Region X
Equity Assistance Center
at Education Northwest

Implementing and Sustaining Schoolwide Practice for Mathematics Improvement

May 12, 2016

Goals

- Understand the purpose of systemic mathematics learning intervention
- Learn about schoolwide practices which support student learning
- Learn methods to implement and sustain schoolwide practices supporting student learning of mathematics

Region X

- 9 time zones
- 5 U.S. states
- 2 U.S. territories
- 1 commonwealth
- 2 republics
- 4 federated states

Presenters

Patrice Woods
Region X EAC
Education Northwest

Heather Patterson-Hutton
Stewart Middle School

About You

Using the link, please share:

- Your name
- Your role
- What excites you about education?

Go to **www.govote.at** and use the code **39 28 47**

Overview

In this session we will address:

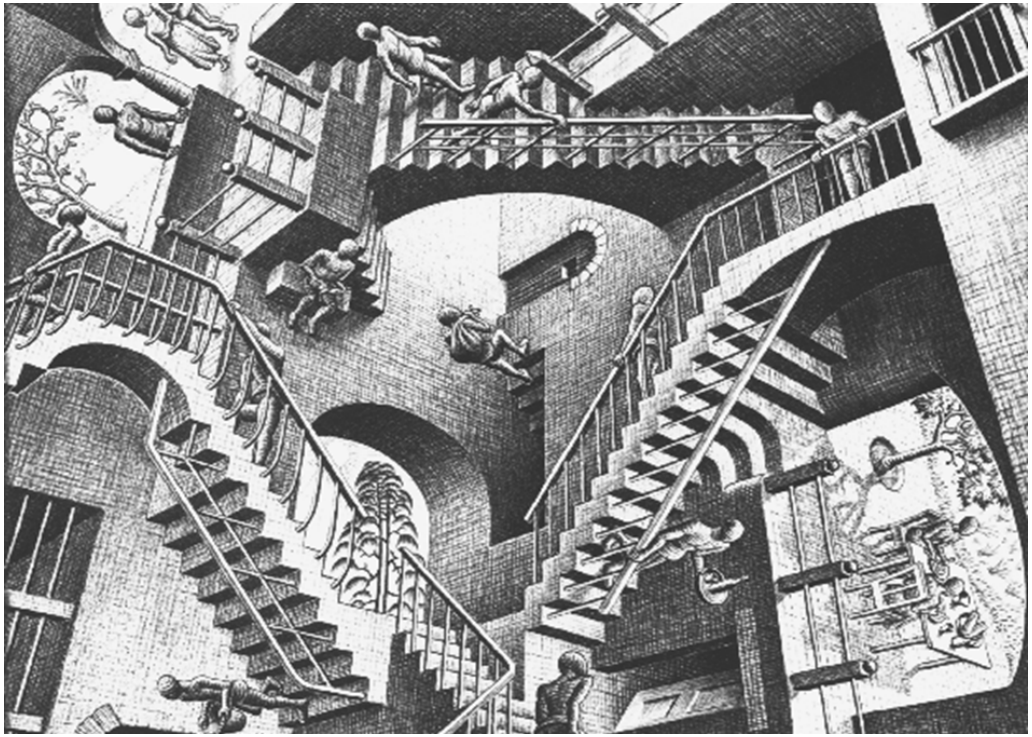
- Systems in the context of schools
  - Implementation of systems
  - Sustainability of systems

What connections do you make between the image and “school systems?”

Please go to:

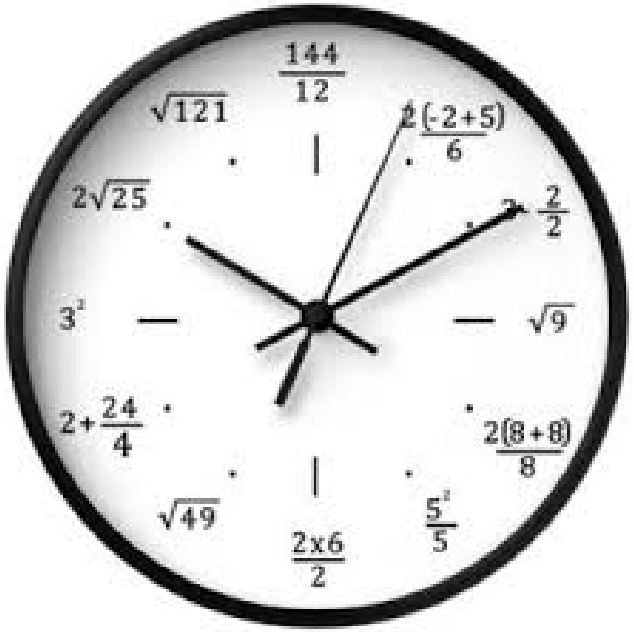
www.govote.at

use the code **17 24 35**



Poll
(We'll use this information later)

How long (in minutes) are class periods in your context?



