Using Data to Guide Instruction

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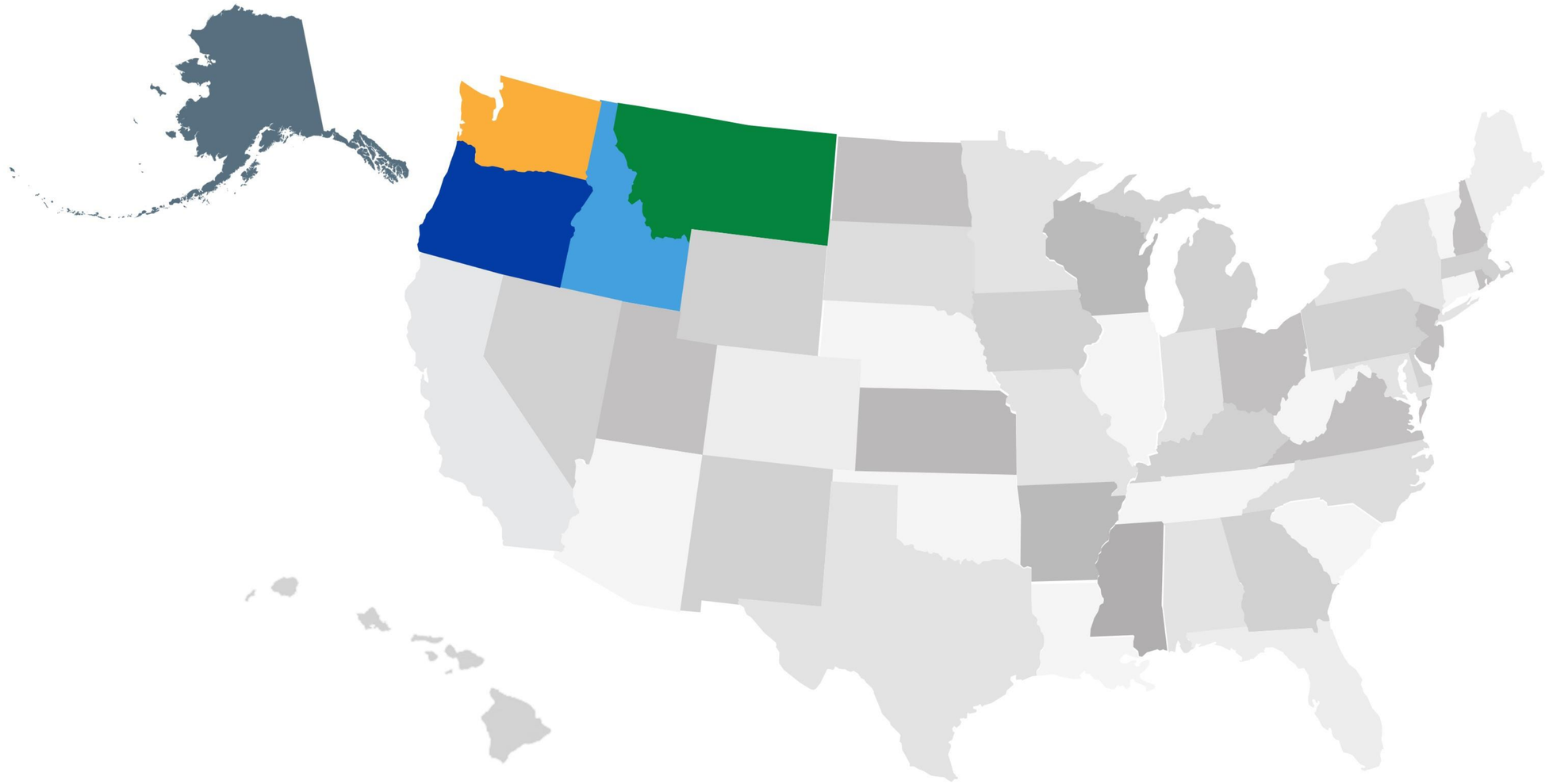


Agenda

- Introduction
- Why we use data
- Standardized vs. formative data
- Overview of data inquiry cycle
- Collecting the most appropriate data most efficiently
- Next steps in the cycle
- Closing

Goal and Objectives

To reinforce teachers' understanding of collecting and using student performance data to guide their instructional design

- Understand the best uses for each type of data
- Become familiar with how to collect the most appropriate data in the most efficient way
- Engage with the steps to take to analyze and interpret the data once collected

Why We Use Data

Data Literacy for Teaching

"The *ability* to transform information into *actionable instructional* knowledge and practices."

Source: Gummer & Mandinach, 2015, p.2

What's Our Focus?

- Improving instruction
  - We must ensure we collect appropriate data
  - *Collect important data and ensure everyone understands why it's important*

Important Shift

- Shift from:

  “Data for accountability”

  ↓

  “Data for continuous improvement”

Source: Data Quality Campaign, 2017

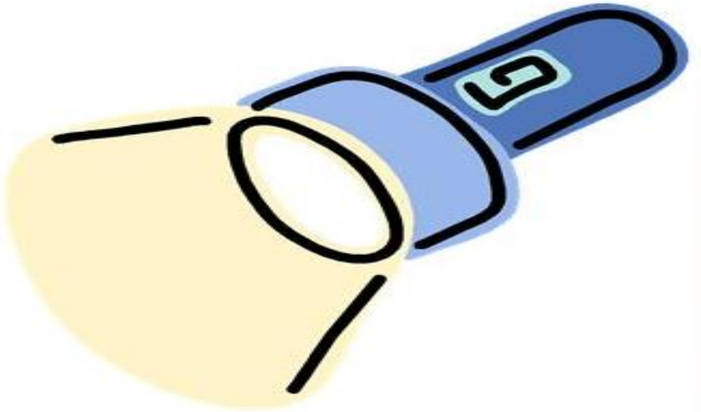
Metaphor

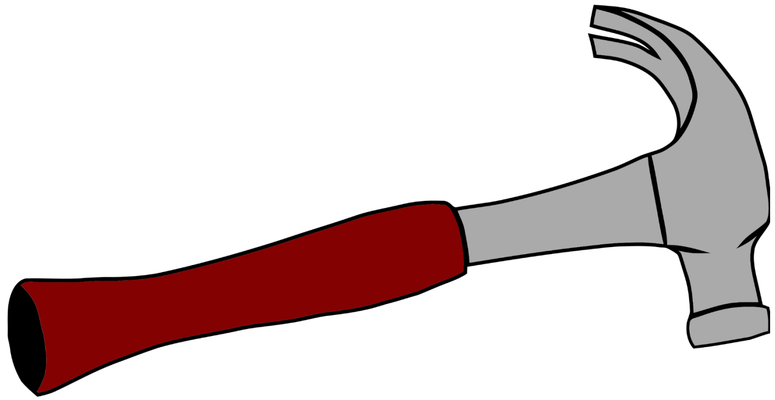
- Data are:

  A flashlight (*effectiveness)*

- Data are NOT:

  A hammer (*evaluation*)





