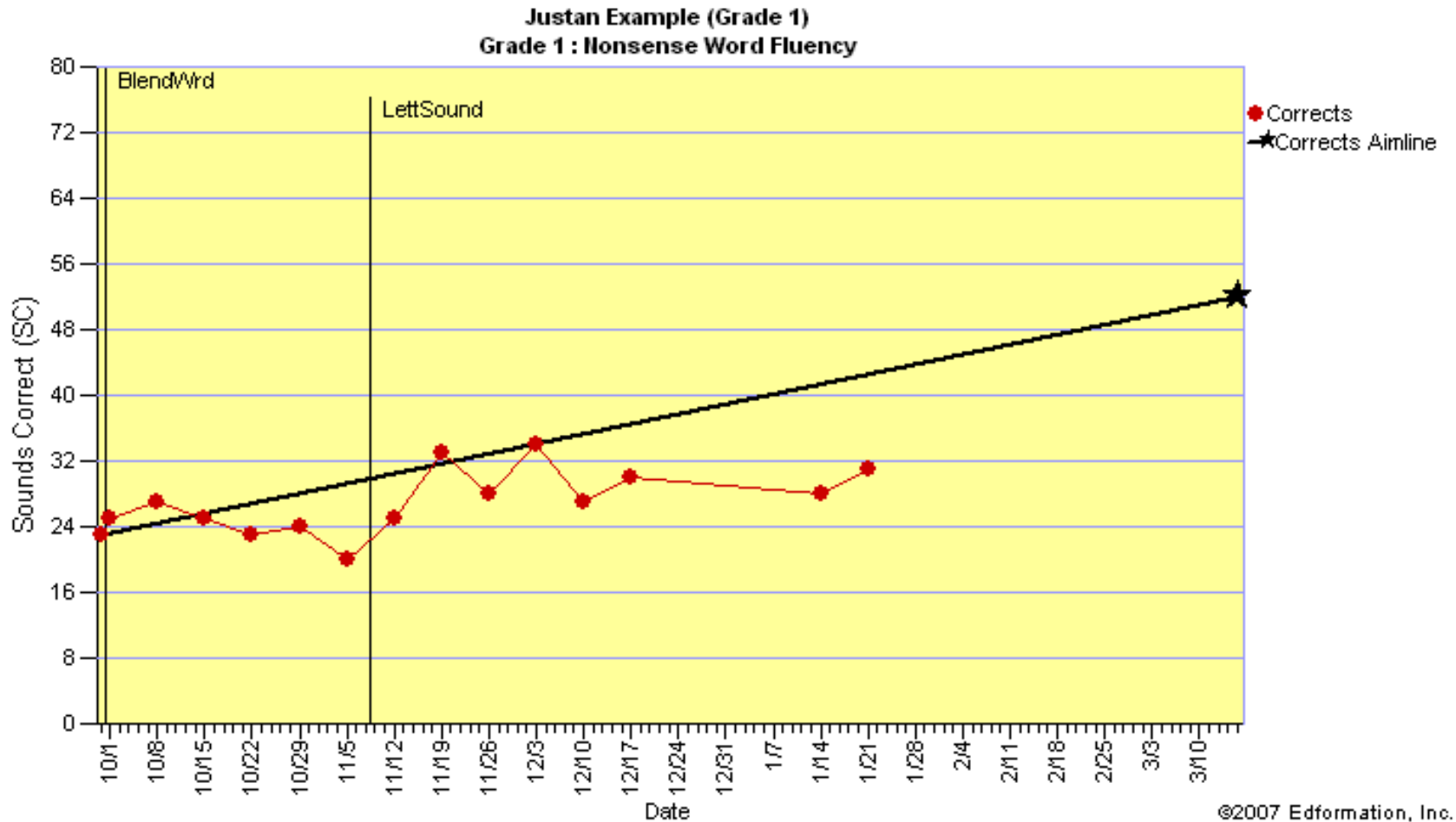
Finn Gr 2 ORF

Finnegan Grade 2

Finnegan Grade 2

Justan Gr 1 NWF

Justan Example (Grade 1)
Grade 1 : Nonsense Word Fluency

Corrects
Corrects Aimline

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And now?

Justan Example (Grade 1)
Grade 1 : Nonsense Word Fluency

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And now????

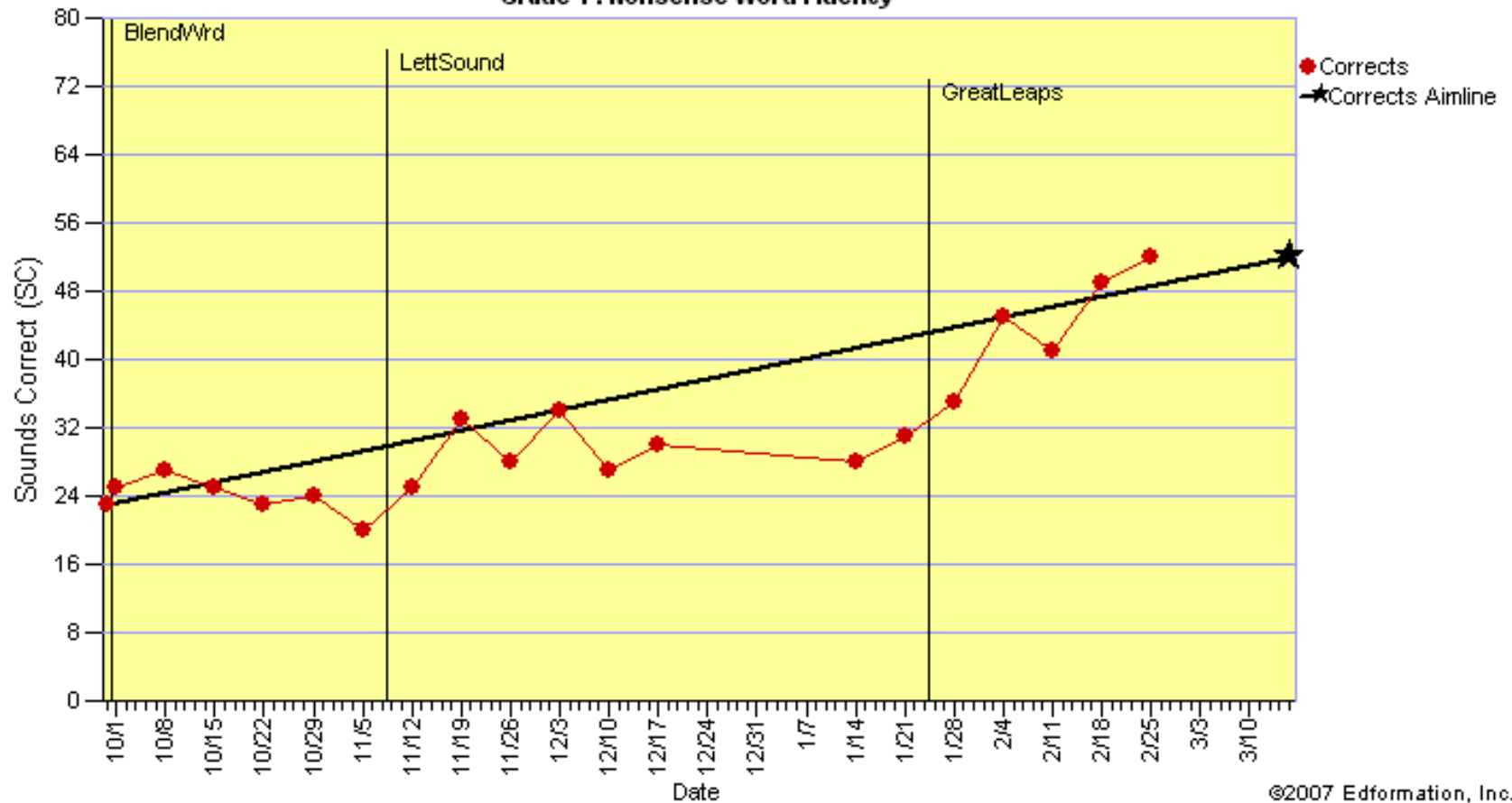**Justan Example (Grade 1)**
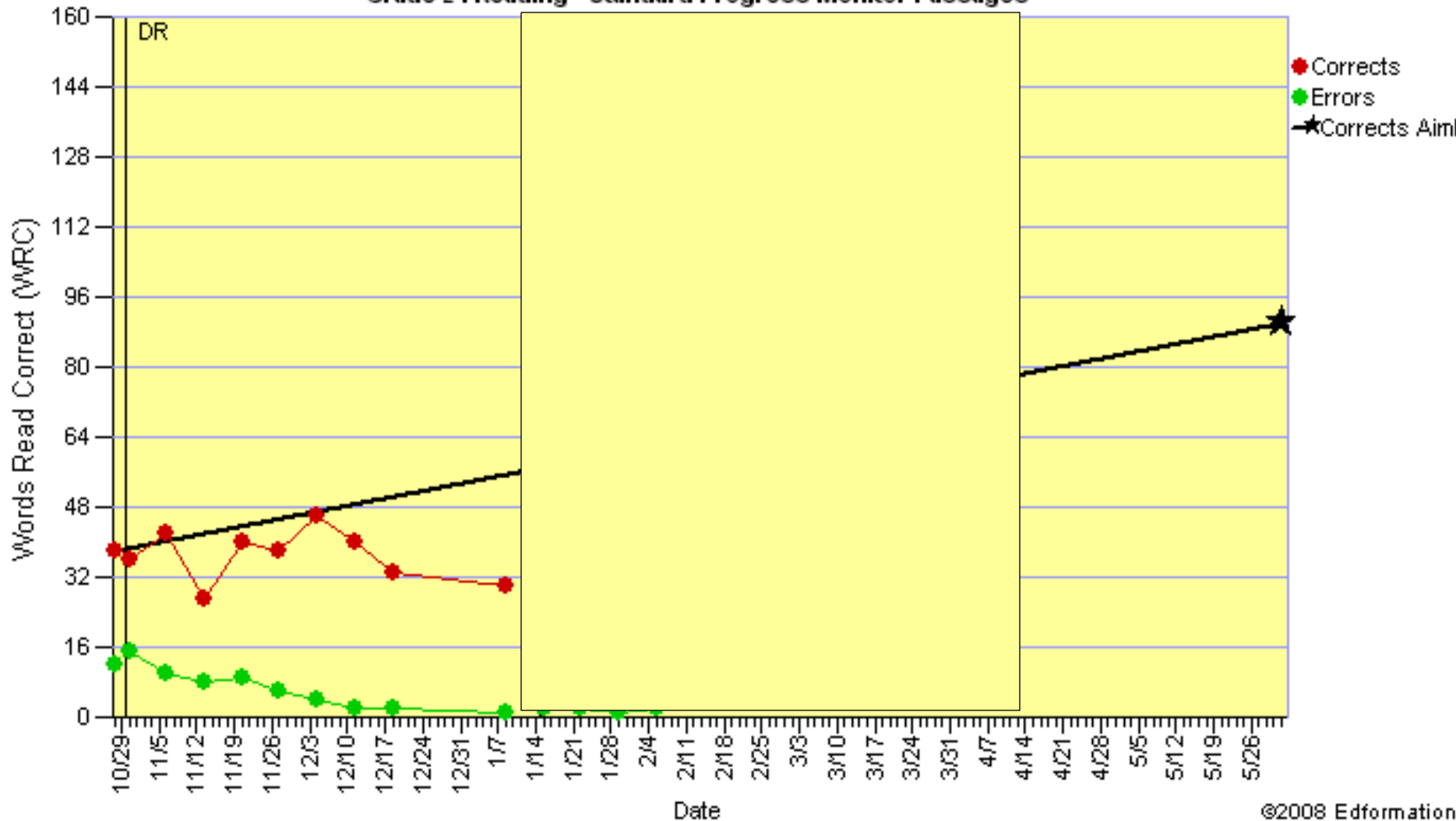**Grade 1 : Nonsense Word Fluency**

