Developing a District Wide Common Assessment System:

Using Data to Drive Instruction

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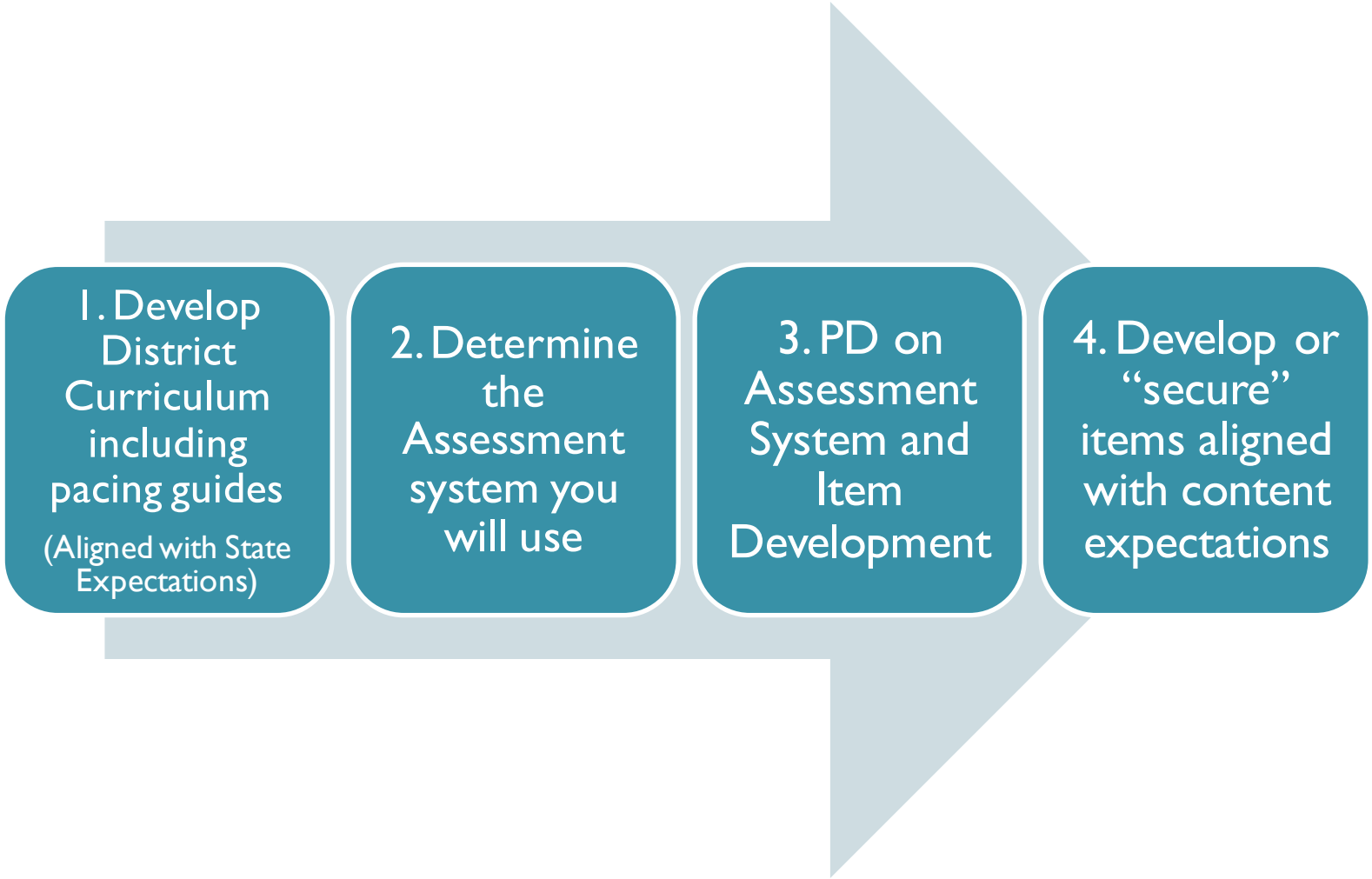
Short description of presentation:

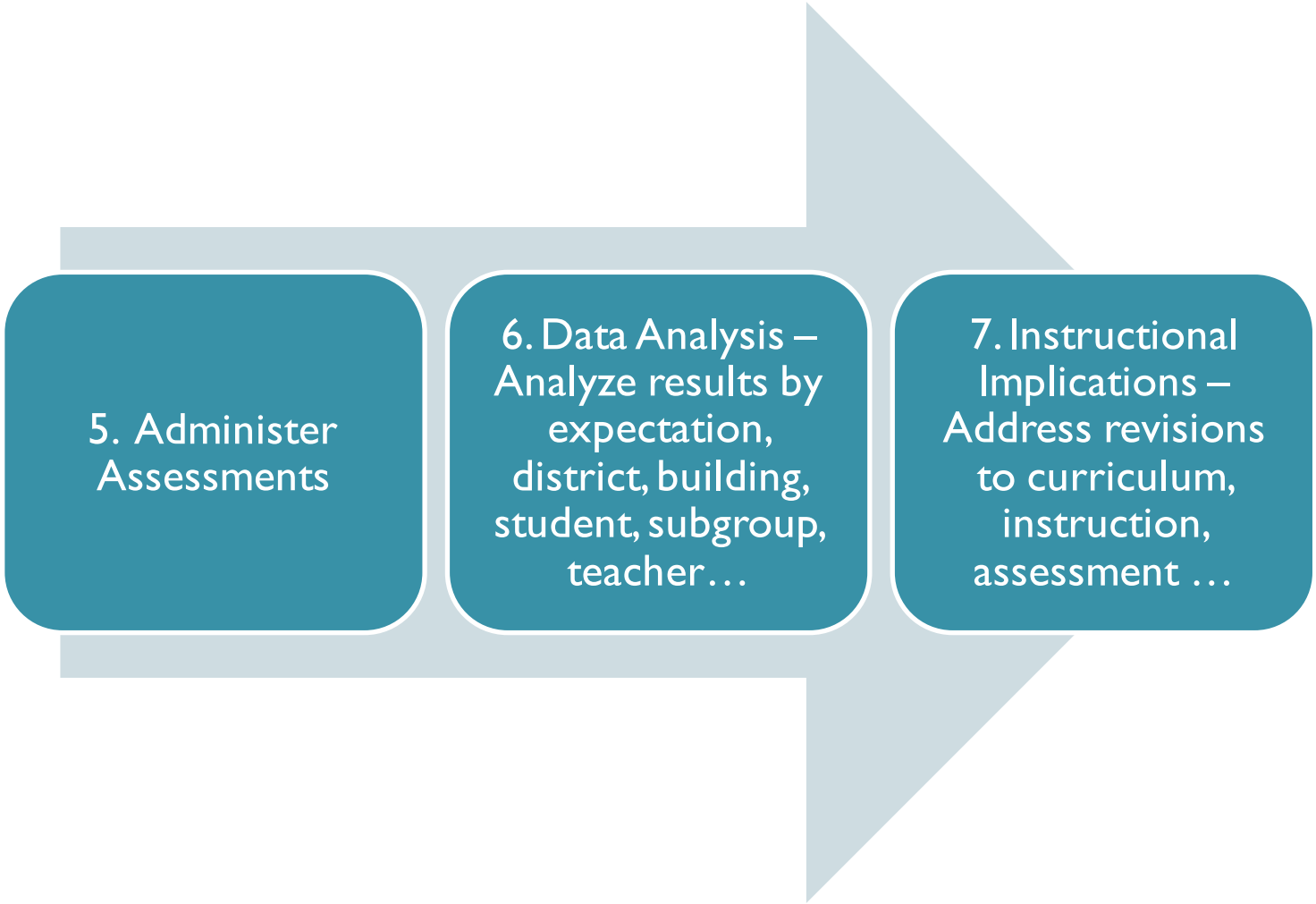
This session will provide a step by step approach to developing a district wide common assessment system from a top down (central office) and a bottom up (teacher developed) perspective. Participants will examine:

1. timeline,
2. item development,
3. assessment system,
4. professional development,
5. instructional implications and
6. data dissemination/disaggregation issues. This cyclical approach to an assessment system is highly replicable.

Timeline


1. Develop District Curriculum including pacing guides
(Aligned with State Expectations)
2. Determine the Assessment system you will use
3. PD on Assessment System and Item Development
4. Develop or "secure" items aligned with content expectations

Timeline


5. Administer Assessments
6. Data Analysis – Analyze results by expectation, district, building, student, subgroup, teacher…
7. Instructional Implications – Address revisions to curriculum, instruction, assessment …

What is a common assessment?

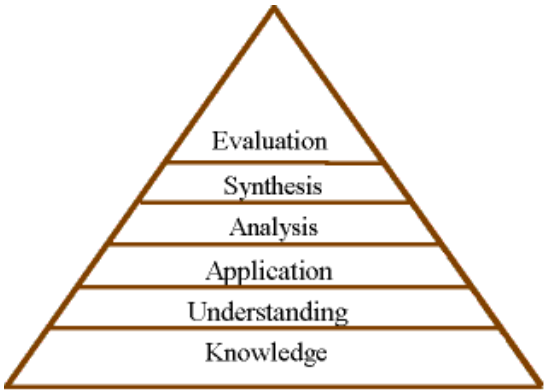
Def - Any assessment given by 2 or more instructors with the intention of collaboratively examining the results for:

- shared learning,
- instructional planning for individual students, and/or
- curriculum, instruction, and/or assessment modifications.

Common Assessments

Cannot be administered district wide without a common district curriculum. The curriculum should include:

- Curriculum aligned to state expectations (content and cognitive level!)
- Pacing Guides/Charts are critical!!! (Daily, Weekly, Monthly…)



Top down (central office)

- Curriculum Department
- Curriculum Specialists
- Instructional Departments

Bottom up perspective

- Teacher developed

Top down (central office) vs. bottom up (teacher developed)

- Examine Political Culture
- Examine Union Issues
- Examine Administrator Issues
- Examine Teacher Issues
- Examine Parental Issues
- Examine…

Buy In Is Critical!!!

Step 1:
Develop Curriculum Guides and Pacing Charts

Curriculum Guides

- Content Expectations
- Understandings
- Essential Questions
- Key Concepts
- Performance Tasks
- …

Pacing

You must ensure that ALL parties involved are covering the same content for each assessment.

Do not make assumptions!

Sample Pacing Charts - Daily

ALGEBRA 1/ALGEBRA LAB

COURSE PACING CHART: SEMESTER 1
ALGEBRA: TOOLS FOR A CHANGING WORLD Prentice-Hall, Inc.: ©2001

All days & dates are subject to change due to weather, holidays, and other events that occur during the year. This PACING CHART may be revised periodically as needed.

NOTE: Time must be allocated to answer questions students may have regarding the concepts taught in their Algebra class. Study and note-taking skills must be reinforced throughout the course.

WK	ALGEBRA TOPIC	ALGEBRA LAB TOPIC	Materials needed for Lab
	UNIT 1: Number Systems & Number Sense		
1	Introduction to the class: Grading Guidelines, Classroom Rules & Procedures discussion **Explain the meaning and uses of weighted averages (e.g., GNP, consumer price index, grade point average). (**Addendum Lesson 1: Weighted Averages)** Describing relationships between sets of data and using variables as a shorthand way to express relationships (1-2) Using the orders of operations and evaluating variable expression (1-3)	**Day 1**: Introduction to the class: Grading Guidelines, Classroom Rules & Procedures discussion **Day 2**: Refer to Addendum on Weighted Averages **Day 3**: Practice 1-2 Mixed Exercises **Day 4**: Alternative Assessment: refer to TE pg. 17 Reteaching 1-2 Practice 1-2 Example Exercises	• Tape measures • TI Calculators • Ch. 1 Support File **(SF)** use worksheets Reteaching 1-2, Practice 1-2 Example Exercises
2	Adding and subtracting with integers and decimals, finding absolute value and evaluating expressions (1-4) • Explain numerical relationships	**Day 1**: From **(SF)** materials Reteaching 1-4 & Practice 1-4 Example Exercises Incorporate a technique for concept review	• Ch. 1 Support File use Reteaching 1-3, Practice 1-3 Example Exercises

Sample Pacing Charts - Weekly

GEOMETRY COURSE PACING CHART:
SEMESTER 1

Geometry: APPLYING, REASONING AND MEASURING McDougal Littell, Inc.: ©2001

All days are subject to change due to weather, holidays, and other events that occur during the year. This PACING CHART may be revised periodically as needed.

Unit 1: Lines, Angles And LOGIC		Week 11	4.3 Proving Triangles are Congruent: SSS and SAS 4.4 Proving Triangles are Congruent: ASA and AAS 4.5 Using Congruent Triangles
Week 1	Introduction to the class: Class Guidelines 1.1 Patterns and Inductive Reasoning 1.2 Points, Lines and Planes	12	4.6 Isosceles, Equilateral, and Right Triangles 4.7 Triangles and Coordinate Proof **Chapter 4 - Test**
2	1.3 Segments and Their Measures 1.4 Angles and Their Measures **Quiz on Sections 1.2-1.4**	13	5.1 Perpendiculars and Bisectors
3	1.5 Segment and Angle Bisectors 1.6 Angle Pair Relationships 1.7 Introduction to Perimeter, Circumference, and Area	**Thanksgiving Recess**	
4	**Chapter 1 - Test** 2.1Conditional Statements 2.2 Definitions and Biconditional Statements	14	5.2 Bisectors of a Triangle 5.3 Medians and Altitudes of a Triangle **Quiz on Sections 5.1-5.3**
5	2.3 Deductive Reasoning 2.4 Reasoning with Properties from Algebra **Quiz on Sections 2.1-2.4**	15	5.4 Midsegment Theorem 5.5 Inequalities in One Triangle 5.6 Indirect Proof and Inequalities in Two Triangles
6	2.5 Proving Statements about Segments 2.6 Proving Statements about Angles **Chapter 2 - Test**	16	**Chapter 5 - Test** 8.1 Ratio and Proportions 8.2 Problem Solving in Geometry with Proportions
7	3.1 Lines and Angles 3.2 Proof and Perpendicular Lines 3.3 Parallel Lines and Transversals **Quiz on Sections 3.1-3.3**	17	8.3 Similar Polygons **Quiz on Sections 8.1 – 8.3** 8.4 Similar Triangles
8	3.4 Proving Lines are Parallel 3.5 Using Properties of Parallel Lines 3.6 Parallel Lines in the Coordinate Plane	18	8.5 Proving Triangles are Similar 8.6 Proportions and Similar Triangles 8.7 Dilations
9	3.7 Perpendicular Lines in the Coordinate Plane **Chapter 3 - Test**	19	**Chapter 8 Test** Review for Semester Exam
Unit 2: Triangles, Congruence and Similarity		20	**Semester Exams**
10	4.1 Triangles and Angles 4.2 Congruence and Triangles **Mid-Term Exam Chapters 1-4.2**		