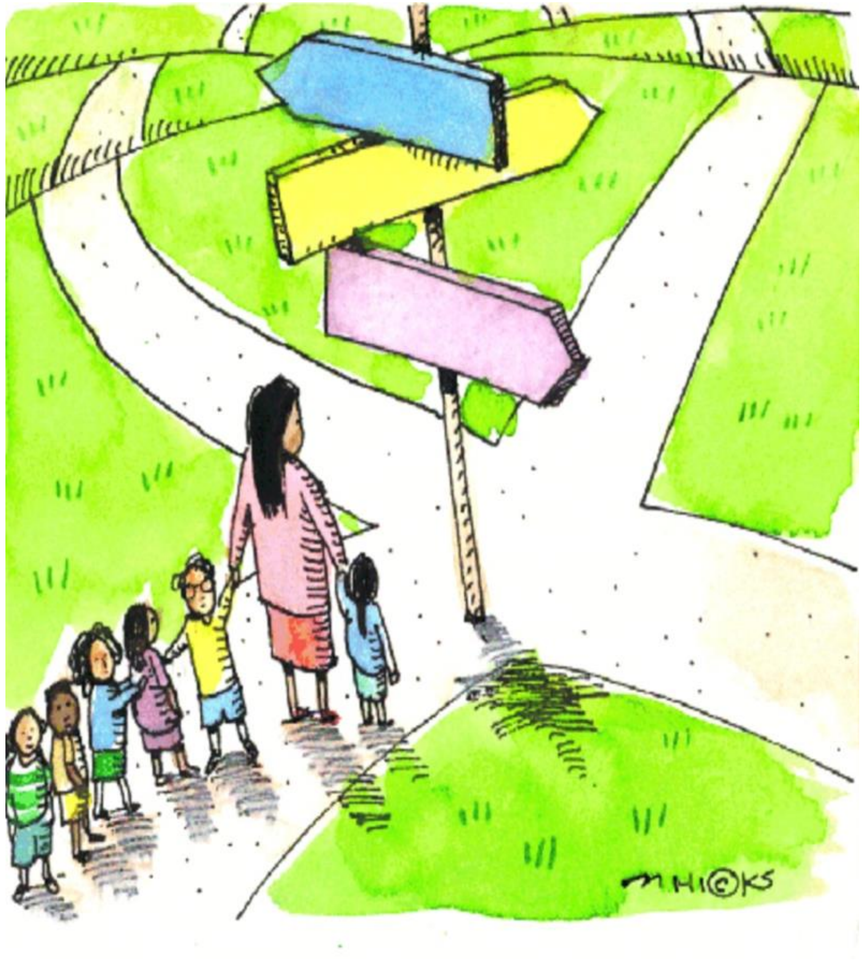
Source: Data Quality Campaign, 2017

What Informs Our Practice?

- Data literacy combines understanding of data with:
  - Standards
  - Disciplinary knowledge and practices
  - Curricular knowledge
  - Pedagogical content knowledge
  - An understanding of how children learn

Source: Gummer & Mandinach, 2015

Crossroads



Where is the learner going?

Where is the learner now?

Where to next?

Source: Brookhart, 2017

Acting on Data

Providing Feedback	Making Instructional Adjustments
	

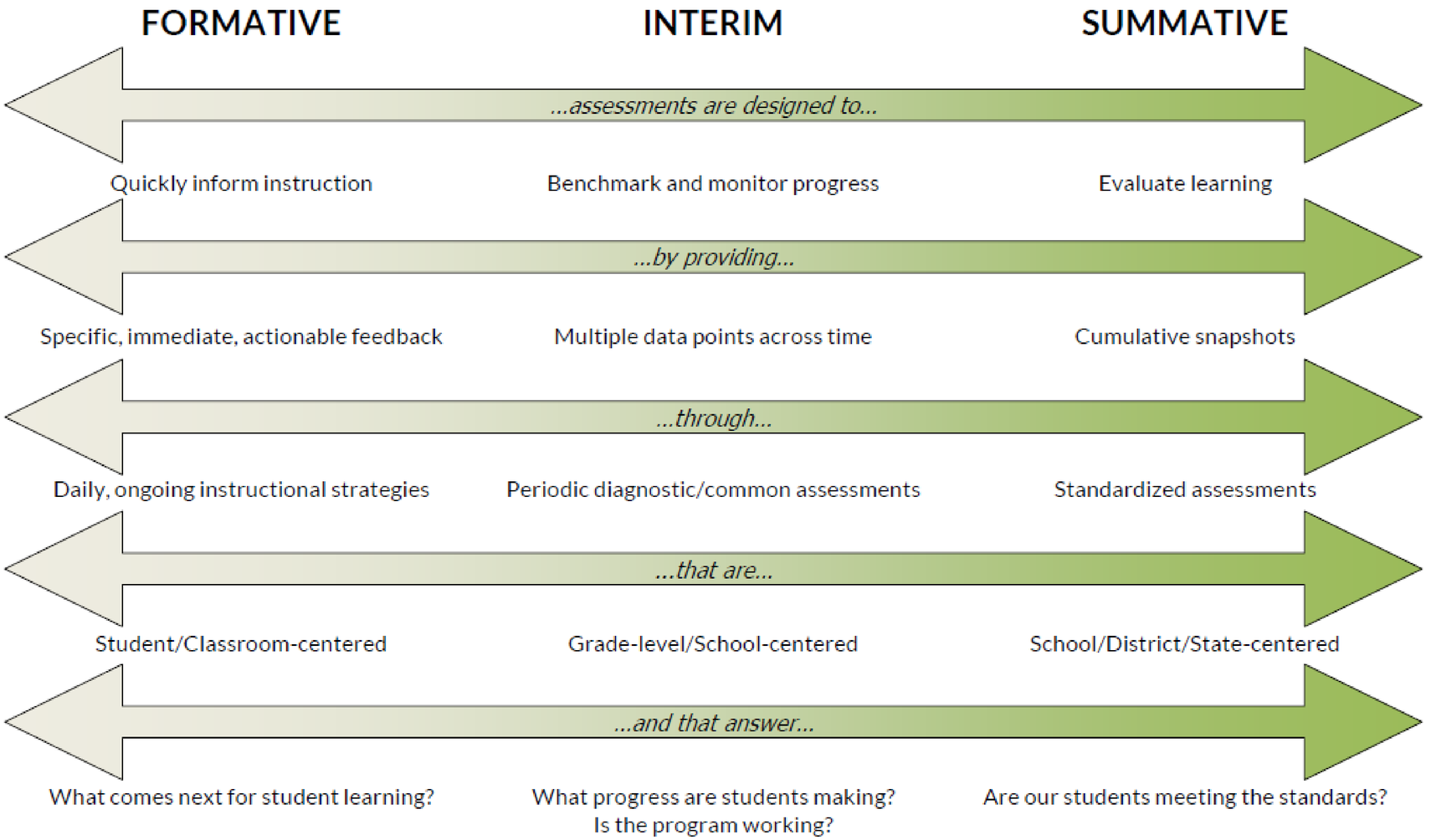
When Can We Act on Data?

In the Moment	After the Fact
	Some time later...