On track…

Justan Example (Grade 1)
Grade 1 : Nonsense Word Fluency

What decision would you make?

Grade 2 : Reading - Standard Progress Monitor Passages

- ● Corrects
- ● Errors
- ★ Corrects Aiml

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Grade 2 : Reading - Standard Progress Monitor Passages

Y-axis: Words Read Correct (WRC), scale from 0 to 160

X-axis: Date, from 10/29 to 5/26

Legend:
- Corrects (red)
- Errors (green)
- Corrects Aiml (black star line)

Markers: DR, RR

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Is there "enough" go upness…
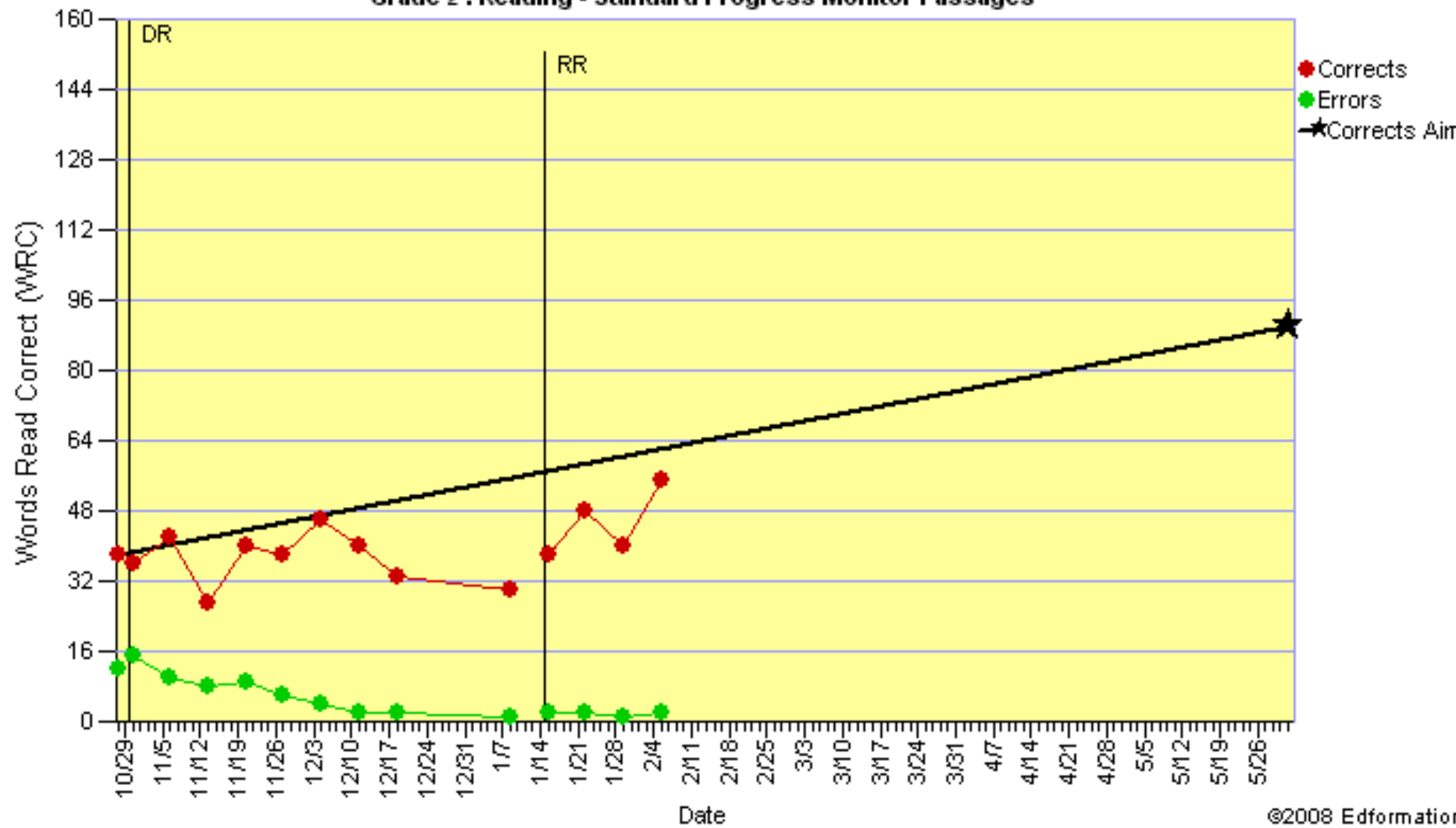
Washington School District - Jefferson Elementary School
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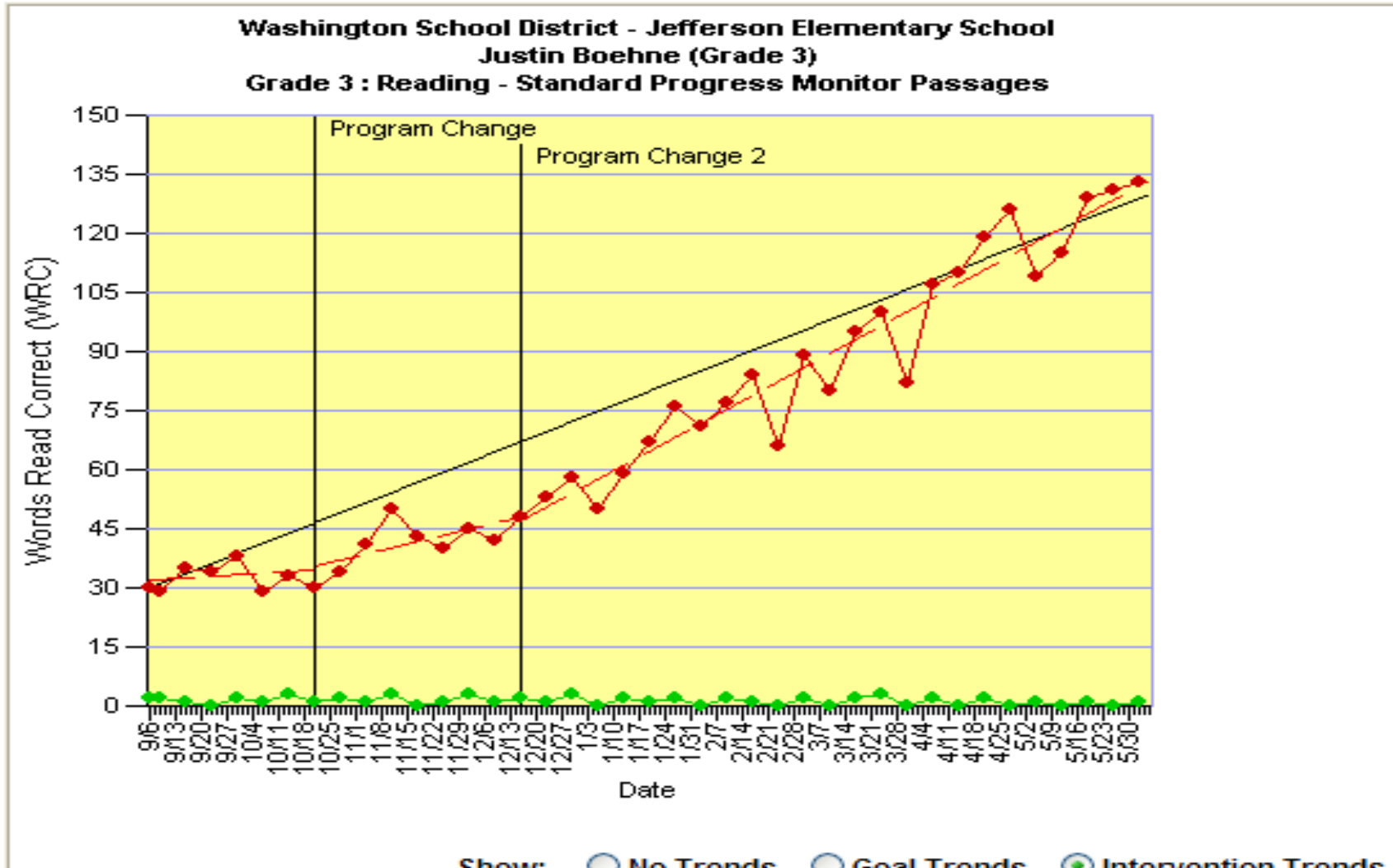