Sample Pacing Charts - Monthly

GEOMETRY COURSE PACING CHART:
SEMESTER 1

Geometry: APPLYING, REASONING AND MEASURING McDougal Littell, Inc.: ©2001

All days are subject to change due to weather, holidays, and other events that occur during the year. This PACING CHART may be revised periodically as needed.

Unit 1: Lines, Angles And LOGIC	
Sept	Introduction to the class: Class Guidelines 1.1 Patterns and Inductive Reasoning 1.2 Points, Lines and Planes 1.3 Segments and Their Measures 1.4 Angles and Their Measures **Quiz on Sections 1.2-1.4** 1.5 Segment and Angle Bisectors 1.6 Angle Pair Relationships 1.7 Introduction to Perimeter, Circumference, and Area **Chapter 1 - Test** 2.1 Conditional Statements 2.2 Definitions and Biconditional Statements
Oct	2.3 Deductive Reasoning 2.4 Reasoning with Properties from Algebra **Quiz on Sections 2.1-2.4** 2.5 Proving Statements about Segments 2.6 Proving Statements about Angles **Chapter 2 - Test** 3.1 Lines and Angles 3.2 Proof and Perpendicular Lines 3.3 Parallel Lines and Transversals **Quiz on Sections 3.1-3.3** 3.4 Proving Lines are Parallel 3.5 Using Properties of Parallel Lines 3.6 Parallel Lines in the Coordinate Plane 3.7 Perpendicular Lines in the Coordinate Plane **Chapter 3 - Test**
Unit 2: Triangles, Congruence and Similarity	
Nov	4.1 Triangles and Angles 4.2 Congruence and Triangles **Mid-Term Exam Chapters 1-4.2**
Nov	4.3 Proving Triangles are Congruent: SSS and SAS 4.4 Proving Triangles are Congruent: ASA and AAS 4.5 Using Congruent Triangles
	4.6 Isosceles, Equilateral, and Right Triangles 4.7 Triangles and Coordinate Proof **Chapter 4 - Test**
	5.1 Perpendiculars and Bisectors
	Thanksgiving Recess
Nov	5.2 Bisectors of a Triangle 5.3 Medians and Altitudes of a Triangle **Quiz on Sections 5.1-5.3**
Dec	5.4 Midsegment Theorem 5.5 Inequalities in One Triangle 5.6 Indirect Proof and Inequalities in Two Triangles **Chapter 5 - Test** 8.1 Ratio and Proportions 8.2 Problem Solving in Geometry with Proportions 8.3 Similar Polygons **Quiz on Sections 8.1 – 8.3** 8.4 Similar Triangles 8.5 Proving Triangles are Similar 8.6 Proportions and Similar Triangles 8.7 Dilations **Chapter 8 Test** Review for Semester Exam
	Semester Exams

The Curriculum/Pacing Charts (=) Common Assessment standards should be "Paced Out"

"Total and Divide", "Power Standards", "State Focus","Next Level"…

October Assessment

Number, operation, and quantitative reasoning. The student represents and uses numbers in a variety of equivalent forms. The student is expected to:
(A) compare and order integers and positive rational numbers;
(B) convert between fractions, decimals, whole numbers, and percents mentally, on paper, or with a calculator; and
(C) represent squares and square roots using geometric models.

January Assessment

(2) Number, operation, and quantitative reasoning. The student adds, subtracts, multiplies, or divides to solve problems and justify solutions. The student is expected to:
(A) represent multiplication and division situations involving fractions and decimals with models, including concrete objects, pictures, words, and numbers;
(B) use addition, subtraction, multiplication, and division to solve problems involving fractions and decimals;
(C) use models, such as concrete objects, pictorial models, and number lines, to add, subtract, multiply, and divide integers and connect the actions to algorithms;
(D) use division to find unit rates and ratios in proportional relationships such as speed, density, price, recipes, and student-teacher ratio;

April Assessment

(5) Patterns, relationships, and algebraic thinking. The student uses equations to solve problems. The student is expected to:
(A) use concrete and pictorial models to solve equations and use symbols to record the actions; and
(B) formulate problem situations when given a simple equation and formulate an equation when given a problem situation.
(6) Geometry and spatial reasoning. The student compares and classifies two- and three-dimensional figures using geometric vocabulary and properties. The student is expected to:
(A) use angle measurements to classify pairs of angles as complementary or supplementary;
(B) use properties to classify triangles and quadrilaterals;
(C) use properties to classify three-dimensional figures, including pyramids, cones, prisms, and cylinders; and
(D) use critical attributes to define similarity.

June Assessment

(7) Geometry and spatial reasoning. The student uses coordinate geometry to describe location on a plane. The student is expected to:
(A) locate and name points on a coordinate plane using ordered pairs of integers; and
(B) graph reflections across the horizontal or vertical axis and graph translations on a coordinate plane.
(8) Geometry and spatial reasoning. The student uses geometry to model and describe the physical world. The student is expected to:
(A) sketch three-dimensional figures when given the top, side, and front views;
(B) make a net (two-dimensional model) of the surface area of a three-dimensional figure; and
(C) use geometric concepts and properties to solve problems in fields such as art and architecture.
(9) Measurement. The student solves application problems involving estimation and measurement. The student is expected to:
(A) estimate measurements and solve application problems involving length (including perimeter and circumference) and area of polygons and other shapes;
(B) connect models for volume of prisms (triangular and rectangular) and cylinders to formulas of prisms (triangular and rectangular) and cylinders; and
(C) estimate measurements and solve application problems involving volume of prisms (rectangular and triangular) and cylinders.

PACING

"The smaller the steps, the easier the journey"

Twianie Roberts, Ed.D

Step 2: Determine the assessment system you will use

The system should have the ability to provide immediate feedback by

- District
- Building
- Teacher
- Strand/Standard/Content Expectation
- Subgroup
- Over time
- …

Before you begin, decide how detailed you need your data to be!