Standardized vs. Formative Data

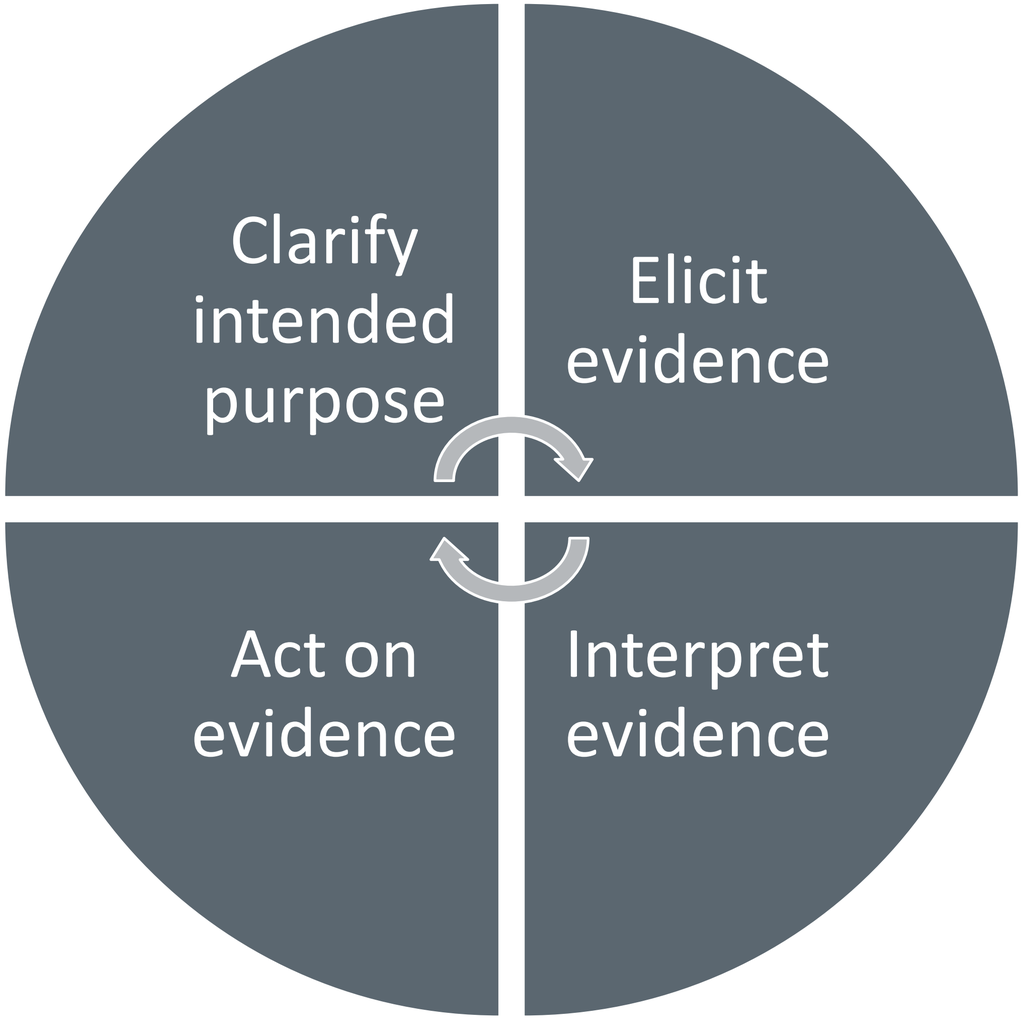
Balanced Assessment System

By Type: *What are the differences between assessment types within a balanced system?*



Source: Wisconsin Department of Public Instruction, 2015

A Process of Formative Assessment



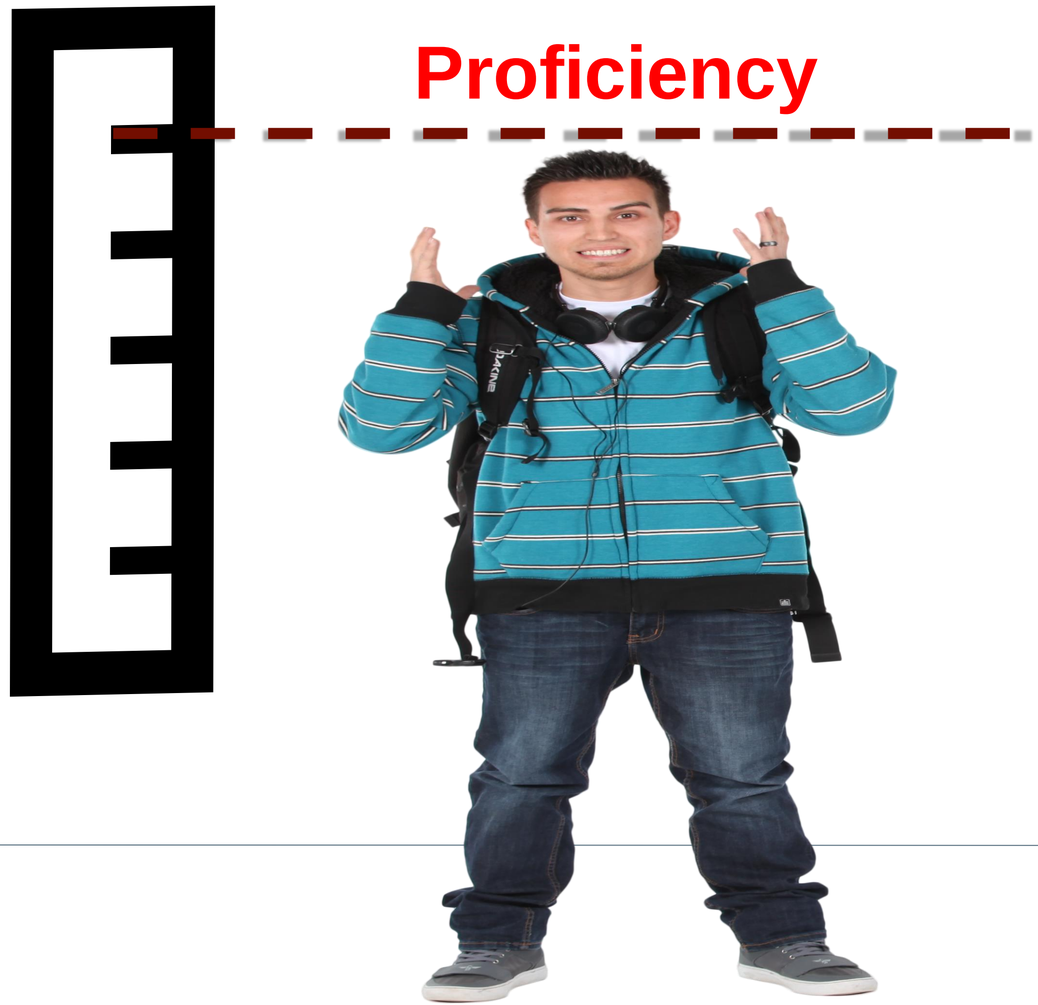
Why Standardized Data?

- Objectivity
  - Similar questions
  - Non-biased scoring
- Comparability
  - Comparisons to state and national like peers
- Accountability
  - Comparisons on a “proficiency” scale
  - Comparisons to the normed group
  - Student growth

Source: Churchill, 2015

Criterion-Referenced Standardized Scores

Compared against a predetermined standard



Norm-Referenced Standardized Scores

Compares student performance against performance of like peers

Standardized Scores

Criterion-referenced

- ***Scale scores:*** Calculated based on the difficulty of questions and the number of correct responses
  - Because the same range is used for all students, scaled scores can be used to compare student performance across grade levels
- ***Leveled scores:*** Level 1, Level 2, etc.
- ***General cut scores for a multi-tiered system of support (MTSS):***
  - Tier 1 > 40th percentile
  - Tier 2 = 21st though 39th percentile
  - Tier 3 < 20th percentile