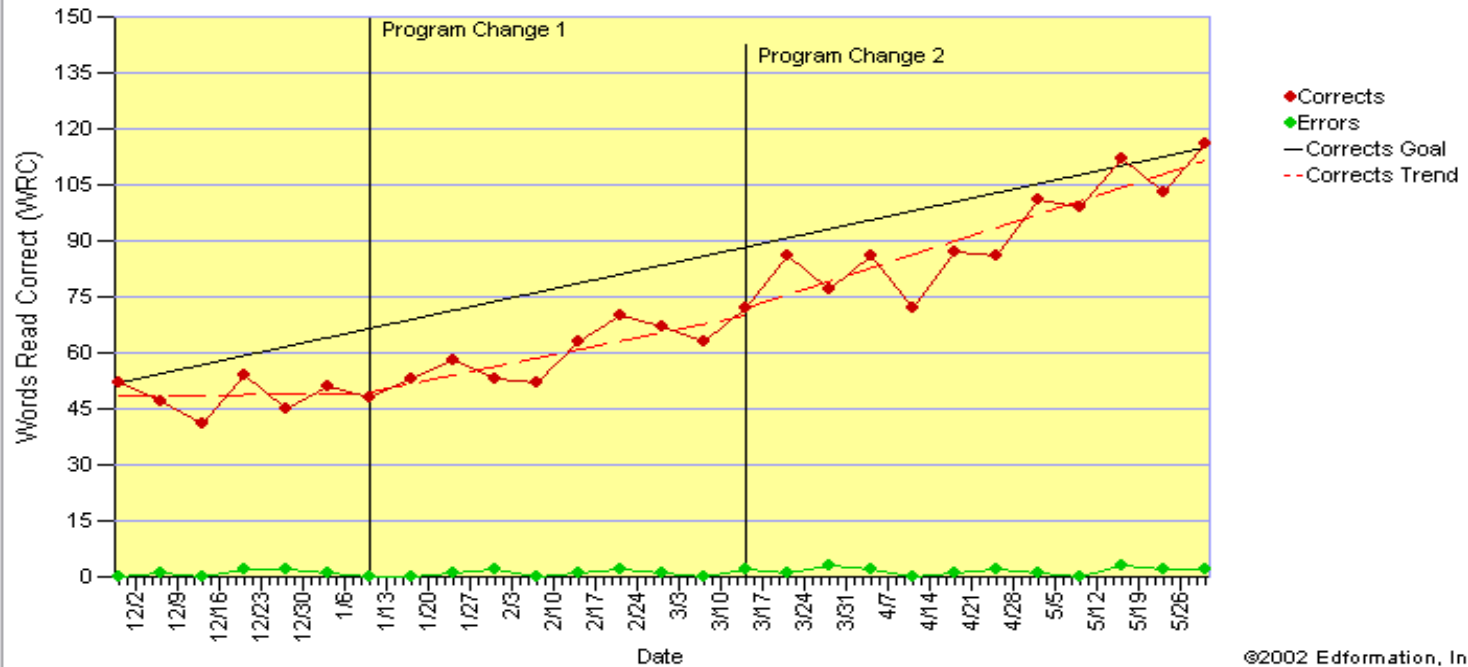# What happened here?

Progress Monitoring Improvement Report
from 09/06/2004 thru 06/03/2005

Enough go upness?

Progress Monitoring Improvement Report
from 11/28/2002 thru 05/29/2003

Hartford School District - Wilson Elementary
Melissa Smart (Grade 3)
**Grade 3 : Reading - Standard Progress Monitor Passages**

Program Change 1

Program Change 2

- ● Corrects
- ● Errors
- — Corrects Goal
- - - Corrects Trend

Words Read Correct (WRC)

150 — 135 — 120 — 105 — 90 — 75 — 60 — 45 — 30 — 15 — 0

Date

12/2 12/9 12/16 12/23 12/30 1/6 1/13 1/20 1/27 2/3 2/10 2/17 2/24 3/3 3/10 3/17 3/24 3/31 4/7 4/14 4/21 4/28 5/5 5/12 5/19 5/26