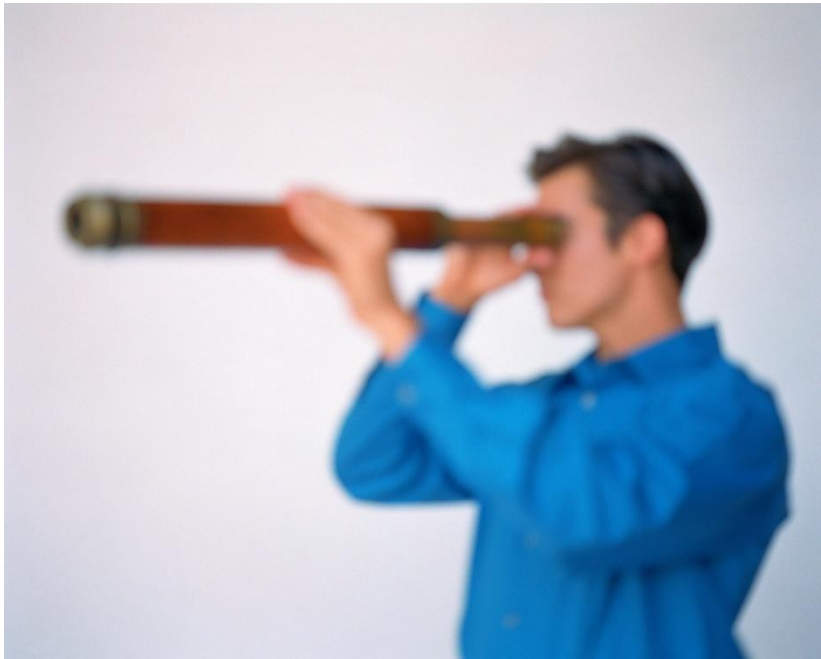
Step 2: Determine the assessment system you will use (Other Issues)

Cost

Examine the cost over several years – Your assessment system may be wonderful, but cost prohibitive.

Accessibility

Can all parties involved easily access the data? If teachers cannot access the data in a timely manner, then the data (and process) become useless.



Usability

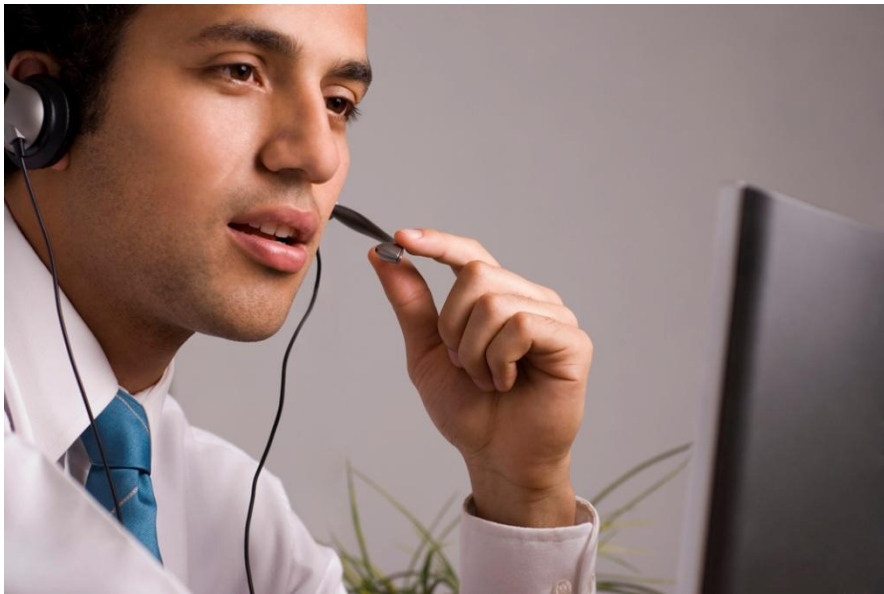
Is the system user friendly?

Monitoring

Who, at the district level, will monitor the system? (Instructional Support)

Support

How will system support be provided for the glitches? (Technical Support at the company and district level)

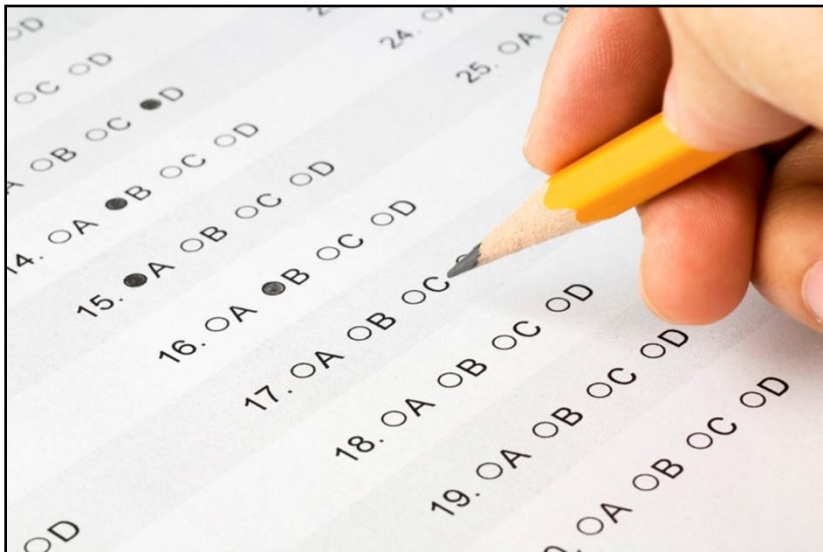


Test Type?

What type of common assessment will we administer?

Is our choice doable or cost prohibitive?

- Multiple Choice
- Essay
- Short Answer
- Project
- Performance
- …



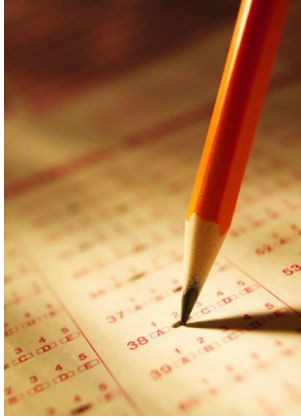
Test Grades/Subjects

- ELA/Math (2-12)?
- Science?
- Social Studies?
- Art?
- Technology?
- ???

3. PD on Assessment System and Item Development

Include ALL parties involved!

Test Types



Formative vs. Summative

- **Formative -** Formative assessment is often done at the beginning or during a program, thus providing the opportunity for immediate evidence for student learning in a particular course or at a particular point in a program.
- **Summative-** Summative assessment is comprehensive in nature, provides accountability and is used to check the level of learning at the end of the program.