Source: Understanding Standardized Test Scores, 2015

Standardized Scores

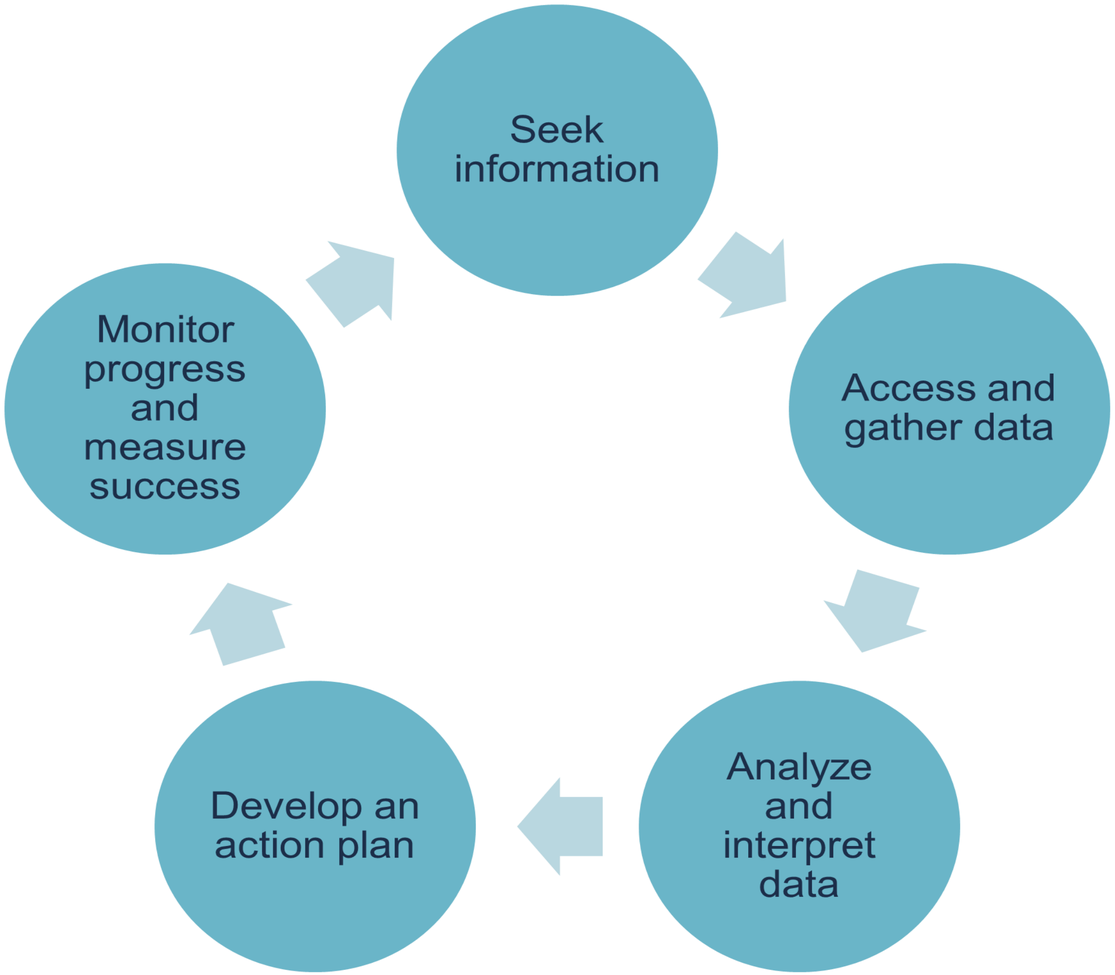
Norm-referenced

- ***Percentile:*** Percentage of like test-takers who scored the same or lower; intervals are not equivalent
- ***Normed curve equivalent:*** Like percentile rank but based on an equal interval scale
- ***Student growth percentile:*** Compares a student's growth to that of their academic peers nationwide
- ***Grade equivalent:*** Represents how a student's test performance compares with that of other students nationally
  - For example, a grade 5 student with a grade equivalent of 7.6 performed as well on Star Math as a typical grade 7 student after the sixth month of the school year

Source: Understanding Standardized Test Scores, 2015

Overview of Data Inquiry Cycle

Data Inquiry Cycle: What



Source: Bocala, Henry, Mundry, & Morgan, 2014

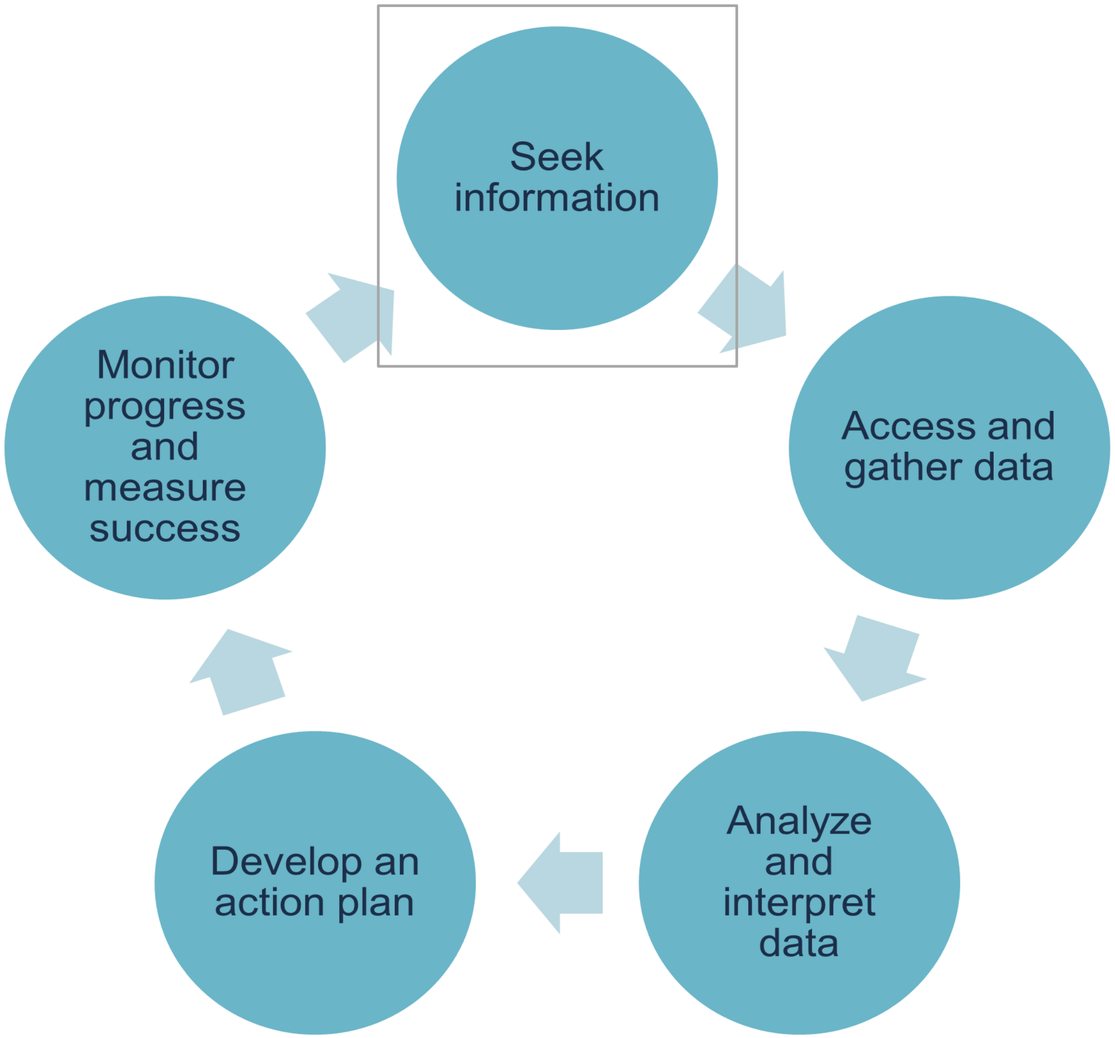
Data Inquiry Cycle: Why

- Helps build capacity for school improvement
- Helps teams focus on concrete issues over time
  - Note: The expectation is that these conversations will occur in teams and that teams are purposefully selected to represent all the needed expertise (e.g., content areas, data skills) and the voices that ensure equity
- This is research-based—the research is available upon request

Source: Bocala et al., 2014

Collecting the Most Appropriate Data Most Efficiently

Data Inquiry Cycle: Step 1



Source: Bocala et al., 2014

Data Inquiry Cycle: Step 1 (Reflection)

- Seeking information = Identifying the key challenges you are facing
- Practice
  - Individually:
    - In the Notes document, under Step 1, jot down key challenges related to student learning that you are facing in your classroom
    - Prioritize the most important challenge to address
    - For each, jot down what you would like to learn more about