Go to **www.govote.at** and use the code **68 07 8**

System

"... a group of related parts that move or work together ..."

http://www.merriam-webster.com/dictionary/system

Systems: Implementation

Alignment

- Mission
- Vision

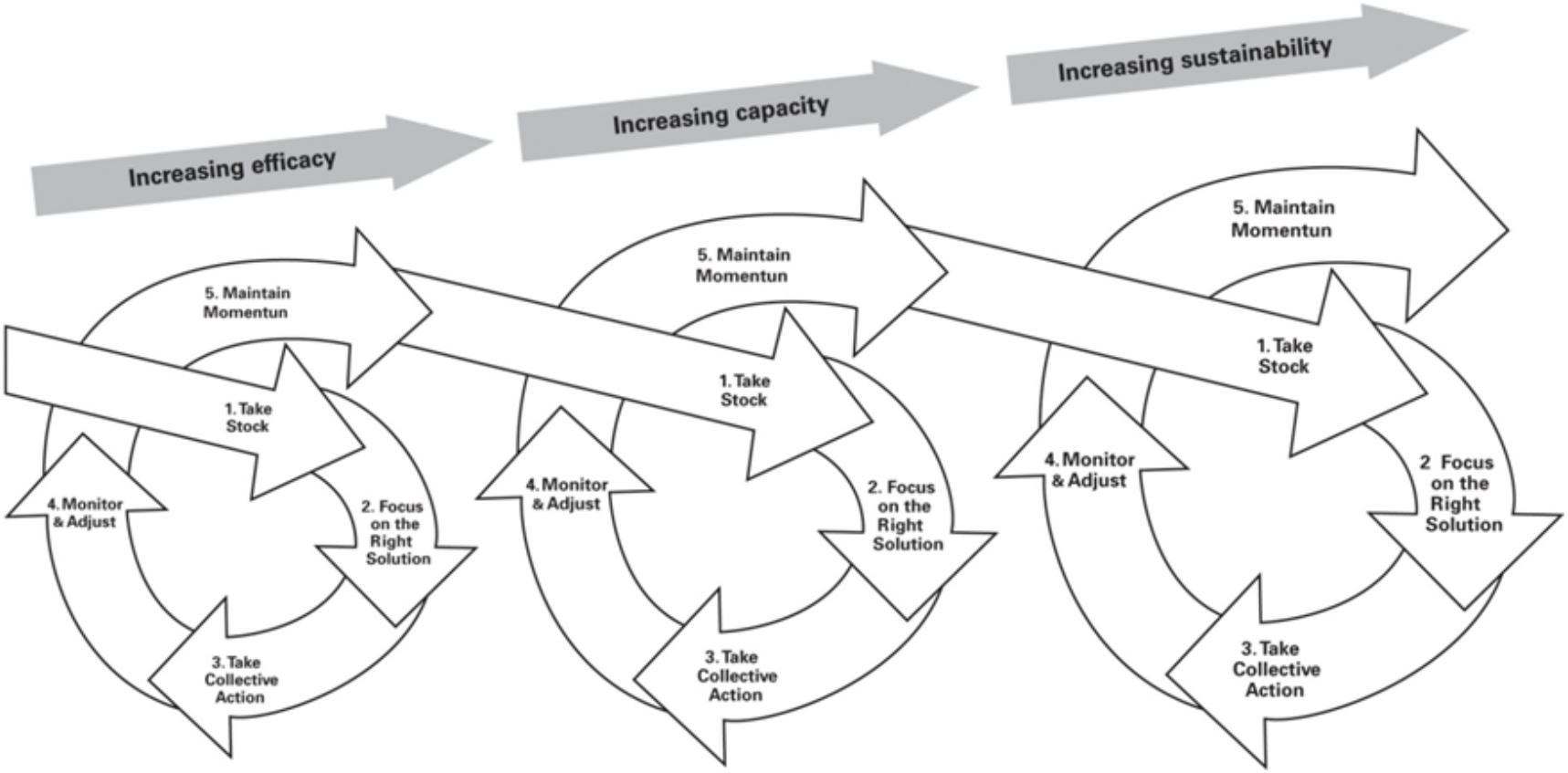
Capacity

- Administrators
- Teachers
- Students

Context

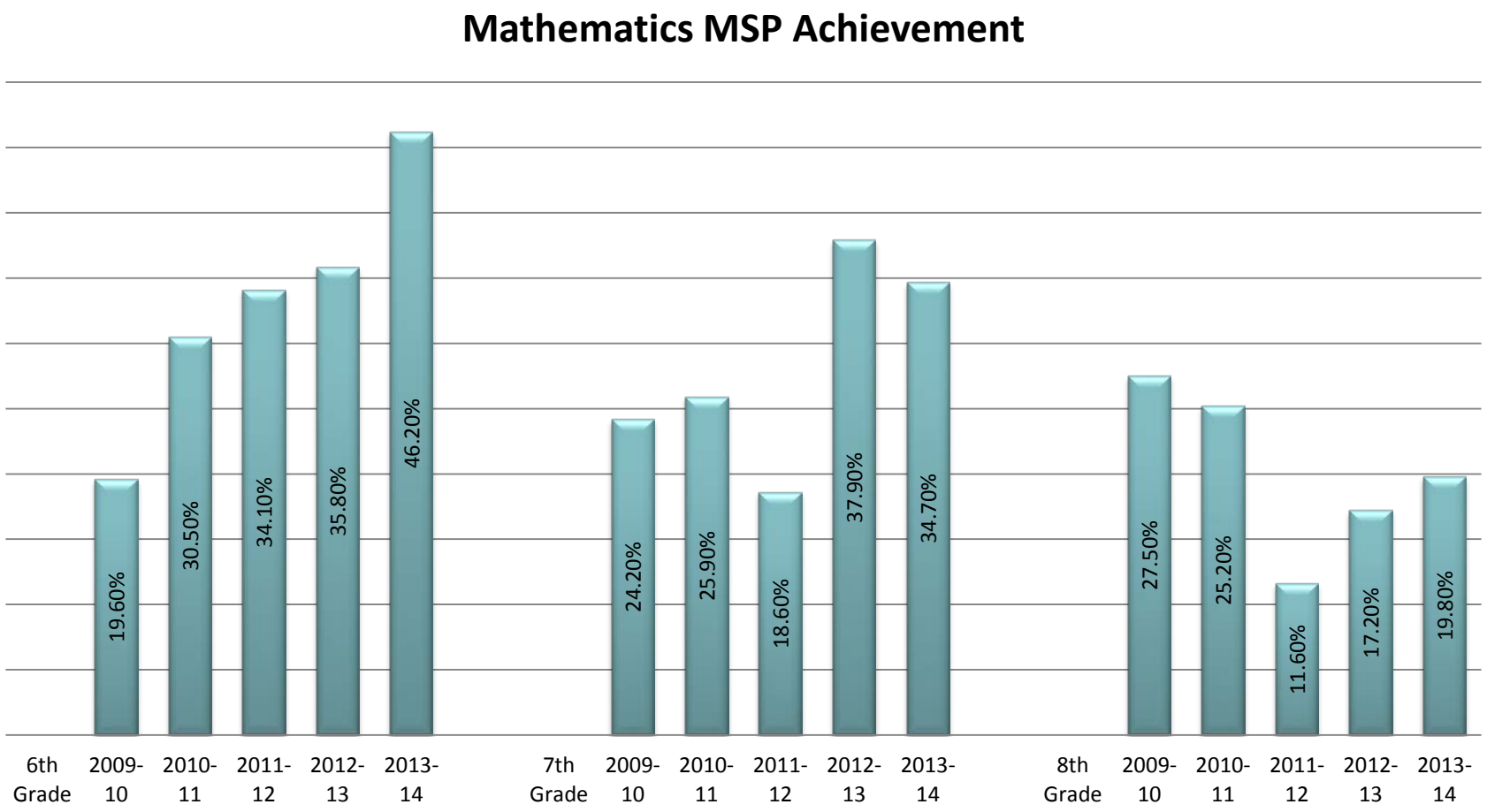
- Culture
- Climate

Systems: Sustainability



THE CASE OF STEWART MIDDLE SCHOOL

Measurement of Student Progress (MSP)



Student Achievement-

Subgroup Data

Source: OSPI State Report Card

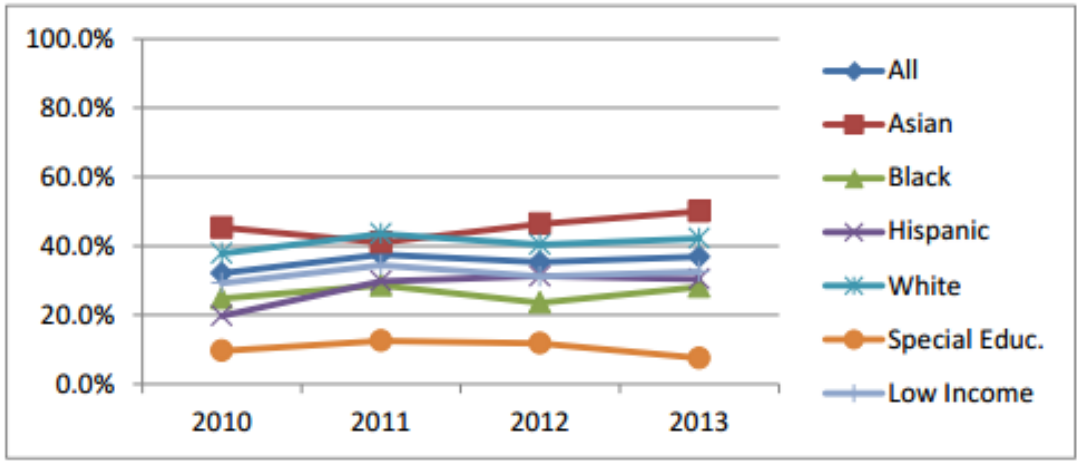
Note: **Cells shaded in green represent increases over time; cells shaded in red represent decreases over time.**

Percents are rounded to the nearest tenth.

Table 4. Subgroup Achievement Data on State Assessments from Baseline (2010) to 2013 in Reading/Math Combined

Stewart	2010	2011	2012	2013	Change Baseline to 2013
All	32.1%	37.4%	35.3%	36.8%	4.7%
Asian	45.3%	41.0%	46.4%	50.0%	4.7%
Black	24.8%	28.6%	23.5%	28.1%	3.3%
Hispanic	19.8%	29.7%	31.3%	30.4%	10.6%
White	37.8%	43.5%	40.4%	42.2%	4.3%
Special Educ.	9.6%	12.5%	11.8%	7.5%	-2.1%
Low Income	29.2%	34.4%	31.2%	32.6%	3.3%

Figure 4. Subgroup Achievement Data on State Assessments from Baseline (2010) to 2013 in Reading/Math Combined