Common Assessments

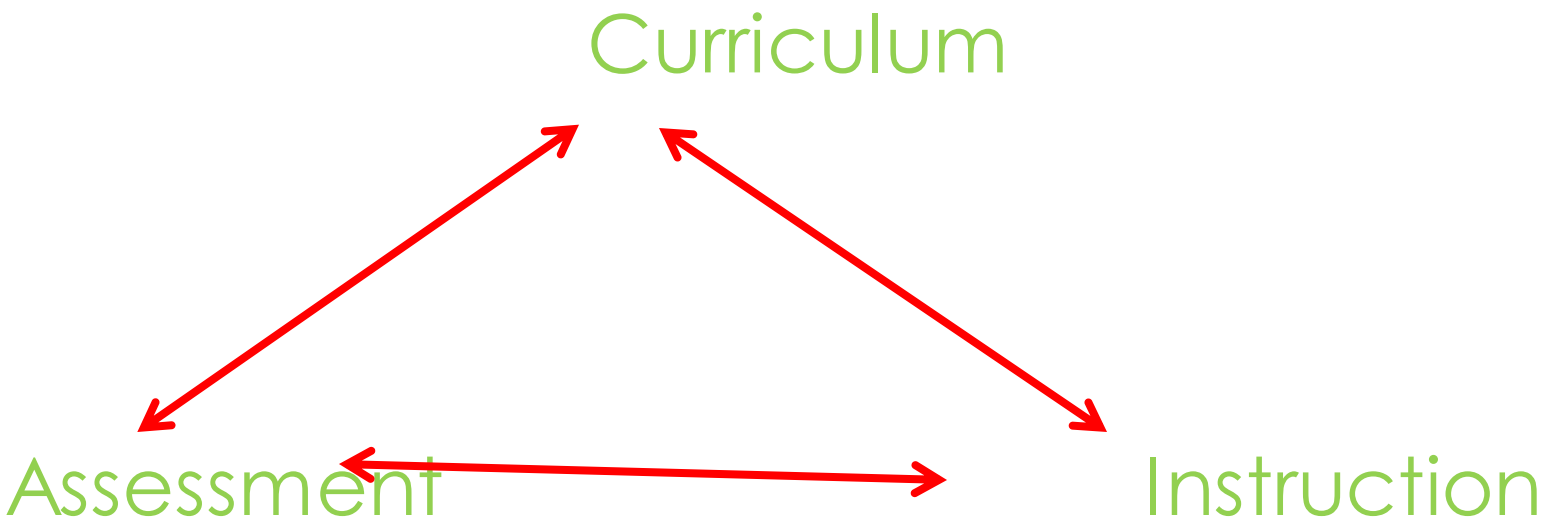
How Common is "Common"?

Overview of Assessment

Classroom Assessments	Common Assessments	District Level Assessments	External Assessments
			
Most Formative	More Formative	More Summative	Most Summative
Daily / Weekly	Unit	Monthly / Semester	Annual
Ongoing Student and Teacher Assessment	Collaboratively Developed and Curriculum Imbedded	Identify Groups of At-Risk Students Entrance and Exit Criteria	Ranks and Benchmarks
Quizzes, Essays, and Projects	 Pyramid of Interventions	DIBELS NWEA-MAP Gates-MacGinitie Programmatic Support	Terra Nova ITBS ACT ISAT

Research consistently shows that use of regular, high-quality **Formative Assessments** increases student achievement.

Making Connections



Standards-Based Common Assessments

- Step 1
  - Identify Standards being taught (GLCE/HSCE)
    - Unit Plans
    - Lesson plans
    - Pacing Charts
- Step 2
  - Rank order the Standards based on instructional intensity (time spent teaching)
    - Power Standards/ Power HSCE's/ Power GLCE's

Standards-Based Common Assessments

- Step 3
  - Develop a Table of Specifications
- Step 4
  - Select and write test items targeting identified Standards
- Step 5
  - Construct test according to Table of Specifications

Table of Specifications

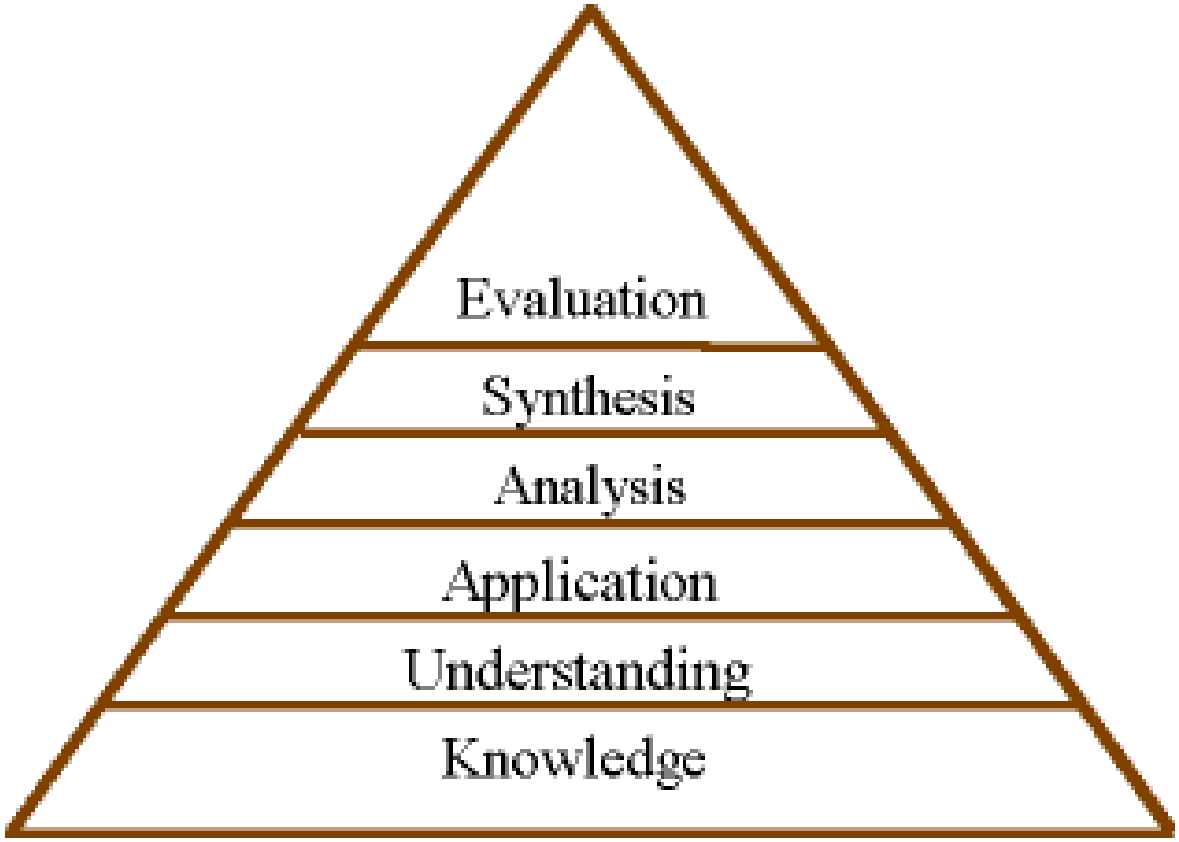
Curriculum Content	HSCE /GLCE	Level of Cognitive Demand						# of items in each area
		Knowledge	*Comprehension*	*Application*	*Analysis*	*Synthesis*	*Evaluation*	
Algebra A1: Expressions, Equations and Inequalities	A1.2.8 Solve an equation involving variables for a designated variable			X				3*
Total	N/A							

* Minimum of 3 items per HSCE needed to ensure test validity

Item Type

- Item type is determined by the outcome being measured
  - Bloom's Taxonomy of Educational Objectives
  - T/F, short answer, multiple choice, short response, extended response, performance tasks

Bloom's Taxonomy



Bloom's Taxonomy

- ***Knowledge***: arrange, define, duplicate, label, list, memorize, name, order, recognize, relate, recall, repeat, reproduce state.
- ***Comprehension***: classify, describe, discuss, explain, express, identify, indicate, locate, recognize, report, restate, review, select, translate,
- ***Application***: apply, choose, demonstrate, dramatize, employ, illustrate, interpret, operate, practice, schedule, sketch, solve, use, write.
- ***Analysis***: analyze, appraise, calculate, categorize, compare, contrast, criticize, differentiate, discriminate, distinguish, examine, experiment, question, test.
- ***Synthesis***: arrange, assemble, collect, compose, construct, create, design, develop, formulate, manage, organize, plan, prepare, propose, set up, write.
- ***Evaluation***: appraise, argue, assess, attach, choose compare, defend estimate, judge, predict, rate, core, select, support, value, evaluate.

