

This resource has been designed as a step-by-step tool for educators interested in ways to use data to inform their instructional practice. This tool can be used by individuals or teams to guide the identification of a problem statement, selection of data sources, data analysis, action-planning, and adjustments to practice.

Depending on your experience working with data, you may choose one step to focus on or follow the full process from beginning to end. Each step in the process includes a series of questions to consider and guidance on how to facilitate meaningful and focused conversations with colleagues about data.

There is no right kind of data to use for this process; however, we recommend starting with data that exists within your sphere of influence. For example, looking at school-wide data may provide some interesting insights about the context in which you are teaching, but may be difficult to influence at the classroom level. Instead, prioritizing data related to what's happening in your own classroom (e.g., your own students' assessment scores or classroom observations) can yield more meaningful and actionable insights that can be used to inform instructional adjustments.

The process is as follows:



## GETTING STARTED: IDENTIFY A PROBLEM STATEMENT OR GUIDING QUESTION

It can be helpful to brainstorm some possible questions you have about student achievement, instructional practice, or classroom conditions conducive to learning. This initial brainstorm can help you to articulate a problem statement or guiding question that will help direct your data inquiry process.

### Questions to consider:

- What do you want to better understand about your students' needs or performance in your classroom?
- What do you wonder about your own instructional practices or classroom environment?
- What assumptions do you have about student learning in your classroom that you might want to test or verify?

### Example Brainstorm

- A lot of students did poorly on the last unit assessment; are there patterns in the items they got wrong?
- How do my students with IEPs do compared to those without IEPs?
- Some students consistently do not complete assigned homework. I assume this negatively impacts how they do on unit assessments.

### Example Problem Statement

Many students performed poorly on the last unit assessment. Which topics did students most frequently struggle with, and to what extent do outcomes vary across different student groups?

### Your Brainstorm

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### Your Problem Statement

## CHOOSING YOUR DATA SOURCES

Once you have identified the problem statement or guiding question you want to investigate further, the next step is to identify the specific data source(s) to review. While standardized testing data can serve as a valuable tool for understanding student achievement trends in our schools, they may not always provide educators with the real-time data necessary to make day-to-day decisions about how to adjust instruction to best meet the needs of students. There are, however, a wide range of other data that educators are collecting everyday that can provide immediate and valuable information about students that informs and influences how we teach, as well as where and what we review, readjust, and reteach.

### Data Sources to Consider

Classroom data such as:	Standardized test scores such as:	Student characteristics such as:
<ul style="list-style-type: none"><li>• Formative assessments</li><li>• Summative assessments</li><li>• Student work</li><li>• Classroom observations</li><li>• Student surveys or feedback</li></ul>	<ul style="list-style-type: none"><li>• State assessments</li><li>• SAT scores</li><li>• AP scores</li></ul>	<ul style="list-style-type: none"><li>• Demographics</li><li>• Previous academic performance or course-taking patterns</li><li>• Non-academic data</li></ul>

### Questions to consider:

- What data do we have and what data can we get?
- What data will best help me understand the problem I want to solve or the question I want to answer?
- Do I need multiple data sources to answer my question?
- What will be feasible to examine? What time or resources will be needed to collect, review, and analyze this data?
- How might I disaggregate my data to examine whether my instruction needs to be adjusted for particular student groups?

#### Example Sources

- Unit assessment test scores
- Student demographic information (gender, IEP status, race or ethnicity, socioeconomic status)
- Formative assessment data (e.g., exit tickets administered prior to unit assessment)

#### Possible Data Sources

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## DIGGING IN TO THE DATA

Once you have identified a set of data to review, it can be helpful to consider ways to visualize your data. Looking at spreadsheets packed with student test scores can be overwhelming and make it difficult to pull out potential patterns. Instead, taking the time to generate some simple charts or graphs can make a big difference in terms of making the data accessible and meaningful.

After you've pulled together your data in a user-friendly format, you should review, analyze, and interpret the data to determine the most appropriate next steps. At this stage, focus on making data observations: What do we observe in the data? What patterns do we notice? What can we infer about our students' strengths and challenges?

Take a moment to acknowledge your data's limitations. For example, the data might show only one year of student performance, rather than a series of years that support a trend. This does not mean the data won't be helpful; however, there may be limits to the conclusions you can draw. This process might also prompt thinking about additional data sources that could be helpful to better understand your problem statement.

Data Dialogue Protocol			
<b>I. Predict (3 minutes)</b> <ul style="list-style-type: none"><li>• Make predictions about the data</li><li>• What do I think the data will show?</li><li>• What assumptions guide my predictions?</li></ul>	<b>II. Observe (10 minutes)</b> <ul style="list-style-type: none"><li>• Make observations about what the data shows. (I see..., I notice...)</li><li>• Record only what the data shows (patterns, commonalities, discrepancies, etc.)</li></ul>	<b>III. Infer (10 minutes)</b> <ul style="list-style-type: none"><li>• Make inferences and ask questions</li><li>• What inferences can I make based on the data?</li><li>• What are some possible explanations?</li><li>• What questions does this raise?</li><li>• What areas need further exploration?</li></ul>	<b>IV. Next Steps &amp; Implications for Practice (10 minutes)</b> <ul style="list-style-type: none"><li>• What implications does this data have for student learning?</li><li>• How might this data inform my practice?</li><li>• What questions could we answer with more data?</li><li>• What does the data show that should be a priority in our work?</li></ul>

**Please note:** Although independent review of data can be helpful for reflecting on what's happening in our classrooms, we highly recommend connecting with at least one other colleague to collaboratively review your data and brainstorm potential action steps in response to the patterns you see emerging.

## ACTION PLANNING & ADJUSTMENTS TO PRACTICE

Once you have completed the data dialogue protocol, you can use your conclusions to identify student learning goals on which to focus improvements and map out specific action steps for adjusting your practice. Your data analysis can lead you to identify patterns in student learning, including common strengths and challenges. In this step, you can engage in conversations with colleagues to formulate hypotheses about the reasons for these patterns, including why students are performing in a certain way and how specific adjustments to your instruction can help students achieve your learning goals. Based on your hypotheses, you might decide to change or supplement your curriculum, try new instructional strategies, or seek alternative resources to better support student learning.

### Questions to consider:

- What goals do we have for our students' learning?
- What are the root causes that might have led to the patterns seen in student performance?
- What root causes are within my control to change? In what ways can I change specific instructional practices or features of my classroom environment that might yield improved outcomes for students?
- What changes or action steps will address the goals we set for our students' learning?

### Making an Action Plan

**Goal:** What do you hope to accomplish? What challenge in your classroom do you seek to address?

**Rationale:** What data prompted you to make this action plan?

#### Identify Action Steps:

What specific change(s) will I implement in my classroom?

#### Set a Timeline:

When will I implement this change?

#### Monitor Progress

How and when will I measure progress toward my goal?

#### Evaluate Success

How will I know if the change I implemented improved outcomes?

### Reflect & Adjust

- How effectively has the initial issue been resolved?
- What new concerns have arisen?
- Should we continue with our action plan or choose a new area of focus?