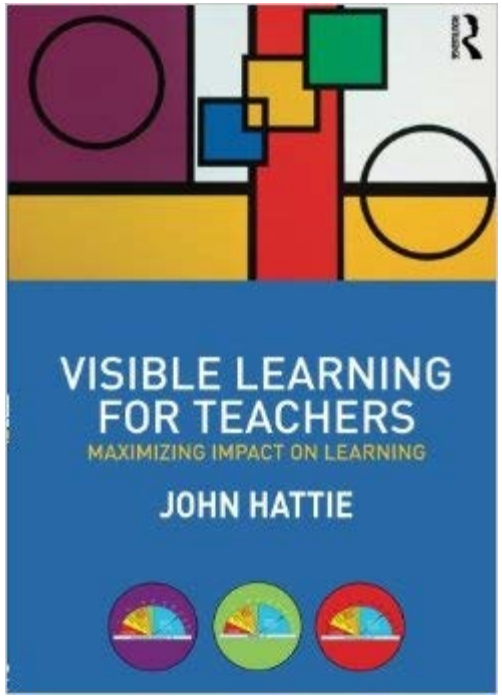


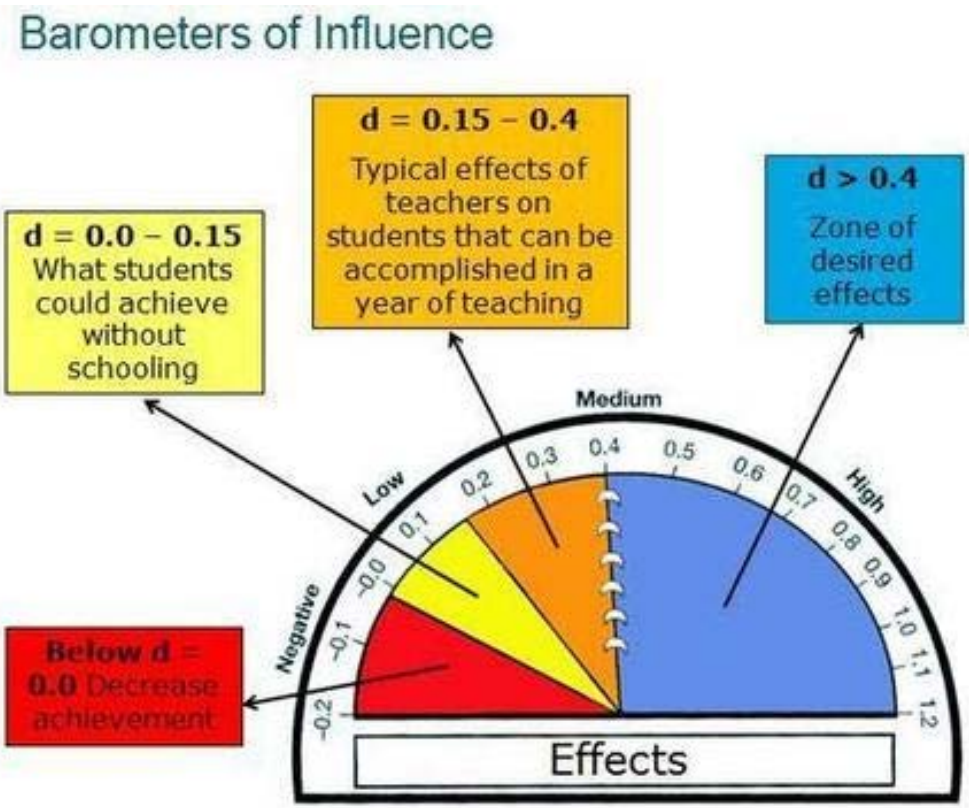
The “Why” … in Context

2010-2013
- SIG Status
- Intervention Model: Turnaround

2014-2017
- RAD status
- Intervention Model: Transformation

Basic Research Background





The Concept of “Effect Size”

“The key to many of the influences above the *d = 0.40* hinge-point is that they are deliberate interventions aimed at enhancing teaching and learning.”

John Hattie, *Visible Learning for Teachers*, p. 17

Implementing Instructional Reform Strategies

AVID (Advancement Via Individual Determination)

- For all **SMS** 6th graders
  - a program designed to teach the skills that students need in every class and for high school and beyond:
    - Notetaking
    - Organization skills
    - Study skills
    - Testing skills
    - Goal setting - goal setting for each class, each semester, middle school, high school, and after graduation
    - College planning for scholarships, applications, course offerings by declared majors
- Elective for 7th and 8th graders

Interactive (Math) Notebook

- Student outcomes
  - Consistency across subjects
  - Improvement in learning skills
- Teacher outcomes
  - Common language
  - Strengthened organization

8 **Left page**

Personal side
You interact with the information in your unqiue and creative way.

1 IN activity
Purpose: focus on today's activity

Examples: pre-test, quick-write, demonstration, T-chart

3 OUT activity
Purpose: reflect or apply today's activity

Examples: content or lab questions, quick-write, 3-2-1 summary, diagram, graph

Right page 9

Information side
You write or glue in information from class (today's lesson).