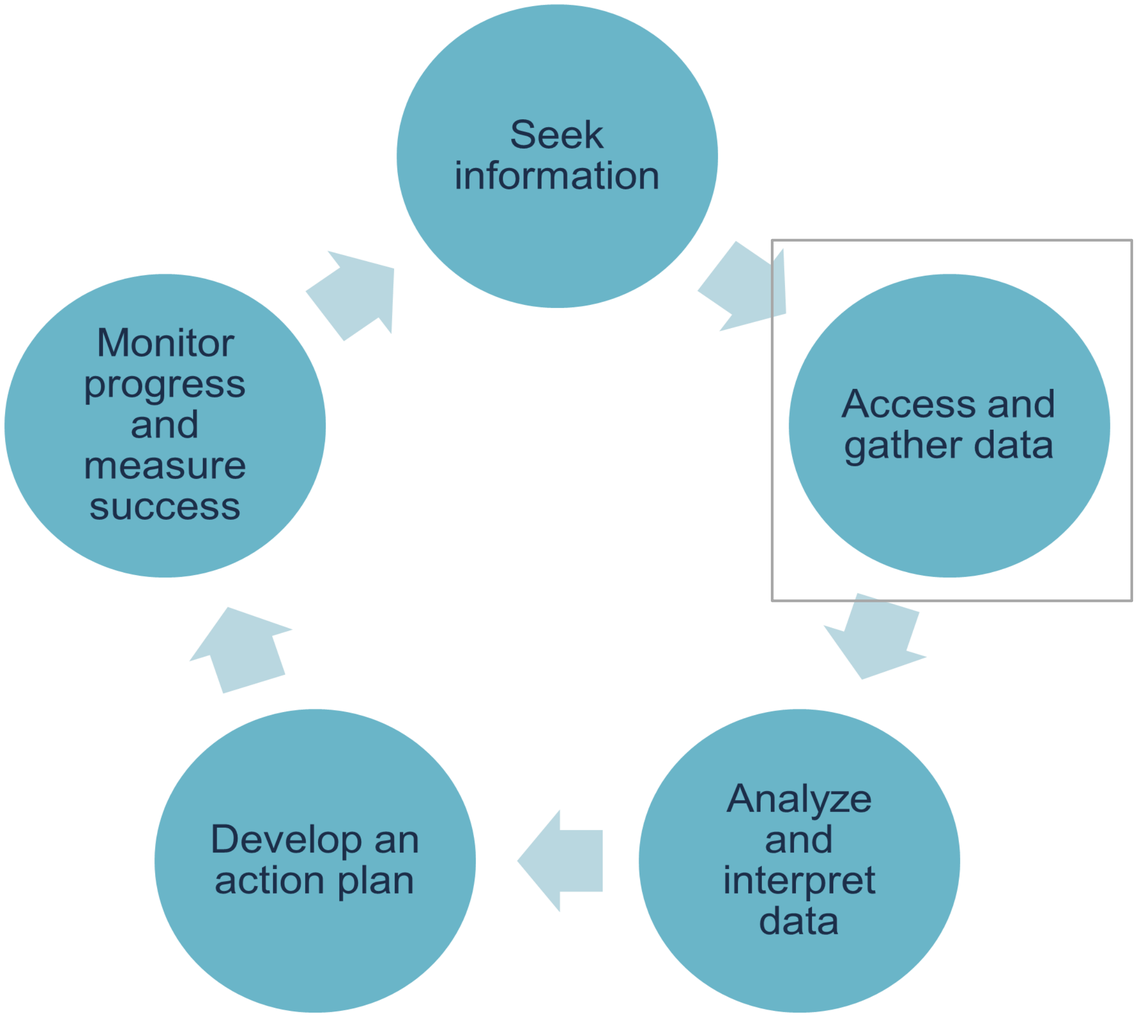
Source: Bocala et al., 2014

Data Inquiry Cycle: Step 1 (Reflection)

- Seeking information = Identifying the key challenges you are facing
- Practice
  - Type one challenge into the chat box, including why it is important to address and what you would like to learn about it

Source: Bocala et al., 2014

Data Inquiry Cycle: Step 2



Source: Bocala et al., 2014

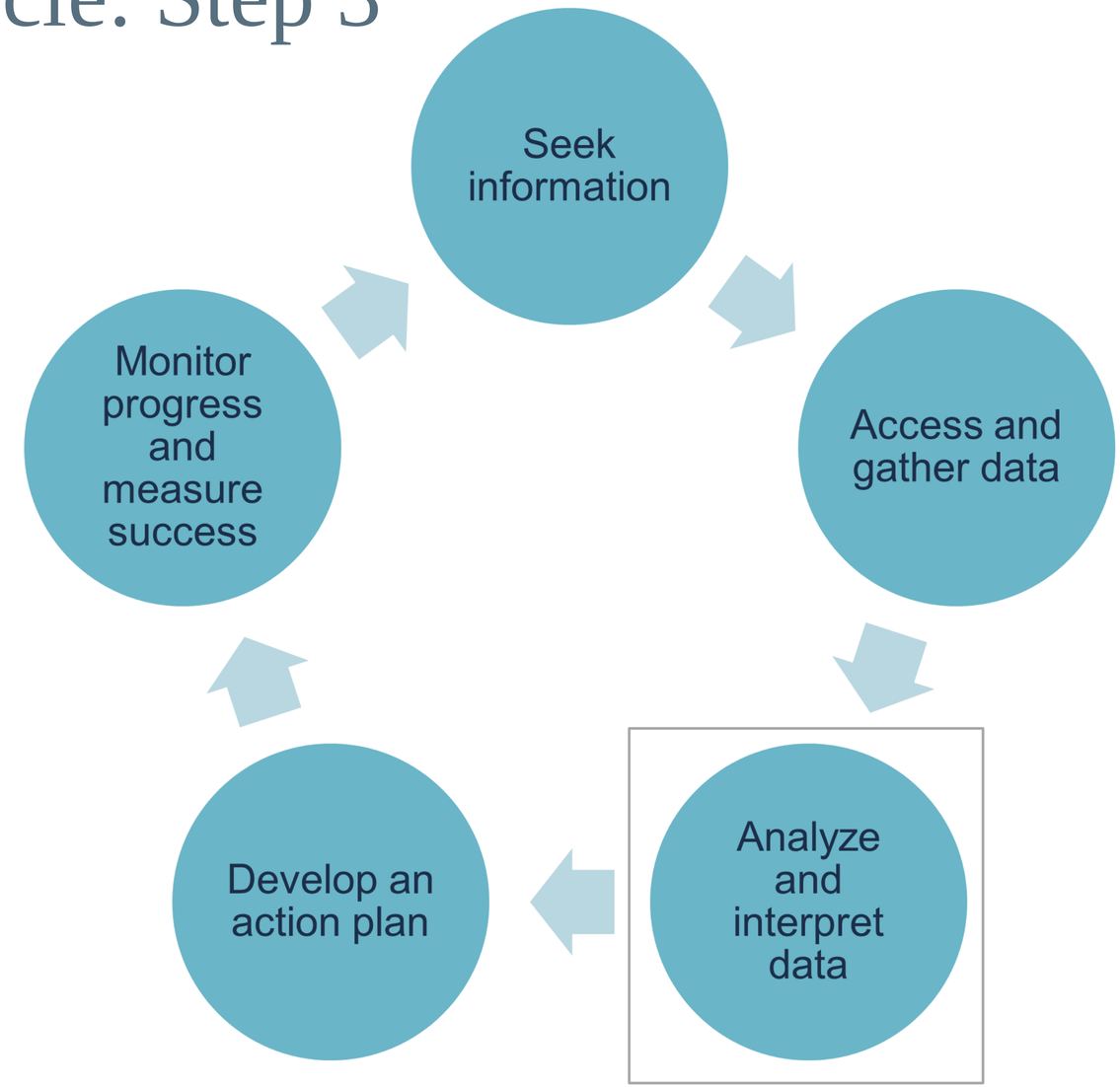
Data Inquiry Cycle: Step 2 (Directions)

- When you access and gather data, you:
  - Identify the data you have
  - Answer questions
    - What is included in the data?
    - What is missing that would be useful?
    - Is it possible to obtain what is missing? If so, how?
    - Are there issues with the quality of the data?
  - Document your findings by filling out Step 2 in the Notes document

Source: Bocala et al., 2014

Next Steps in the Cycle

Data Inquiry Cycle: Step 3



Source: Bocala et al., 2014

Data Inquiry Cycle: Step 3 (Five Stages)

Source: Bocala et al., 2014

Data Inquiry Cycle: Step 3

Examine student beginning-of-year Istation data

See that 60 percent of the class appeared on the priority report for alphabetic decoding

Set a goal to reduce by 66 percent the number of students on the priority report for alphabetic decoding by Thanksgiving break

Identify the COVID-19–related gap in learning as one root cause for students demonstrating a lack of proficiency

Collaborate with MTSS team members to further diagnose the causes of the learning challenges and appropriate supports

Source: Bocala et al., 2014

Data Inquiry Cycle: Step 3 (Five Stages)

Source: Bocala et al., 2014

Analyze the Data: Asking Factual Questions

- What do you observe?
- What patterns do you notice?
- Is anything you see surprising?