Step 4:

Develop or Secure Items aligned with content expectations

Instructional Benefits of Developing Standards-Based Assessments

- Forces reflection of teaching practices
- Provides validation and accountability for how instructional time is spent
- Targets feedback for what information students are learning and identifies areas requiring re-teaching

Student Benefits for Administering Standards-Based Assessments

- Provides targeted feedback on student learning
- Establishes what students will be responsible for knowing on exams
- Provides students and teachers a context for discussing learning progress in the classroom

Question Stems

The "stem" of a multiple-choice item poses a problem or states a question.

- Write the stem as a single, clearly-stated problem. Direct questions are best, but incomplete statements are sometimes necessary to avoid awkward phrasing or convoluted language.

Poor Example

California:

a. Contains the tallest mountain in the United States

b. Has an eagle on its state flag.

c. Is the second largest state in terms of area.

*d. Was the location of the Gold Rush of 1849.

The Stem

- The stem is the foundation of the item. After reading the stem, the student should know exactly what the problem is and what he or she is expected to do to solve it. If the student has to infer what the problem is, the item will likely measure the student's ability to draw inferences from vague descriptions rather than his or her achievement of a course objective.

Question Stems

- The question should be stated as briefly as possible, avoiding wordiness and undue complexity. In higher-level questions the stem will normally be longer than in lower-level questions, but you should still be brief.

Avoiding Wordiness

Suppose you are a mathematics professor who wants to determine whether or not your teaching of the unit on probability has had a significant effect on your students. You decide to analyze their scores from a test they took before the instruction and their scores from another exam taken after the instruction. Which of the following t-tests is appropriate to use in this situation?

- *a. Dependent samples.
- b. Heterogeneous samples.
- c. Homogeneous samples.
- d. Independent samples.

Question Stems

- The question should be stated in *positive* form because students often misread negatively phrased questions.
- If you must write a negative stem, emphasize the negative words with underlining or all capital letters.

Avoiding Double Negatives

All of the following are correct procedures for putting out a fire in a pan on the stove except:

- a. Do not move the pan.
- *b. Pour water into the pan.
- c. Slide a fitted lid onto the pan.
- d. Turn off the burner controls.

Responses

- Order your answer choices from least to greatest (or greatest to least)

Logical Order Example

Numerical Example

a. 1939
b. 1940
c. 1941
d. 1942

Alphabetical Example

a. Changing *a from .01 to .05*.
b. Decreasing the degrees of freedom.
c. Increasing the spread of the exam scores.
d. Reducing the size of the treatment effect.

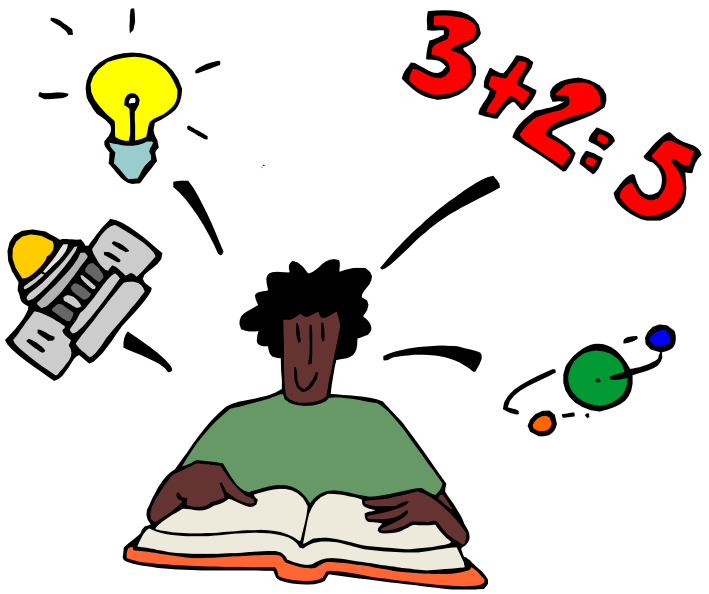
Sequential Example

a. Heating ice from -100°C to 0°C.
b. Melting ice at 0°C.
c. Heating water from 0°C to 100°C.
d. Evaporating water at 100°C.
e. Heating steam from 100°C to 200°C.

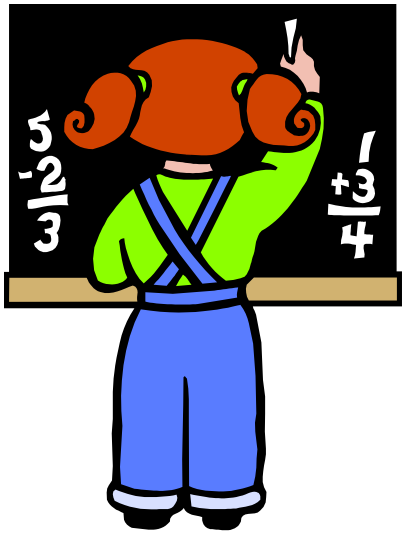
Research. Numerous studies indicate that items are easier when this guideline is violated

Responses

- Randomize the position of the correct responses. (All the answers should not be "C" – Avoid the "Abbacadabba" method)



Designing Distracters



- A. Provide ONE and only ONE correct answer (key).

Provide ONE and only ONE correct answer

Daney's bill at the local diner was $7.29. If she gave the clerk a $10 bill, how much change will she receive?

- A. $2.71
- B. 2 Dollars, 7 Dimes and 1 Penny
- C. 10 Quarters, 2 Dimes and 1 Penny
- D. 7 Dimes and 1 Penny

Designing Distracters

B. Include plausible options that demonstrate a student's level of understanding.

1. Consider using common misconceptions or errors as response options.
2. Avoid humorous or nonsensical response options.

Designing Distracters

- C. Use clear wording/vocabulary that is both age and grade-level appropriate

age and grade-level appropriate….. 3rd Grade?

- A pendulum consists of a sphere hanging from a string. What will happen to the period of the pendulum if the mass of the sphere is doubled? (Assume that the effects of air friction and the mass of the string are negligible, and that the sphere traces an arc of 20° in a plane as it swings.)
- a. It will increase.
- b. It will decrease.
- *c. It will remain unchanged.
- d. More information is needed to determine what will happen.

Designing Distracters

- D. Maintain a consistent or 'parallel' style, length, and visual display.