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Show: ○ No Trends ○ Goal Trends ◉ Note Trends
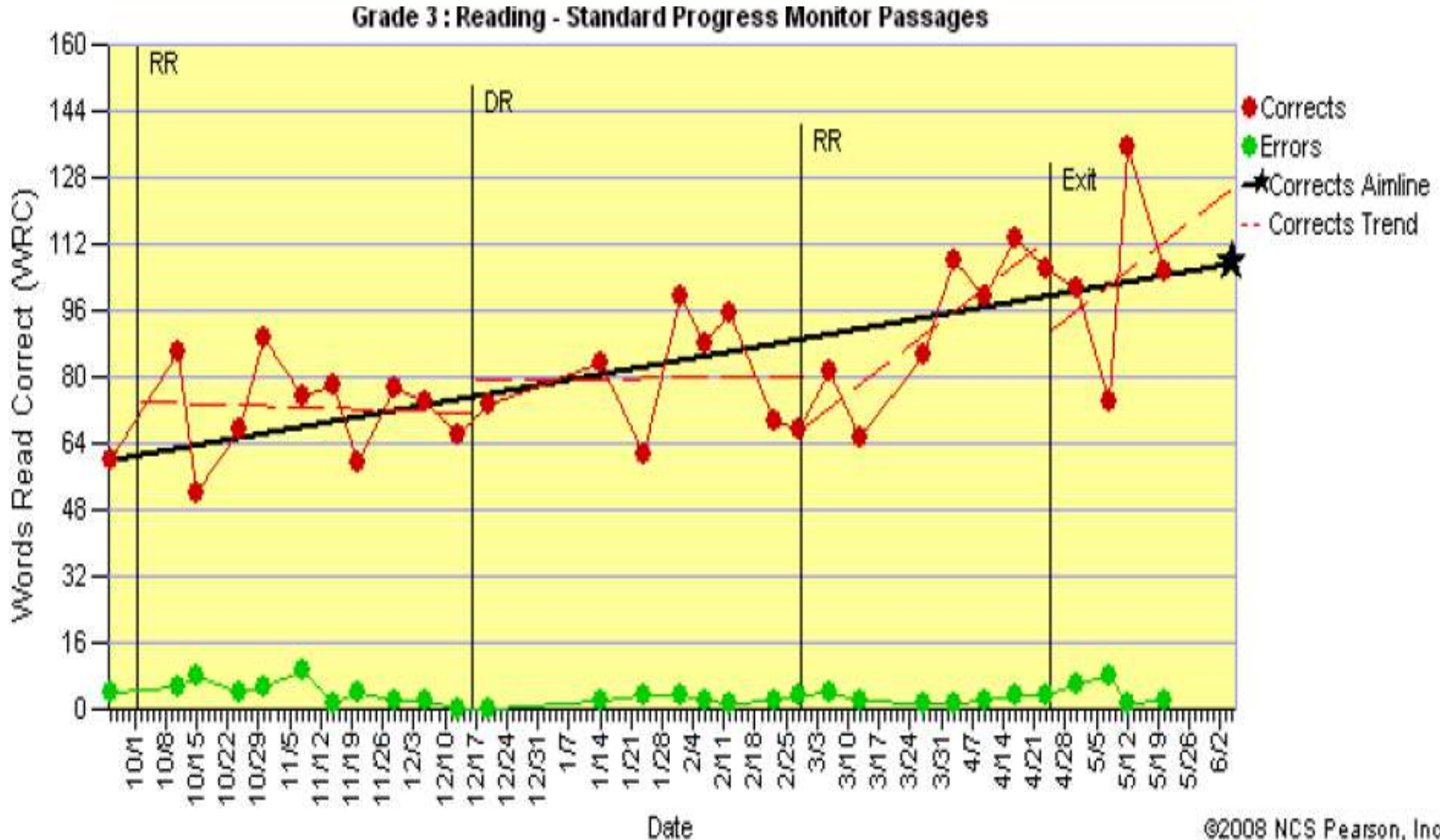☑ Goal ☑ Program Notes ☑ Errors

Goal Statement

In **26.0** weeks, Melissa Smart will achieve **115** Words Read Correct with **0** Errors from grade 3 Reading - Standard Progress

Can also make decisions about exiting to less intensive service! (and celebrate!)
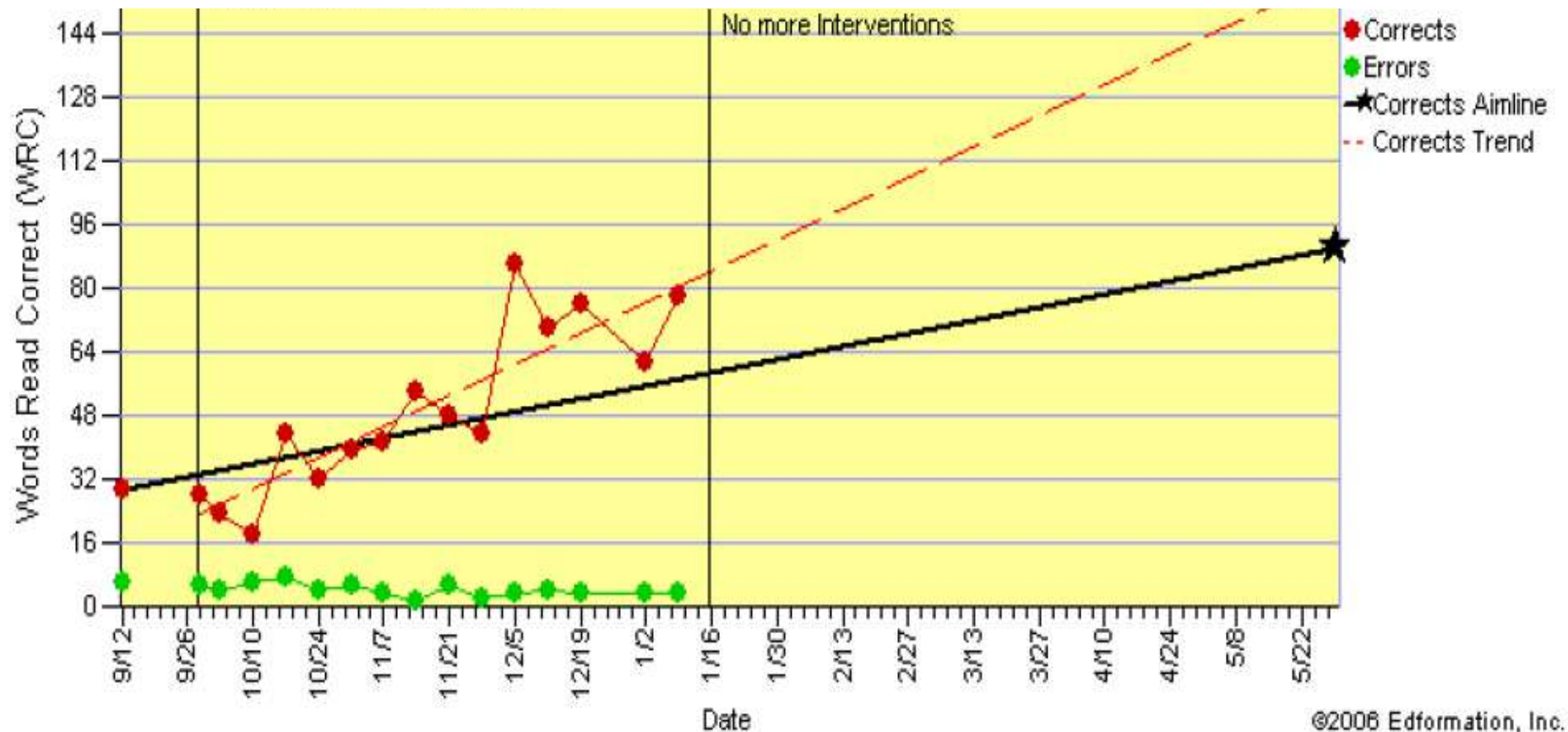
What can you do about "bounce" in the data?

Grade 3 : Reading - Standard Progress Monitor Passages

©2008 NCS Pearson, Inc.