Tip for back home: At this stage, it is helpful to go visual.

- For guidance, see slides 38–41 in https://ies.ed.gov/ncee/edlabs/regions/northwest/pdf/data-collection-training2-slides.pdf
- See also National Forum on Education Statistics (2016)
- Adapt Handout 4 from https://ies.ed.gov/ncee/edlabs/regions/northwest/pdf/data-collection-training2-handout.pdf to your questions of interest

Sources: Bocala et al., 2014; Kekahio & Baker, 2013

Data Inquiry Cycle: Step 3 (Five Stages)

- Analyze the data
- Interpret the data
- Specify a challenge
- Set a goal
- Identify root causes

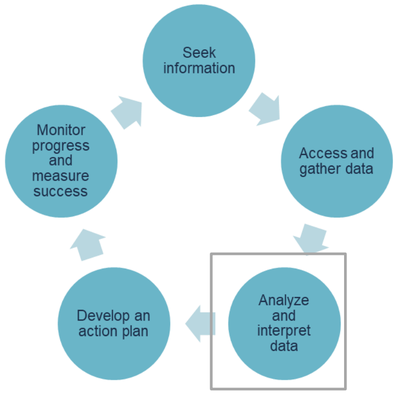
Source: Bocala et al., 2014

Interpret the Data: Initial Guiding Questions

- What can you infer about the situation?
    - What are strengths?
    - What are challenges/needs?
- What explanations do you have?
- What questions does this raise?
- What additional data would be helpful?
- Do you have any other observations?
- What assumptions are you making?

Sources: Bocala et al., 2014; Kekahio & Baker, 2013

Data Inquiry Cycle: Step 3 (Five Stages)



- Analyze the data
- Interpret the data
- Specify a challenge
- Set a goal
- Identify root causes

Source: Bocala et al., 2014

Specify a Challenge

This is when you would prioritize the challenges you identified earlier

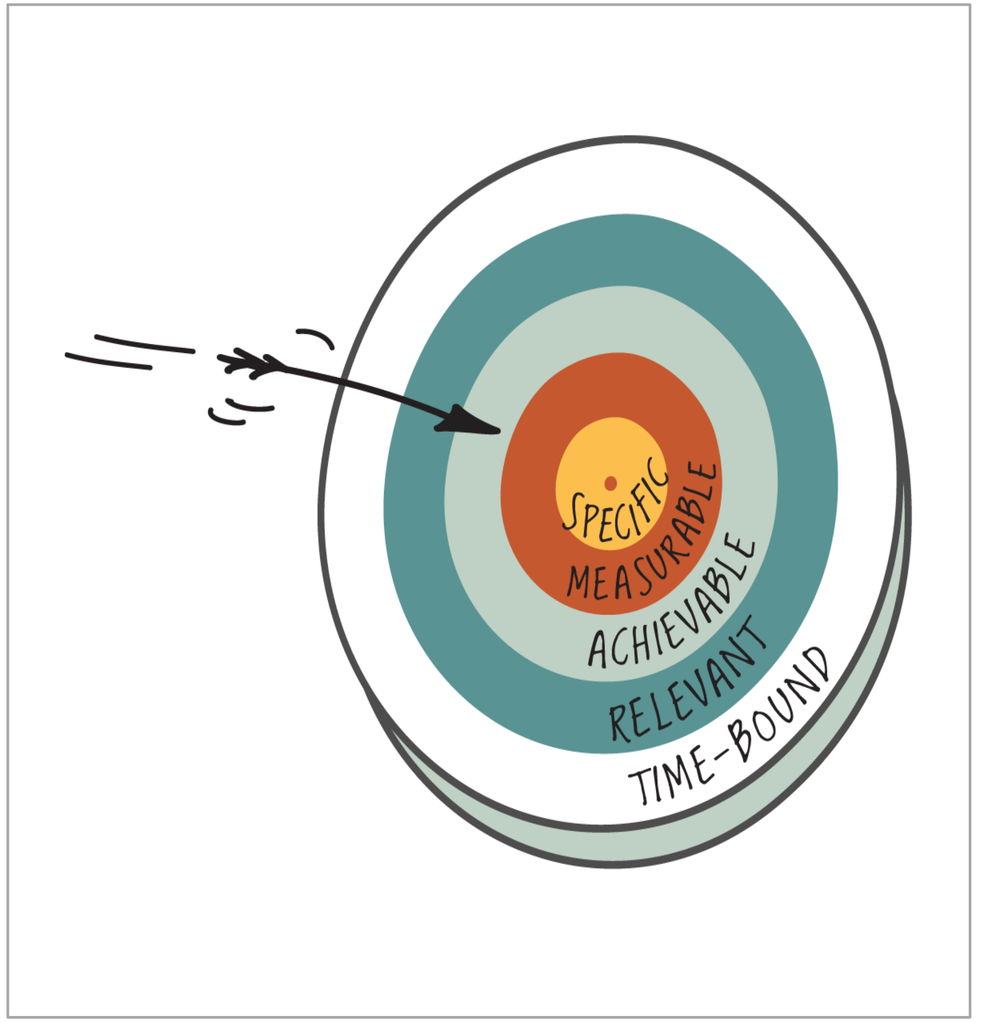
- What is most important?
- What is most urgent?
- What is actionable now?

Data Inquiry Cycle: Step 3 (Five Stages)

- Analyze the data
- Interpret the data
- Specify a challenge
- Set a goal
- Identify root causes