2 THROUGH activity
Purpose: information from today's activity (learning)

Examples: textbook or lecture notes, vocabulary, lab procedure & data, worksheet, concept map

Even Page #

Processing of Notes

Should demonstrate higher level understanding of the learning objective

Summary:

(Should connect back to the learning objective)

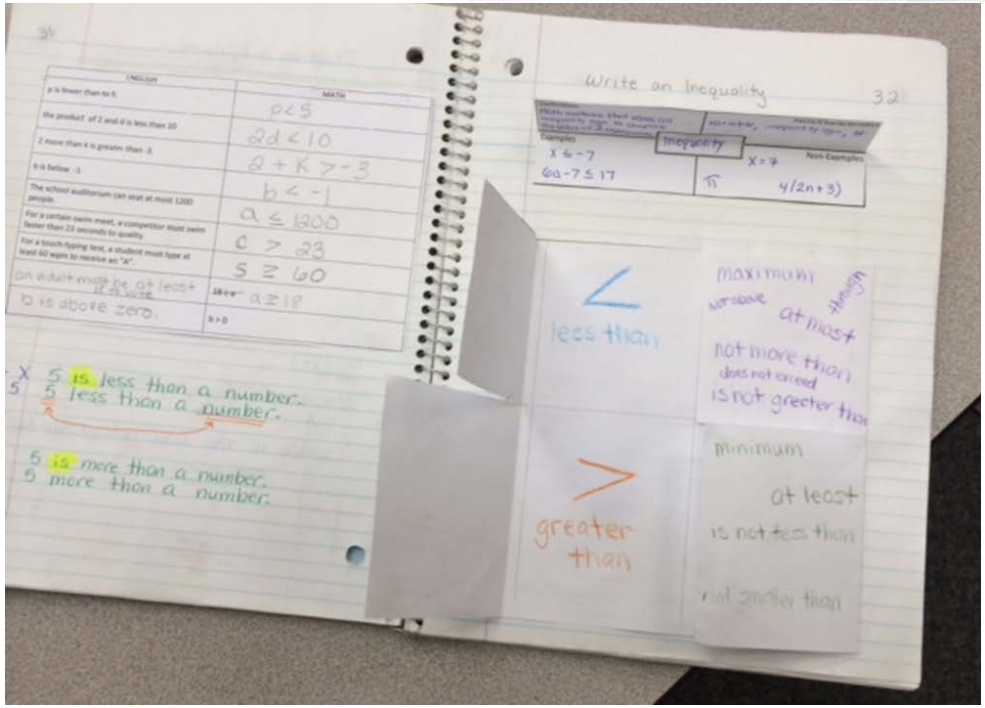
Odd Page #
Date

Title

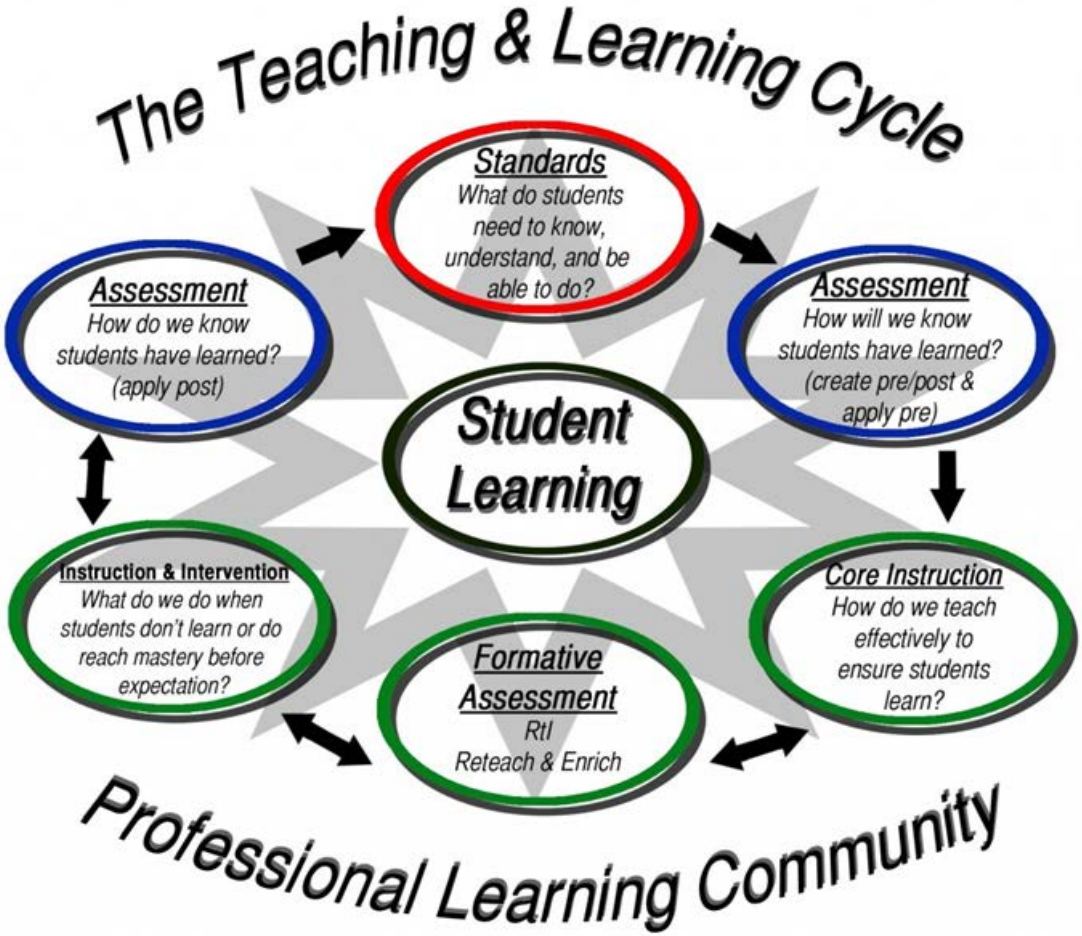
Learning Objective:

Study Questions

Notes



Standards-based Learning



Increased Learning Time (Back to poll)

67 minute daily core classes increase learning time in the toughest subjects

# of minutes/class period	# of minutes/ schoolyear	Difference in instructional minutes	additional class periods (compared to 45min periods)
45	8100	0	0
55	9900	1800	33
65	11700	3600	55

High School Credit

- Math
  - Algebra – all 8th graders
  - Geometry
- Technology
- Foreign language

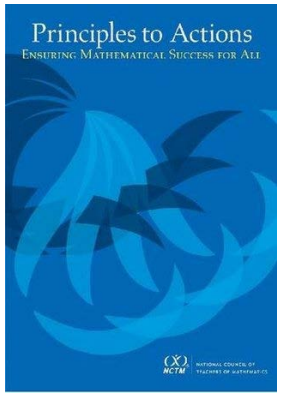
Extracurricular Supports

- 92% of students – afterschool activities
  - Voluntary
  - Academic
  - Sociocultural

Staff Support and Improvement

Daily common planning time for teachers

- Grade level PLC (bi-weekly)
- Content PLC (bi-weekly)
  - Focus on Implementing Effective Mathematics Teaching Practices (NCTM, 2014)
- Common Assessments
  - Formative and summative
  - Collaboratively created



Staff Support and Improvement

- Studio Models
  - Grade level
  - Content specific
- Peer observation cycles
  - Monthly school-team mathematics collaboration
  - Common focus goal
    - Mathematical Habits of Mind/Interaction
  - Prebrief/debrief feedback

Focus on Instruction

The Winners ...

Rank	Category	Influence	Studies	Effects	ES
1		Self-report grades	209	305	1.44
2		Absence of disruptive students	140	315	.86
3		Classroom behavioural	160	942	.80
4		Quality of teaching	141	195	.77
5		Reciprocal teaching	38	53	.74
6		Prior achievement	3387	8758	.73
7		Teacher-student relationships	229	1450	.72
8		Feedback	1276	1928	.72