Dealing with bounce…

- Is there a "measurement" problem?
  - Fidelity of admin and scoring
  - Materials aren't well designed or are too difficult
  - Who, where, and when measurement takes place can matter (esp for some kids)
  - Motivation issues (can't do vs. won't do)
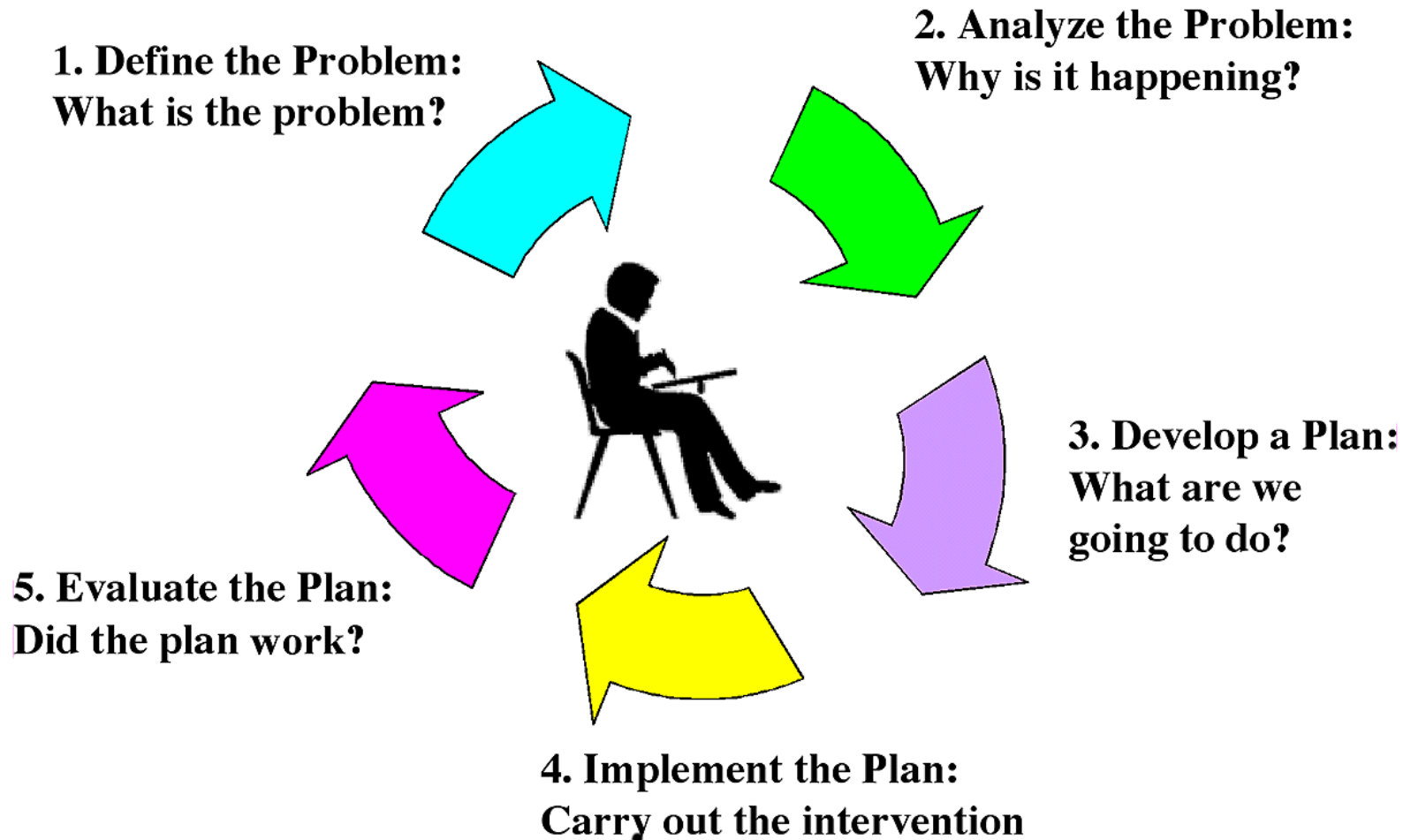
Dealing with bounce

- Other ways to minimize bounce or make decisions despite bounce
  - Do more probes at one time and take median or average score
  - Do more frequent measuremt (e.g., weekly or 2xweek)
    - Look at trend over time with many data points
  - Look at ALL data together (errors, mastery data, etc)
  - Use the least dangerous assumption…

What if there isn't adequate progress?

If you keep doing what you've been doing then you will keep getting what you've got.

Back to Problem Solving

Steps of the Problem Solving Process

1. Define the Problem: What is the problem?

2. Analyze the Problem: Why is it happening?

3. Develop a Plan: What are we going to do?

4. Implement the Plan: Carry out the intervention

5. Evaluate the Plan: Did the plan work?

What if there isn't adequate progress?

– Is the intervention being done with fidelity?

- Has fidelity check been done?

- Is the student in the right level of materials?

- Has the student been in school? Are they getting enough minutes of intervention per week?

What if there isn't adequate progress? Cont'd

– Should the intervention be "tweaked"? changed? Is there an intervention better "matched" to this student's needs?

- Changes could include trying a different intervention or just "tweaking" the current intervention such as adding a 5th repeat to a repeated reading or a sticker incentive for accurate reading

- Grade level or prob solving team members work together to discuss the data, the student, and what intervention changes would have the best chance of success

Problem Analysis:
What do we know? RIOT and ICEL

	Hypothesis	R Review	I Interview	O Observe	T Test
I Instruction					
C Curriculum					
E Environment					
L Learner					

What could we change?

Instructional Procedures		Materials	Arrangements	Time	Motivational Strategies
Focus or Skill	Teaching Strategies				

What could we change?

- Focus or skill
- Teaching strategies
  - more explicit, more modeling, more practice, more previewing, better matched with core
- Materials
  - Easier, better matched (cultural, interests, etc)
- Arrangements
  - Size group, location, Who is teaching?
- Time
  - Amount of time, days per week, time of day
- Motivation
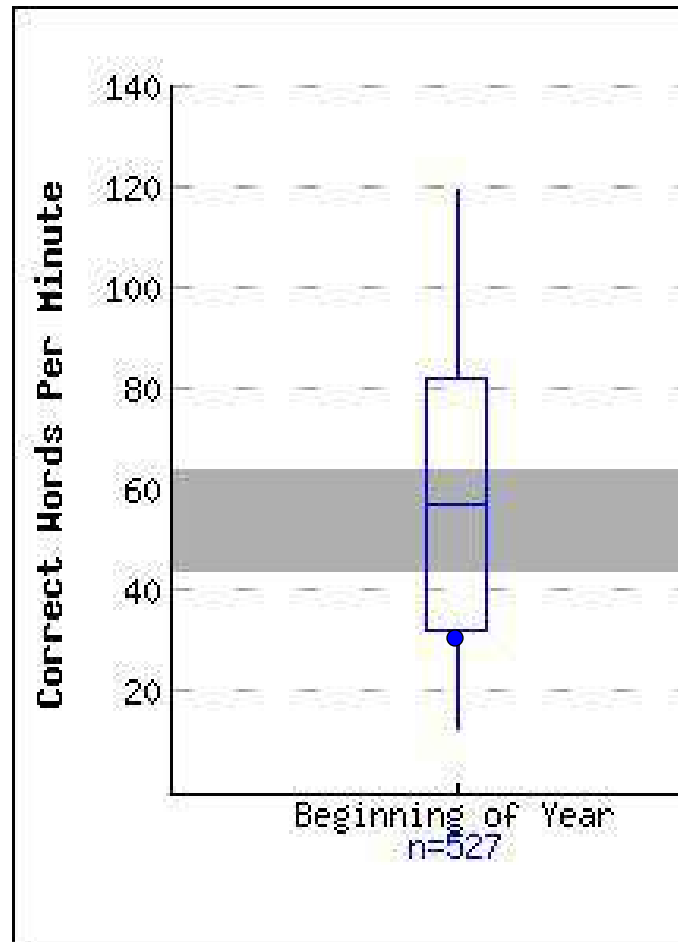 - Interests, goals, rewards, home/school

Tatiana Example

Fall Grade 2 Data...

Is the Core (Tier 1) working?

How can we group students and differentiate in Tier 1?

Do some students need "more than the core"?

•Is Tatiana in Trouble?
•Do others have similar difficulty?
•Where would we like her to be?

Tatiana Tier 2

- Grade level team put Tatiana In a Tier 2 small group working on reading rate… is it working?