Source: Bocala et al., 2014

Set a Goal

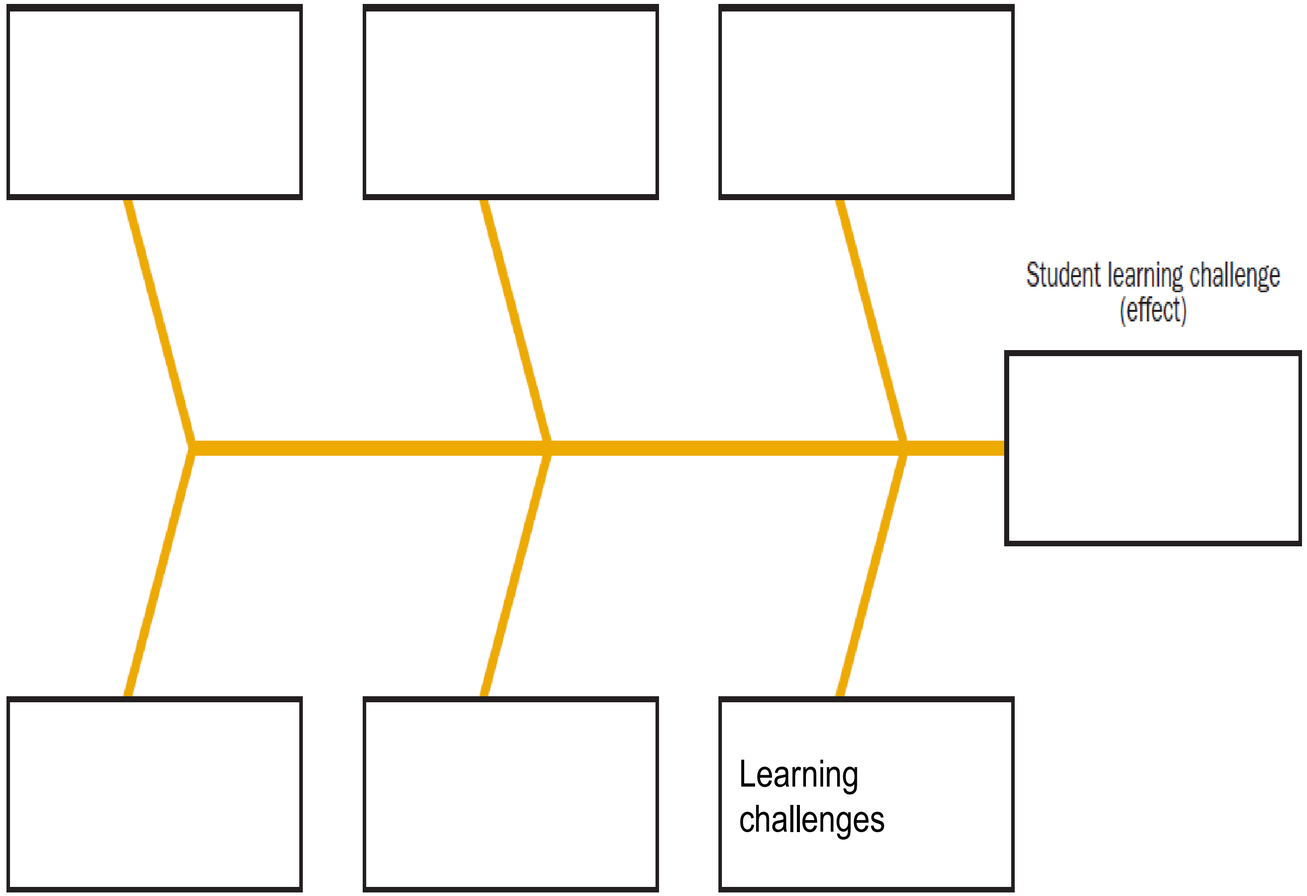


Data Inquiry Cycle: Step 3 (Five Stages)

- Analyze the data
- Interpret the data
- Specify a challenge
- Set a goal
- Identify root causes