Maintaining a consistent or 'parallel' style, length, and visual display

Example –
Monopolies cause problems in a market system because they:

a. Create external costs
*b. Lead to higher market prices and under production due to a lack of competition.
c. Make large profits.
d. Are illegal

Designing Distracters

G. Have a colleague review the answer choices.

Test Items - Sources

- Texts or Other Resource Materials
- Item Banks
- Oakland Schools (TEA)
- Released Items (MEAP/ACT)
- ……
- Teacher Created

(Consider Copyright Issues! – Your librarian can help)

Let the development begin…

(Helpful if developed during the creation of your original curriculum documents.)

Step 5:

Administer Assessments

Step 5: Administer Assessments

Considerations

- State Testing Calendar (MEAP)
- District Calendar (Terra Nova …)
- School Calendar (Assemblies)
- Provide a Testing Window (Calendar)

Step 6: Data Analysis

Results by

- District
- Expectation/Standard
- Building
- Teacher
- Grade Level
- Student
- AYP Subgroups (ex. Male, Economically Disadvantaged)
- Educational Initiative (ex. New Program, CTE)

This is a critical Step!
So, plan ahead…

Disaggregation/Dissemination Issues

- Who will disseminate the data?
- Does the assessment system allow you to disaggregate the data? If not, how will it be done?
- Does your Common Assessment data mirror your state testing data?
- What will occur if AYP subgroup issues are occurring in one building? One teachers class?

Instructional Implications

Results by District –

- May point to issues within the districts curriculum as it addresses a particular content expectation
- May point to a need for district wide PD

Instructional Implications

Results by Expectation –

- May point to issues within the districts curriculum as it addresses a particular content expectation
- May point to a need for district wide PD

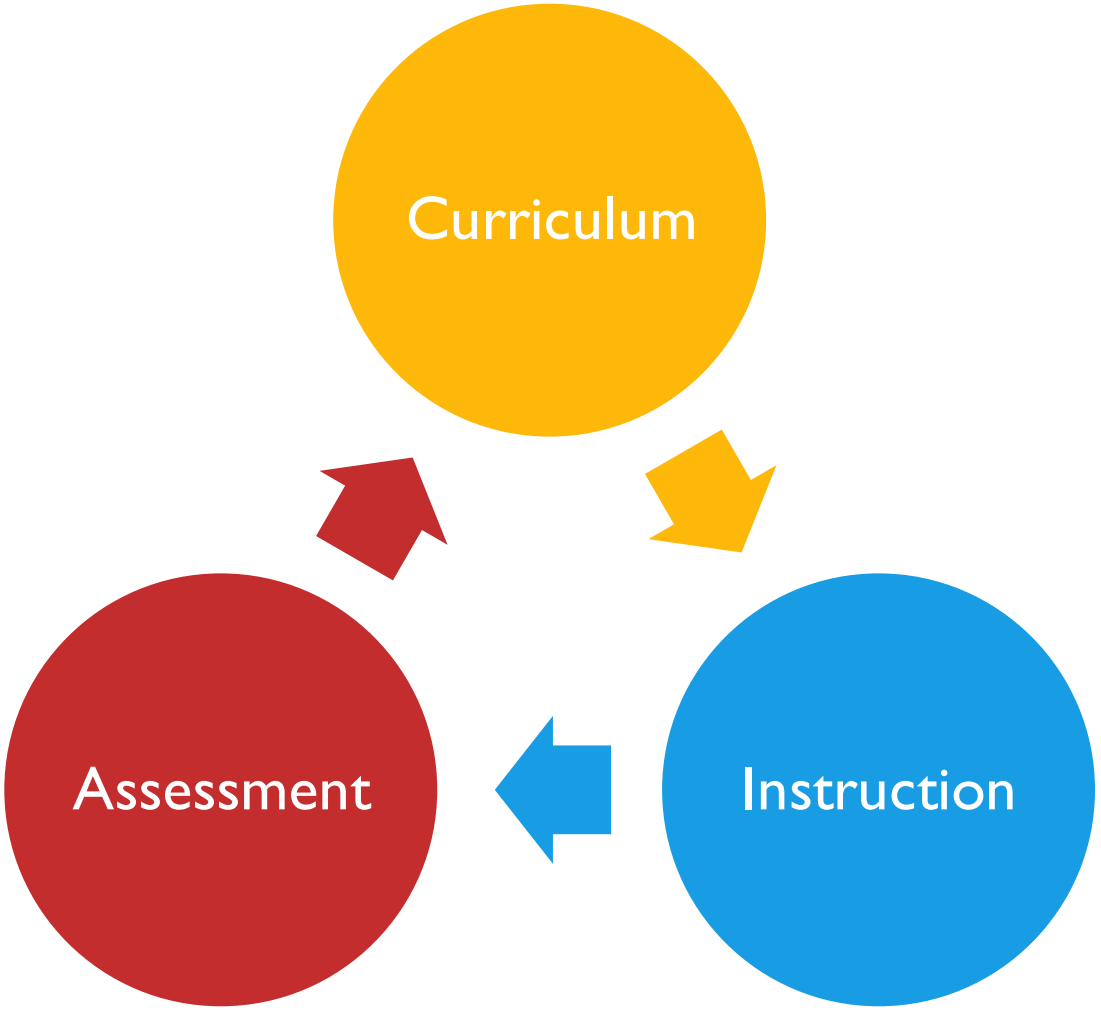
Results by Building

- May point to issues within the buildings implementation of the districts curriculum, as it addresses a particular content expectation
- May point to a need for building wide PD

Results by Teacher

- May point to issues within the teachers implementation of the districts curriculum as it addresses a particular content expectation
- May point to a need for PD

Step 7: Instructional Implications



Instructional Implications

- Forces reflection of teaching practices
- Provides validation and accountability for how instructional time and money is spent
- Targets feedback for what information students are learning and identifies areas requiring re-teaching