- Went to Problem Solving Team…

Who Me (Grade 2)
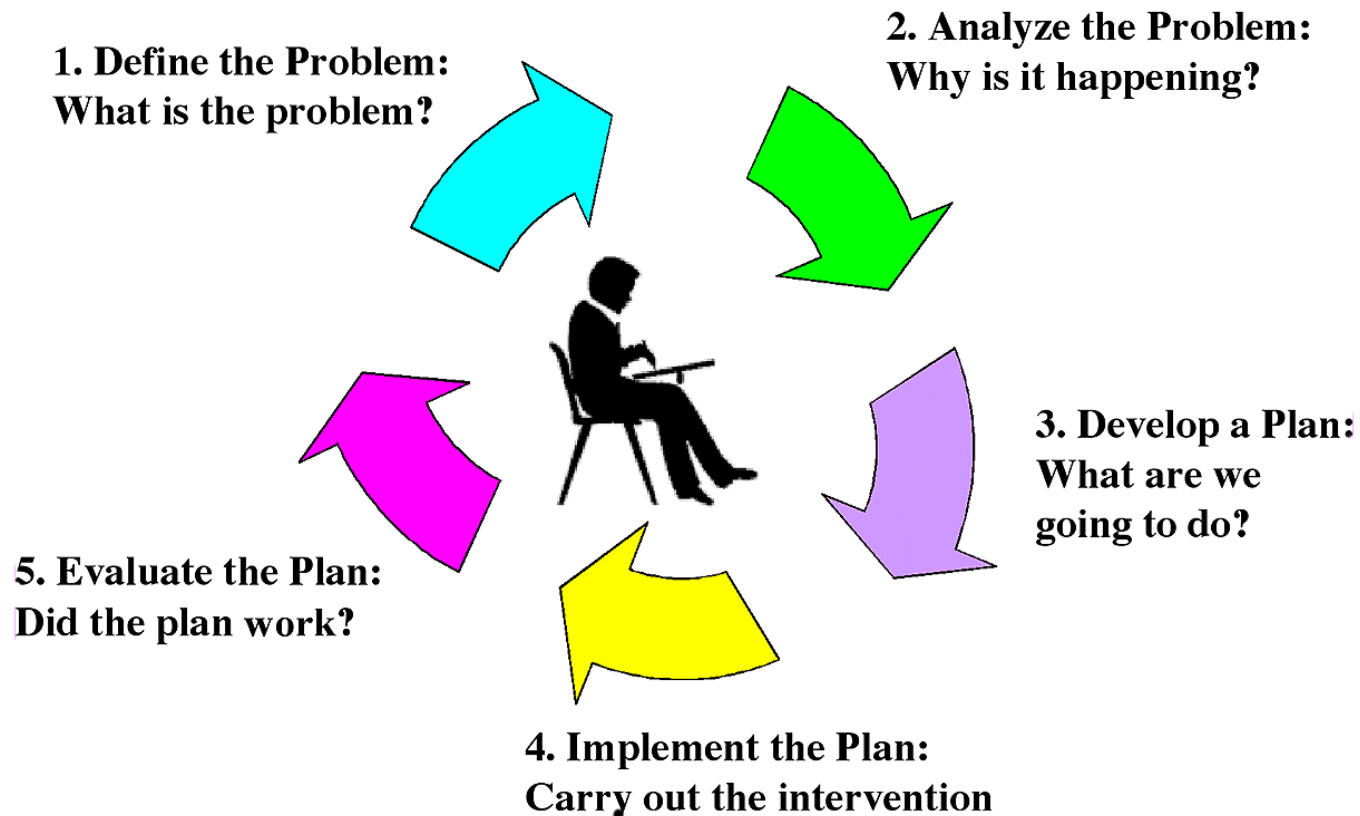Grade 2 : Reading - Standard Progress Monitor Passages
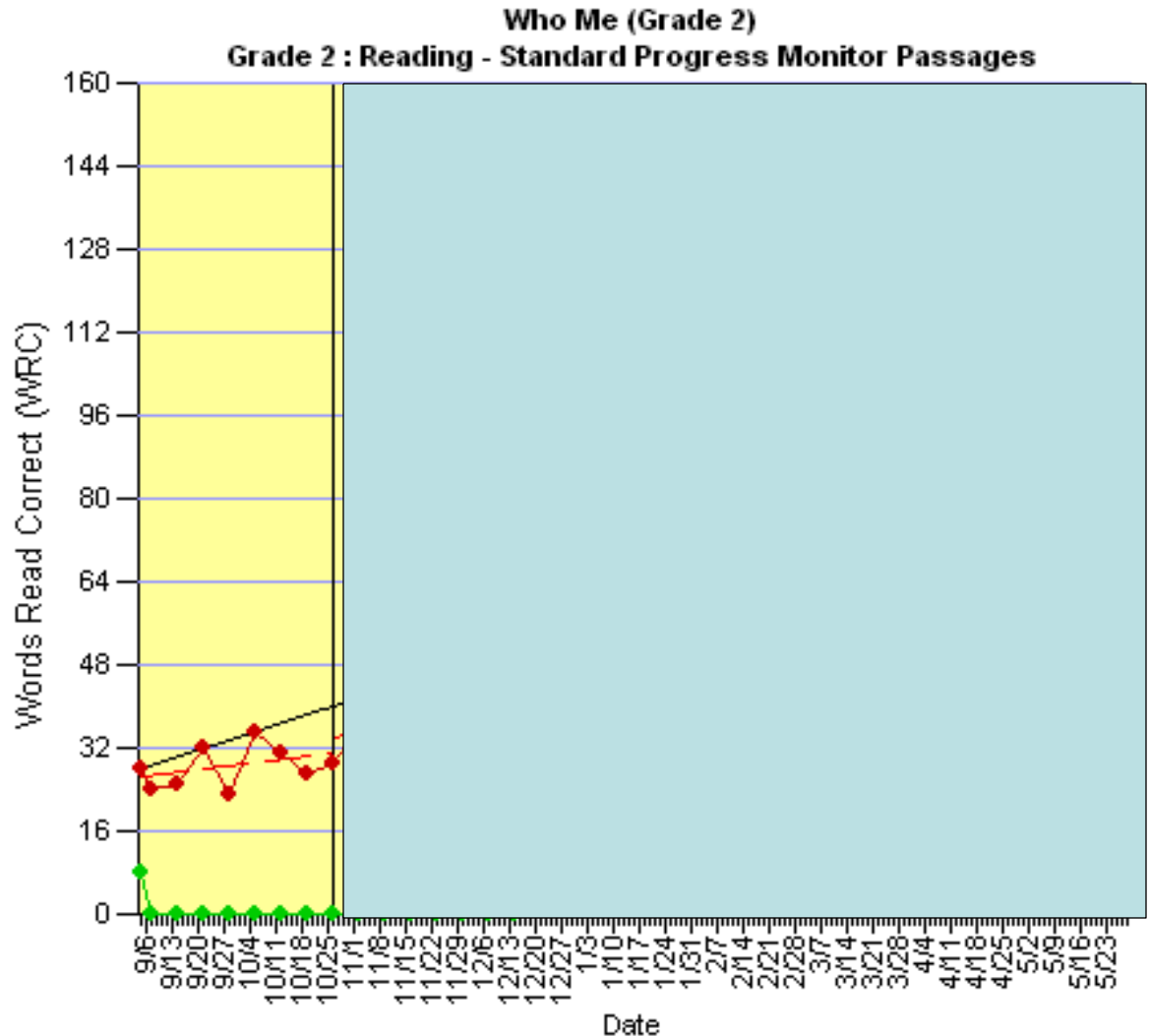
What should we do?

- Look at existing data/information- why? (problem analysis)
  - Increase Instructional Integrity (of Core? Of Tier 2) if that was a problem
  - Collect more information if needed for intervention planning