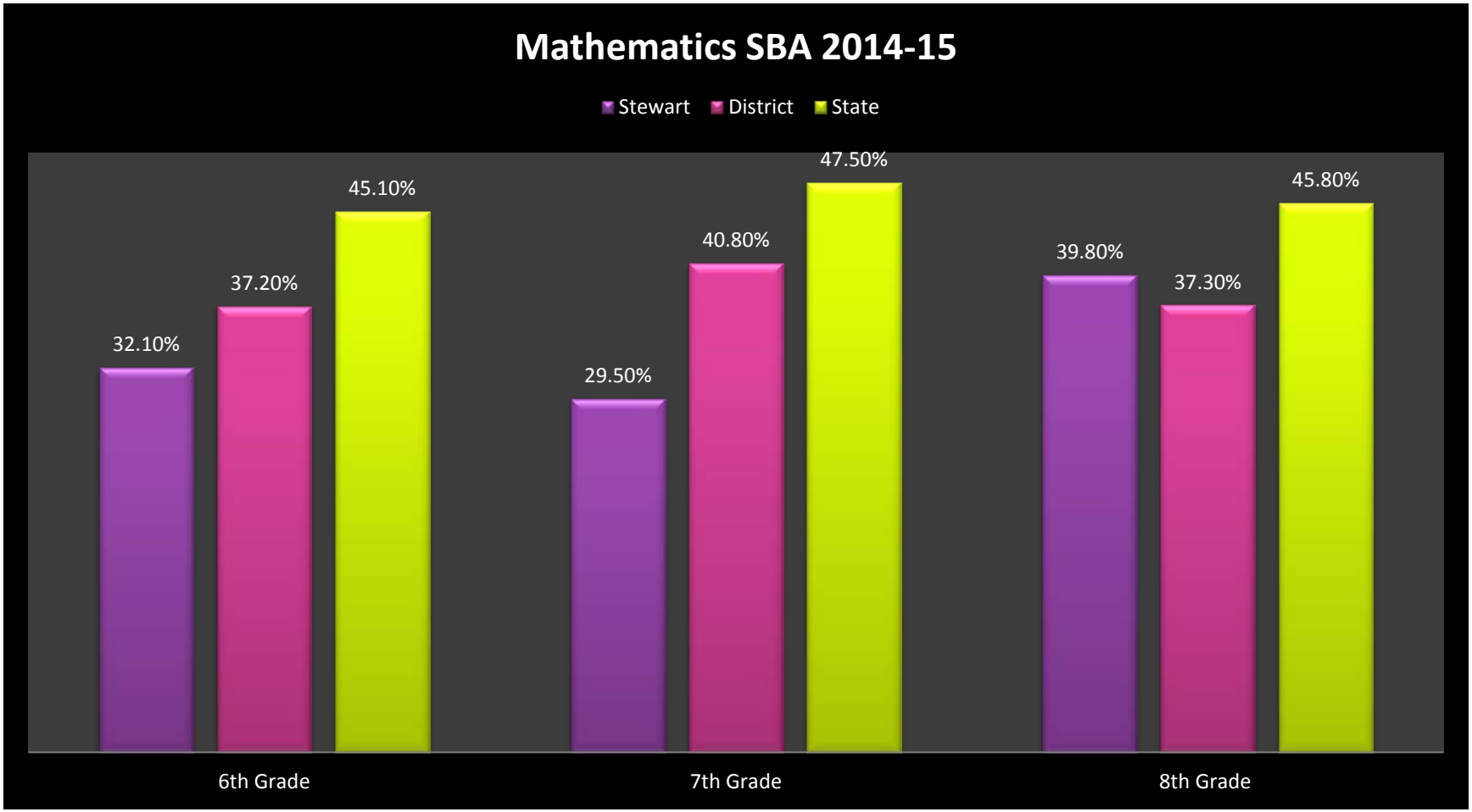
Progress Monitoring Tools

- Interim Assessment Blocks
  - Districtwide (2015–2016)

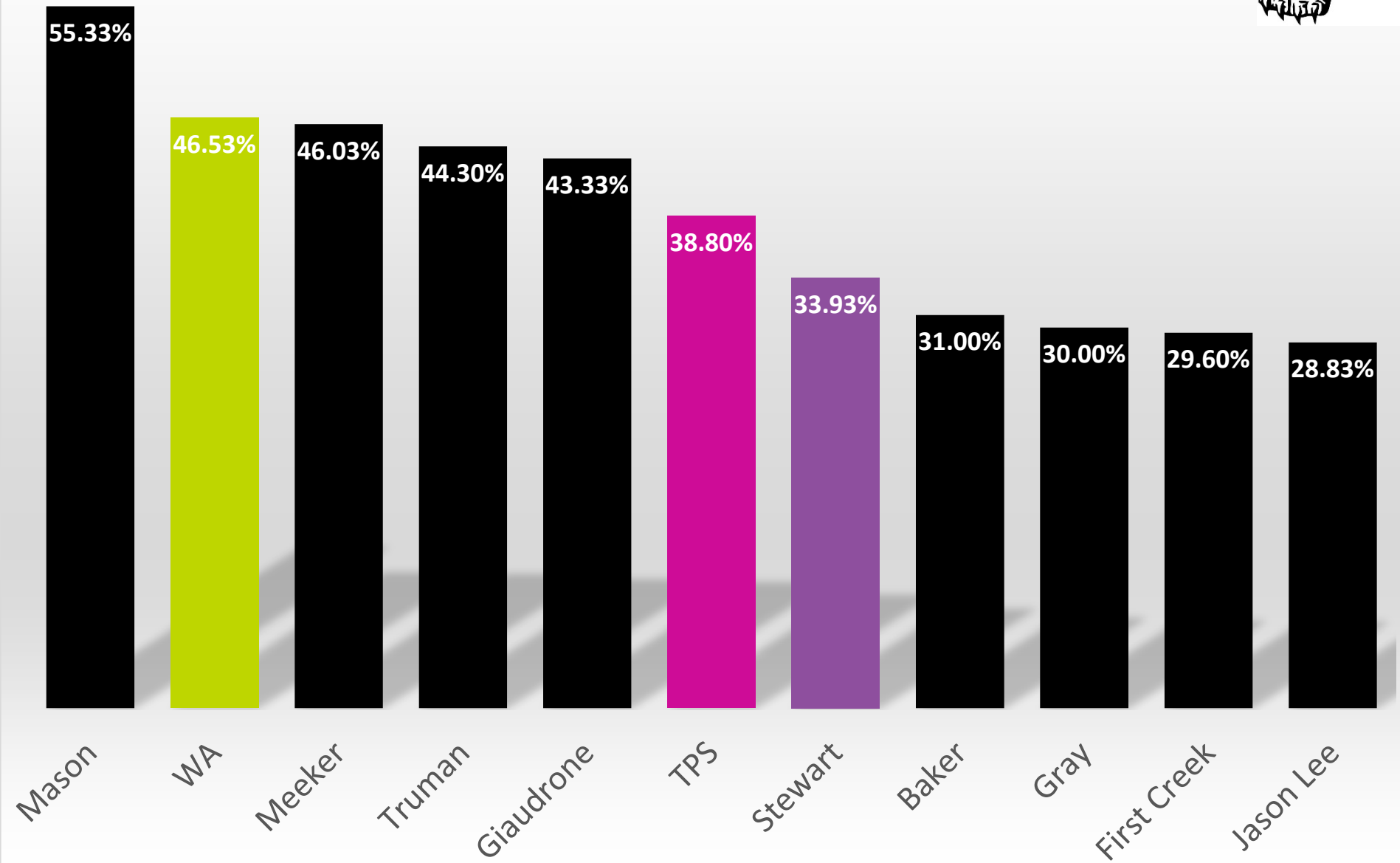
- i-Ready – benchmark assessments
  - Districtwide (2016–2017)
  - Math
  - Reading