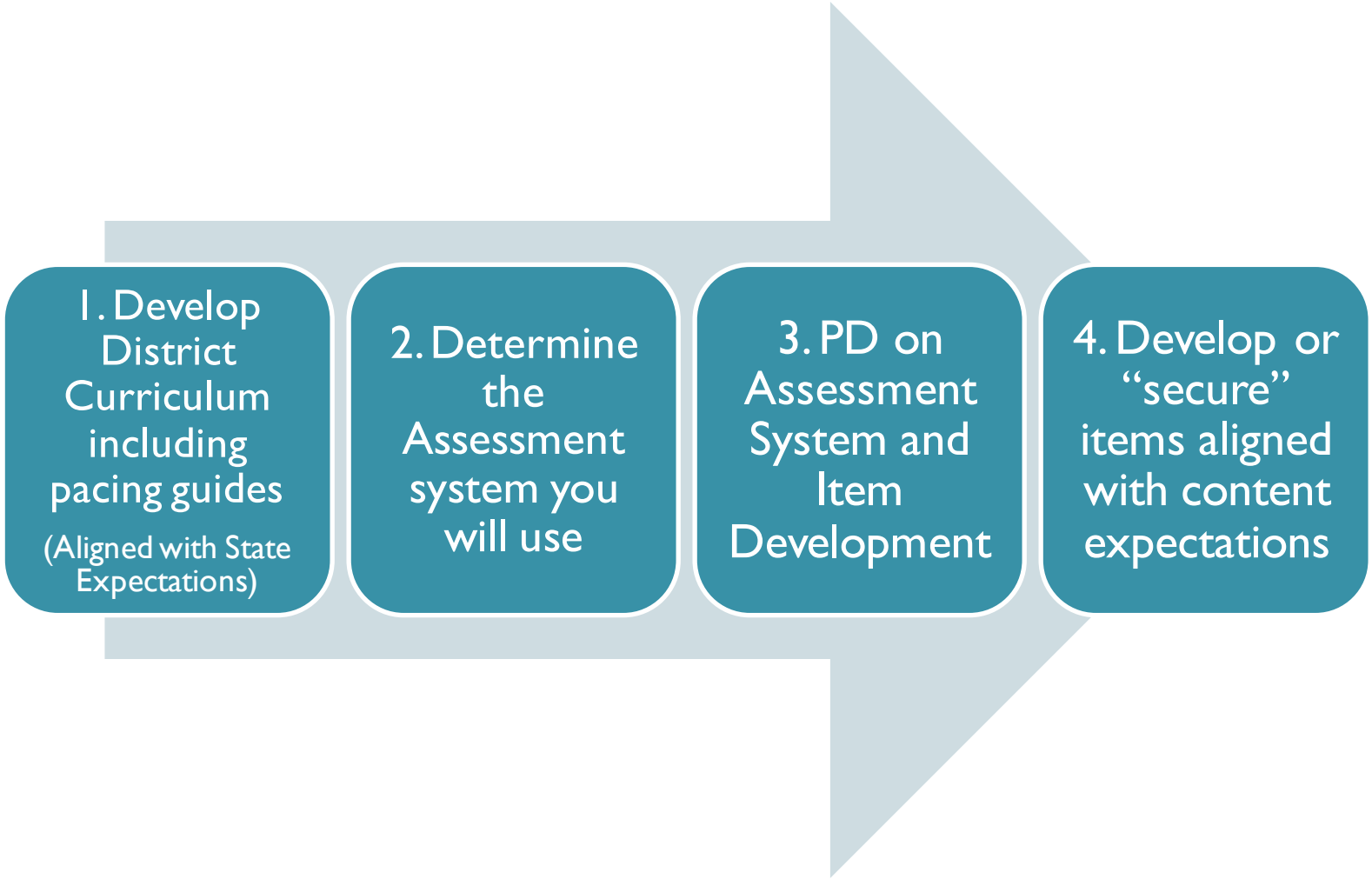
Instructional Implications

- Provides targeted feedback on student learning
- Establishes what students will be responsible for knowing on exams
- Provides students and teachers a context for discussing learning progress in the classroom

Data dissemination/disaggregation issues

- What does data say about the district, a program, building or teacher?
- Will the data be used for non-instructional purposes?

Timeline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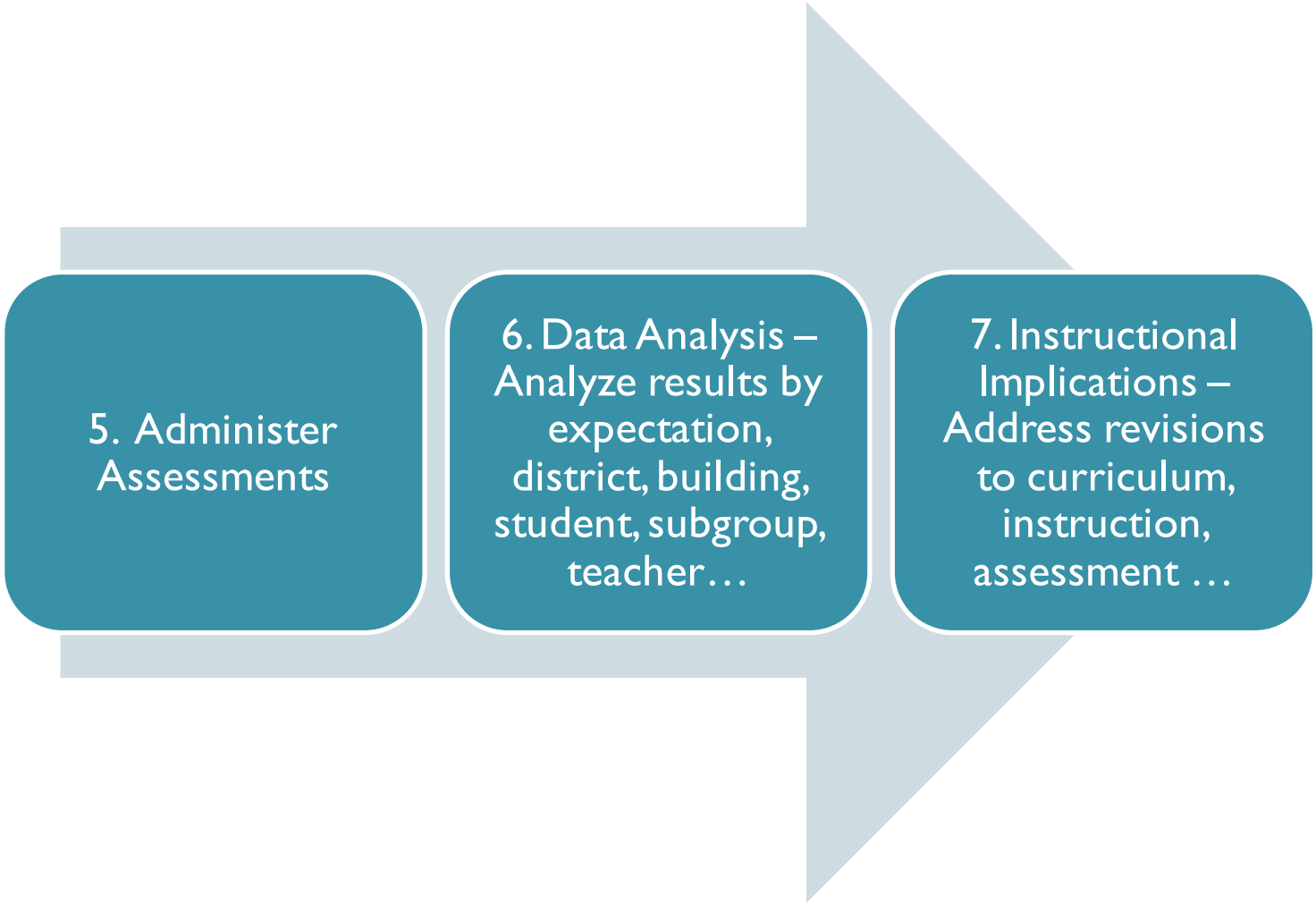
3. PD on Assessment System and Item Development
4. Develop or "secure" items aligned with content expectations

Timeline


5. Administer Assessments
6. Data Analysis – Analyze results by expectation, district, building, student, subgroup, teacher…
7. Instructional Implications – Address revisions to curriculum, instruction, assessment …

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