- Decided to change intervention (develop a plan)
  - Change SOMETHING: Group size, focus, instructional strategies, level of explicitness, motivation, time/timing, parent involvement, etc.
  - Still Tier 2 or now Tier 3?
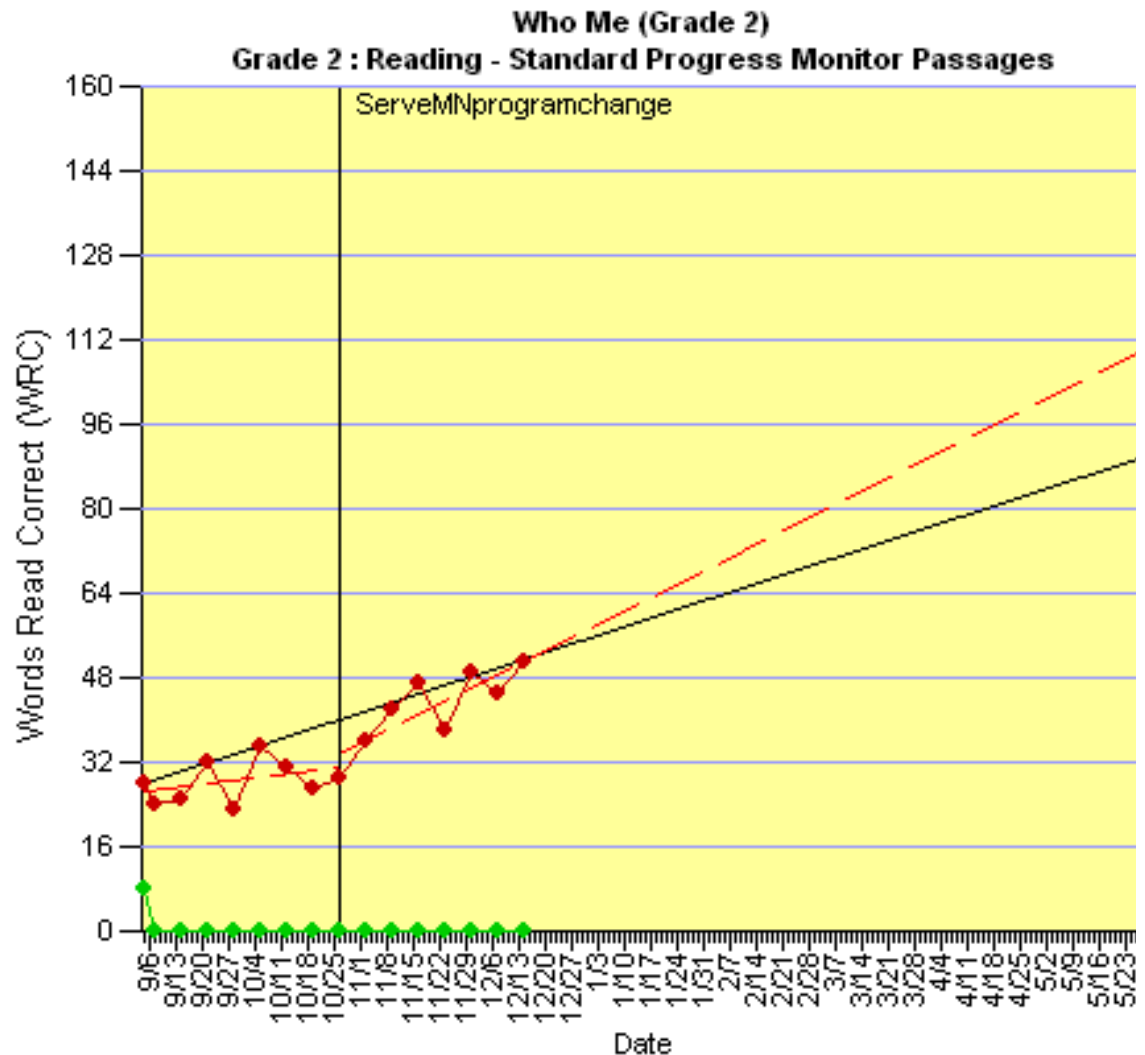
- Implement the plan, monitor progress and evaluate…

Problem Solving Team….

Steps of the Problem Solving Process

1. **Define the Problem:** What is the problem?

2. **Analyze the Problem:** Why is it happening?

3. **Develop a Plan:** What are we going to do?

4. **Implement the Plan:** Carry out the intervention

5. **Evaluate the Plan:** Did the plan work?

SCRED Graphic

Complete the Problem Solving Cycle

- ## Did we do it?
  - Integrity
- ## Did it work?

Who Me (Grade 2)
Grade 2 : Reading - Standard Progress Monitor Passages

Adam, Grade 4

- Winter Benchmark data = 85 wrc (target =114)
  - Fall Benchmark data= 89 (target=93)
- Error rate moderate (4, 4, & 6 errors)
- Very inconsistent academically, good attendance but attention, accuracy and work completion issues, basic decoding skills ok, can correct errors, can read better (with expression, meaning) in high interest material?
- Grade Level Team put Adam in Tier 2 intervention- working with MRC 1:1 on repeated reading intervention 20 min per day

Adam Gr 4

$y = 0.0204x - 726.28$

$R^2 = 0.0026$

words correct per min (grade level passage)
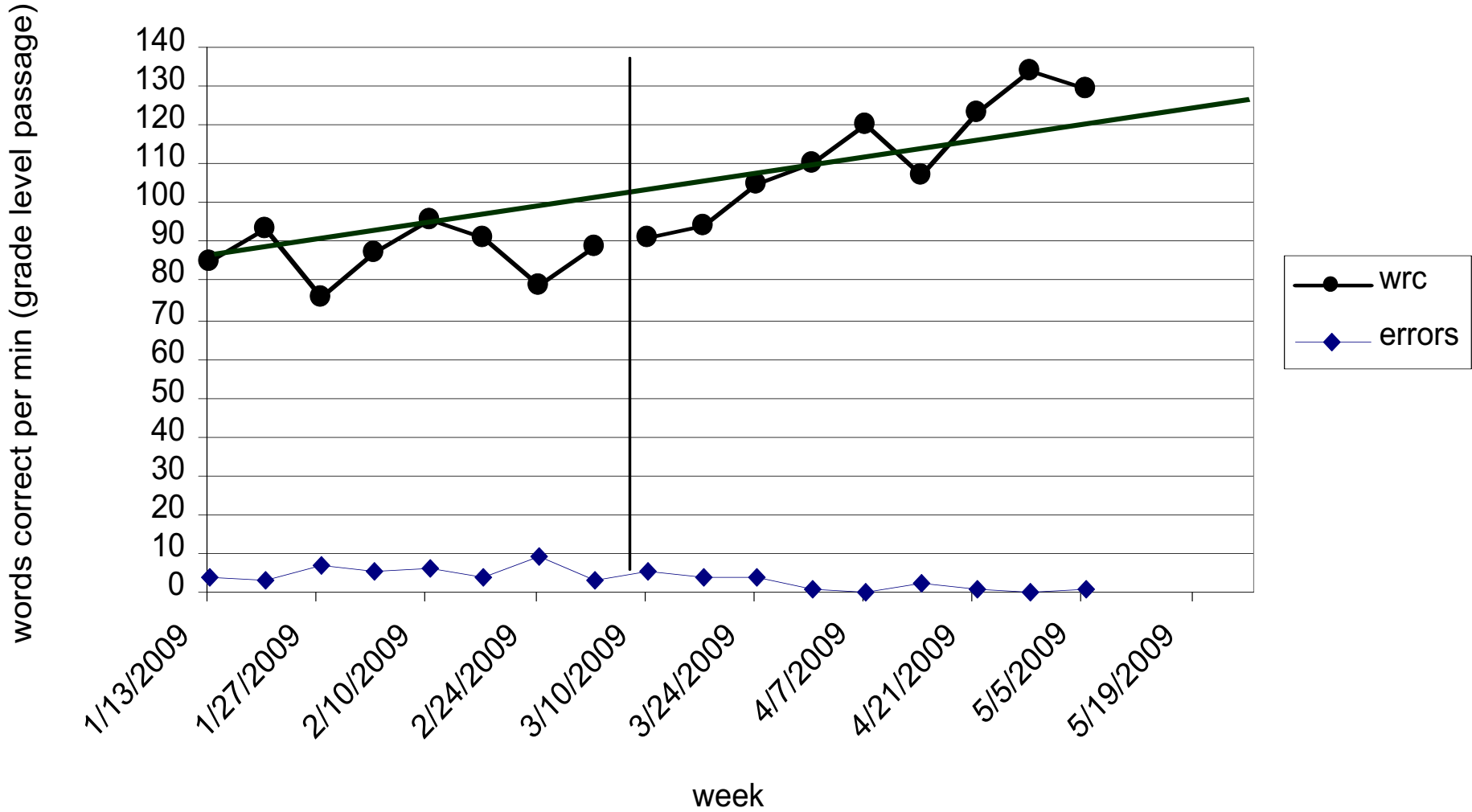
week