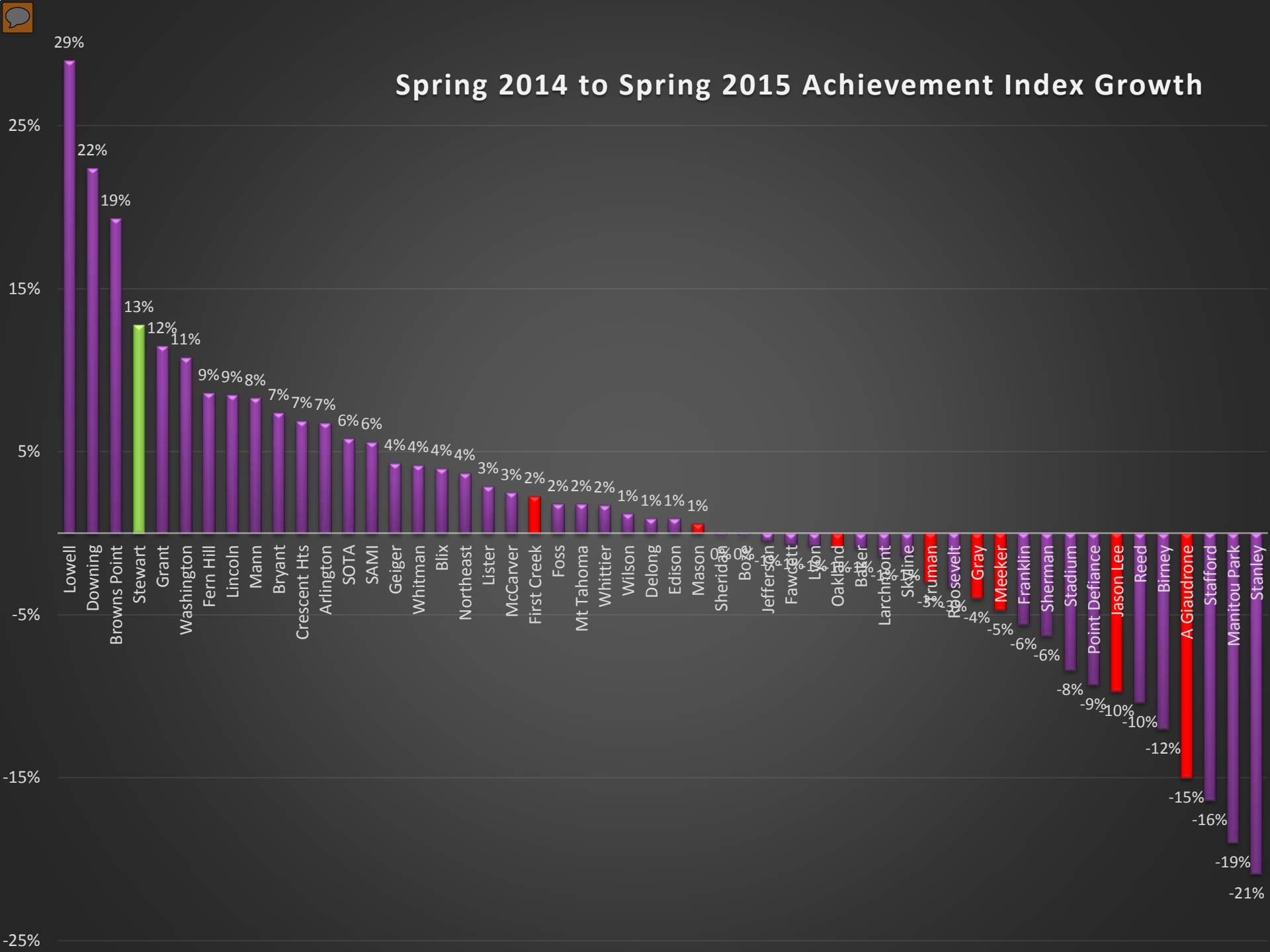
Recap: “The Halo Effect”

How is Stewart doing?



2015 SBA Math 6th - 8th Grade




Spring 2014 to Spring 2015 Achievement Index Growth
25%
15%
5%
-5%
-15%
-25%
Lowell 29%
Downing 22%
Browns Point 19%
Stewart 13%
Grant 12%
Washington 11%
Fern Hill 9%
Lincoln 9%
Mann 8%
Bryant 7%
Crescent Hts 7%
Arlington 7%
SOTA 6%
SAMI 6%
Geiger 4%
Whitman 4%
Blix 4%
Northeast 4%
Lister 3%
McCarver 3%
First Creek 2%
Foss 2%
Mt Tahoma 2%
Whittier 2%
Wilson 1%
Delong 1%
Edison 1%
Mason 1%
Sheridan 0%
Boze 0%
Jefferson -1%
Fawcett -1%
Lyon -1%
Oakland -1%
Baker -1%
Larchmont -1%
Skyline -1%
Truman -3%
Roosevelt -3%
Gray -4%
Meeker -5%
Franklin -6%
Sherman -6%
Stadium -8%
Point Defiance -9%
Jason Lee -10%
Reed -10%
Birney -12%
A Giaudrone -15%
Stafford -16%
Manitou Park -19%
Stanley -21%

How does it all happen?

- What does this mean for teachers?
- How does it become part of the system?
- What makes it sustainable?

Questions?

Resources

http://www.k12.wa.us/StudentAndSchoolSuccess/pubdocs/FinalReportStewartMiddleSchool.pdf

Hattie, J. (2011). *Visible Learning for Teachers.* New York, NY: Routledge.

NCTM. (2014). *Principles to Actions: Ensuring Mathematical Success for All.* Reston, VA: NCTM.

Thank You!

patrice.woods@educationnorthwest.org

hpatter@tacoma.k12.wa.us