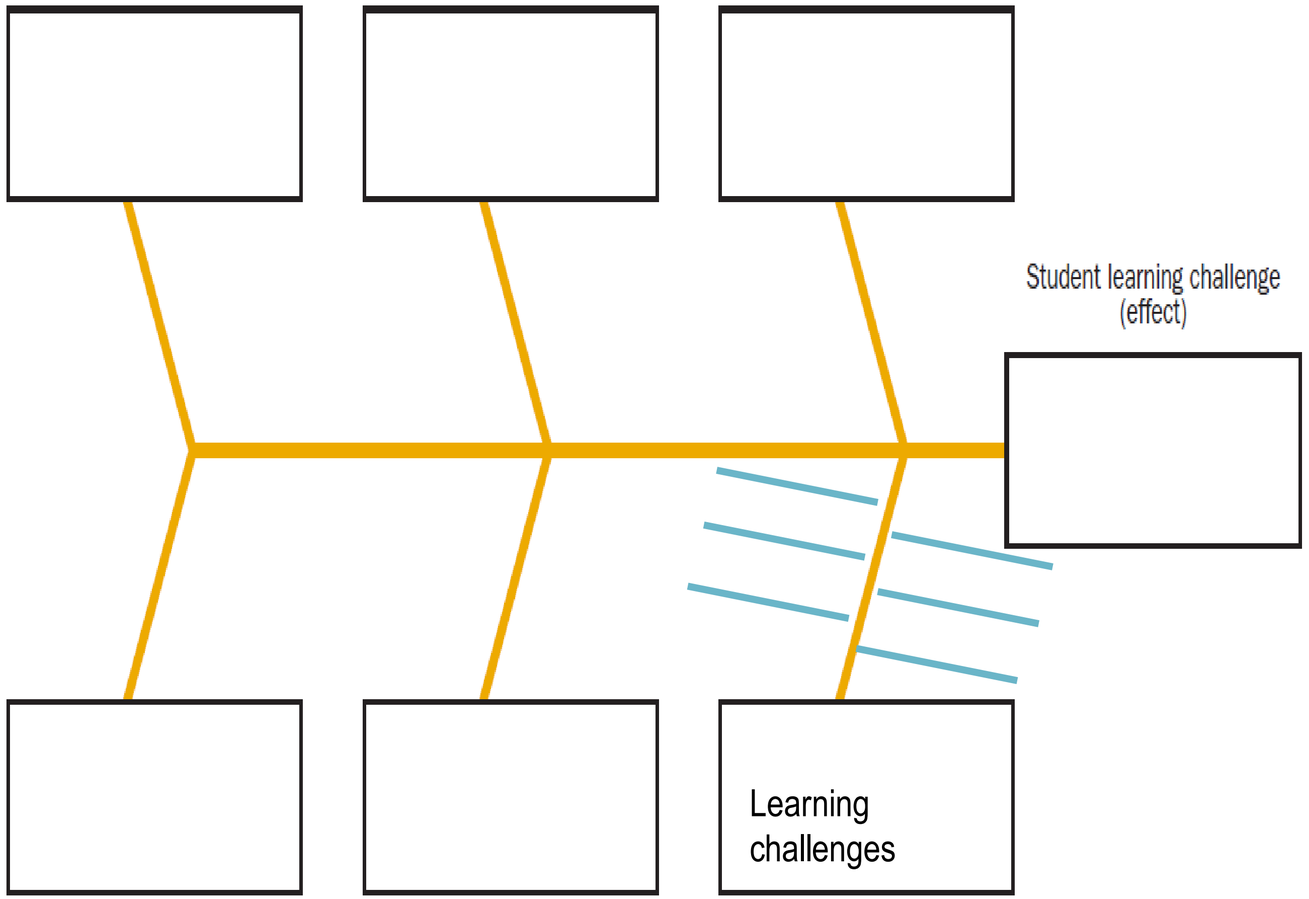
Source: Bocala et al., 2014

Identify Root Causes: Categories



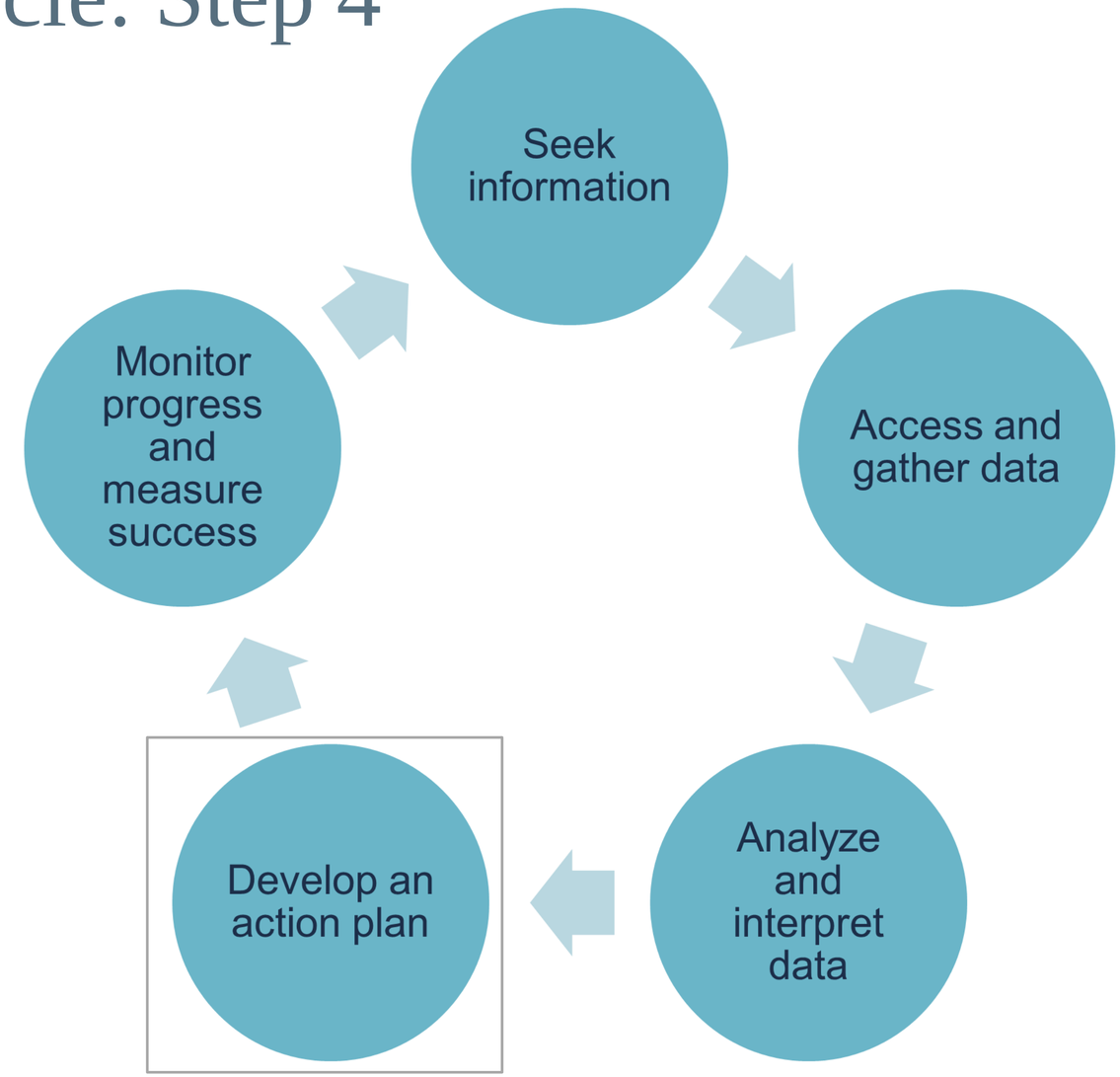
Source: Bocala et al., 2014

Identify Root Causes: Subcategories



Source: Bocala et al., 2014

Data Inquiry Cycle: Step 4



Source: Bocala et al., 2014

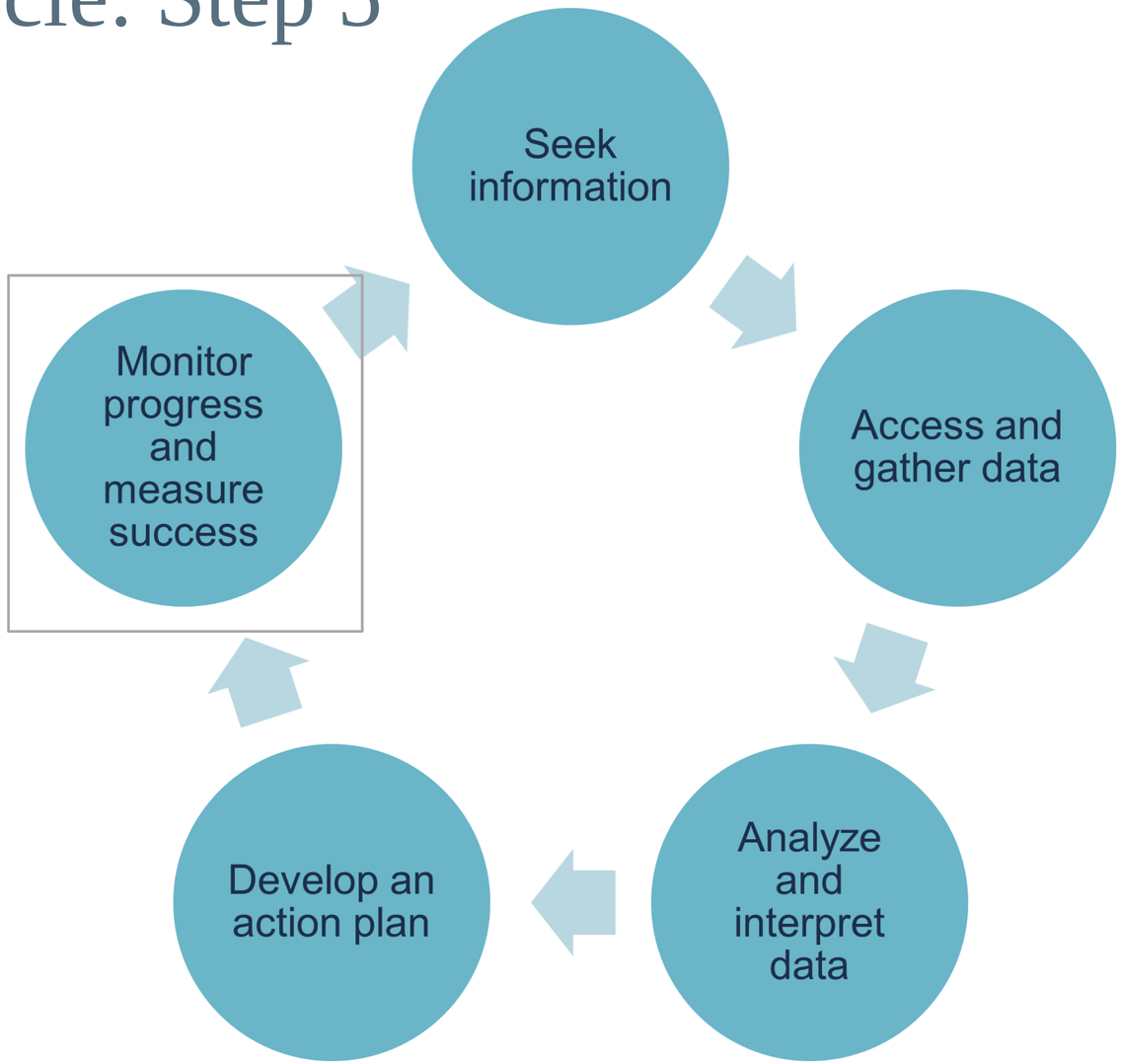
Guiding Questions for Action Planning

- What action steps can help us address key root causes?
- Where can we find evidence-based ideas?
  - What Works Clearinghouse
  - Ask A REL
- What could we plan for this summer and implement in the fall?
- Why this choice?
- How does this fit in our district/school plan?
- What are the steps to make this happen?
- What do we prioritize?
- How do we sequence steps?
- Who will do what? When?
- What resources do we have?

For example action-planning templates, see Template 6 ("Developing an action plan: Organizing the team for action") in Kekahio & Baker (2013) or the work plan template from the U.S. Agency for International Development

Sources: What Works Clearinghouse, https://ies.ed.gov/ncee/wwc/, retrieved June 30, 2020 and Regional Educational Laboratory Program, https://ies.ed.gov/ncee/edlabs/regions/northwest/askarel/, retrieved June 30, 2020.

Data Inquiry Cycle: Step 5



Source: Bocala et al., 2014

Monitoring Progress: Basic Questions

For each action step, consider:

- How will we know it was done?
- How will we know it was done well?
  - How effectively has the challenge been resolved and the cause(s) addressed?
  - What new concerns have arisen?
  - Should we continue with our action plan or choose a new area of focus?
- What data do we need to answer these questions?
- When will we meet to answer these questions and reflect?

Sources: Bocala et al., 2014; Kekahio & Baker, 2013

Closing

Closing

- Session summary
- Next steps

Contact Us

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