wrc

errors

Linear
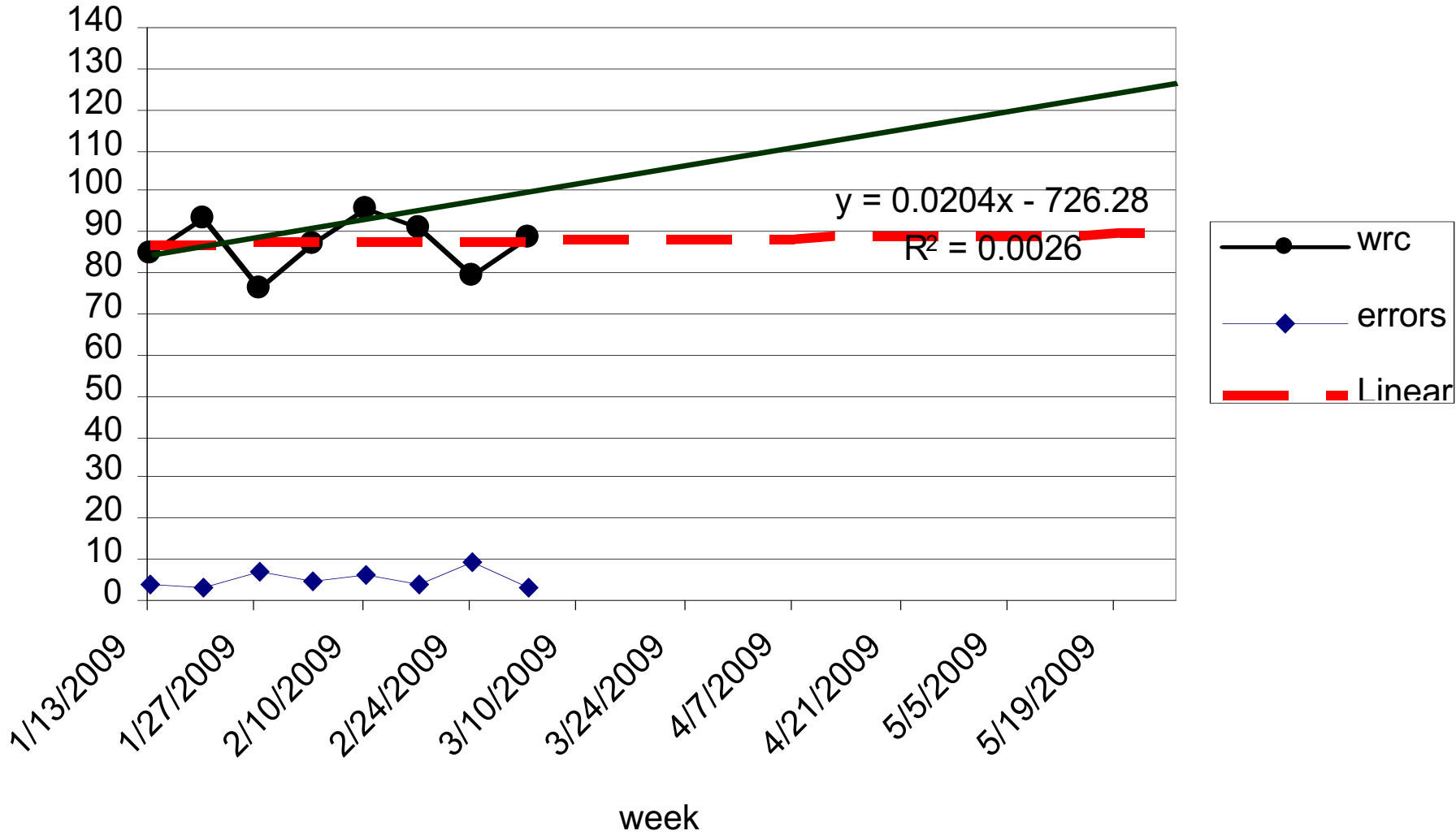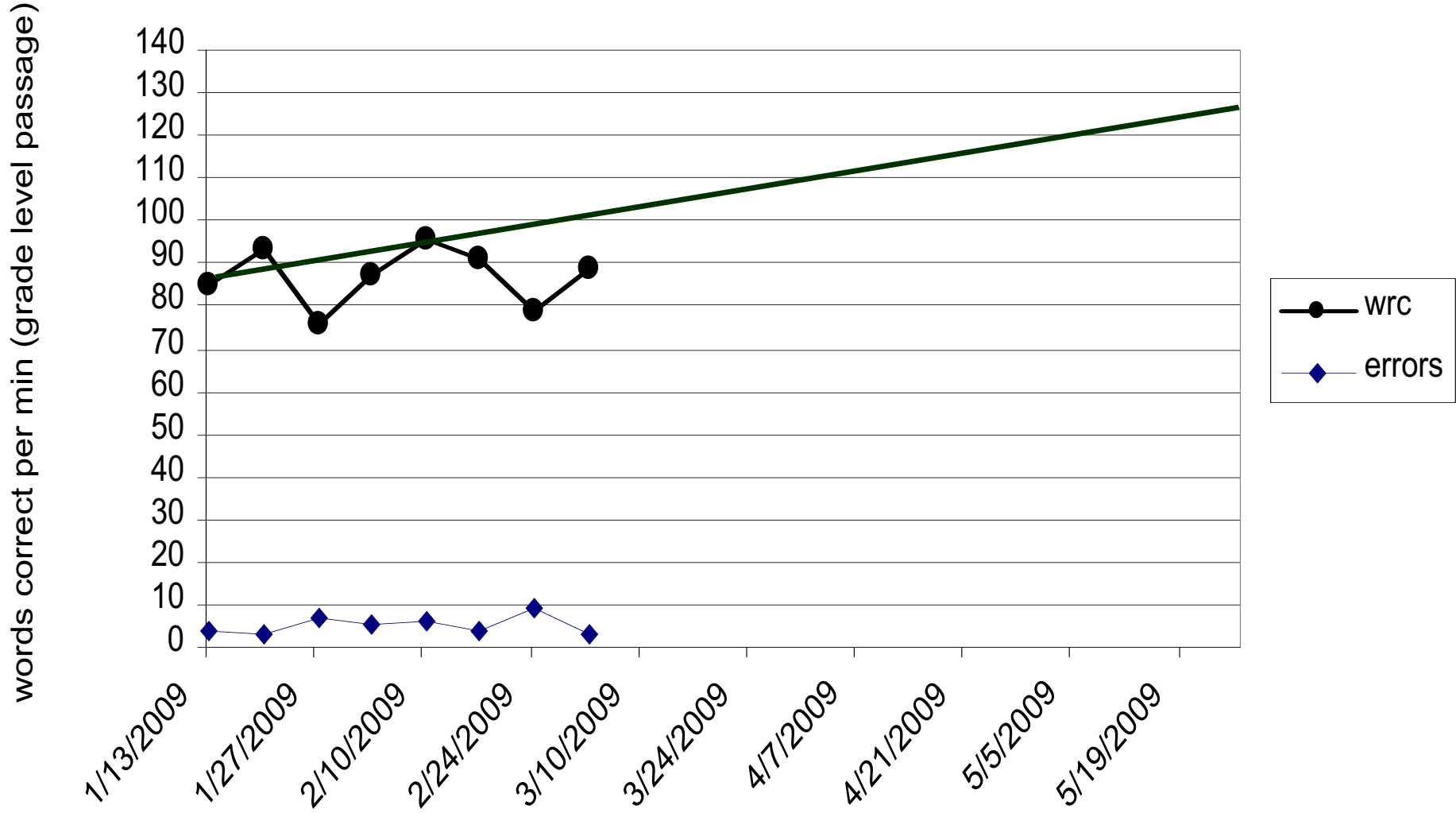
Adam Gr 4

Adam Decisions

- What should we change….
  - What else would you want to know?
  - What are at least 5 different ideas for changes that could be made….
  - Is this likely to be a tweak or a major shift?
  - How would you know if you made a good decision?

Adam Gr 4

Resources

- Web Resources
  - www.studentprogress.org
  - http://www.rti4success.org/ click on Progress monitoring on right side
  - www.interventioncentral.org look for information on CBM, graphing, etc
- Print Resources
  - Riley-Tillman & Burns (2009) *Evaluating Educational Interventions*. Guilford Press
  - Safer & Fleishman (2005). How Student Progress Monitoring Improves Instruction *Educational Leadership 62(5)* 81-83.

Why do this?

- When teachers USE progress monitoring
  - Students learn more!
  - Teachers design better instructional programs
  - Teacher decision making improves
  - Students become more aware of their performance *Safer & Fleishman, 2005*