



California's System of Support 2–Assess Needs

Module 2C: Introduction to Root Cause Analysis

Updated January 2019



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California's System of Support Goal

To help local educational agencies (LEAs) and their schools meet the needs of ***each student they serve***, with a focus on **building local capacity to sustain improvement** and to **effectively address disparities** in opportunities and outcomes.

- California Department of Education (CDE)
California's System of Support web page



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Overview of Modules

1. Set Direction and Purpose

1A. Overview of Continuous Improvement and the Local Control and Accountability Plan

2. Assess Local Needs and Determine Causal Factors of Greatest Needs

2A. Planning a Needs Assessment for Continuous Improvement

2B. Designing a Needs Assessment for Continuous Improvement

2C. Introduction to Root Cause Analysis



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Purpose of Module 2C

To provide LEAs and local stakeholders with:

- An introduction to root cause analysis
- Specific guidance, questions, and tools to consider when determining the root causes of improvement needs for use within the Local Control and Accountability Plan (LCAP) and school planning processes



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Needs Assessment for Continuous Improvement

Introduction to Root Cause Analysis

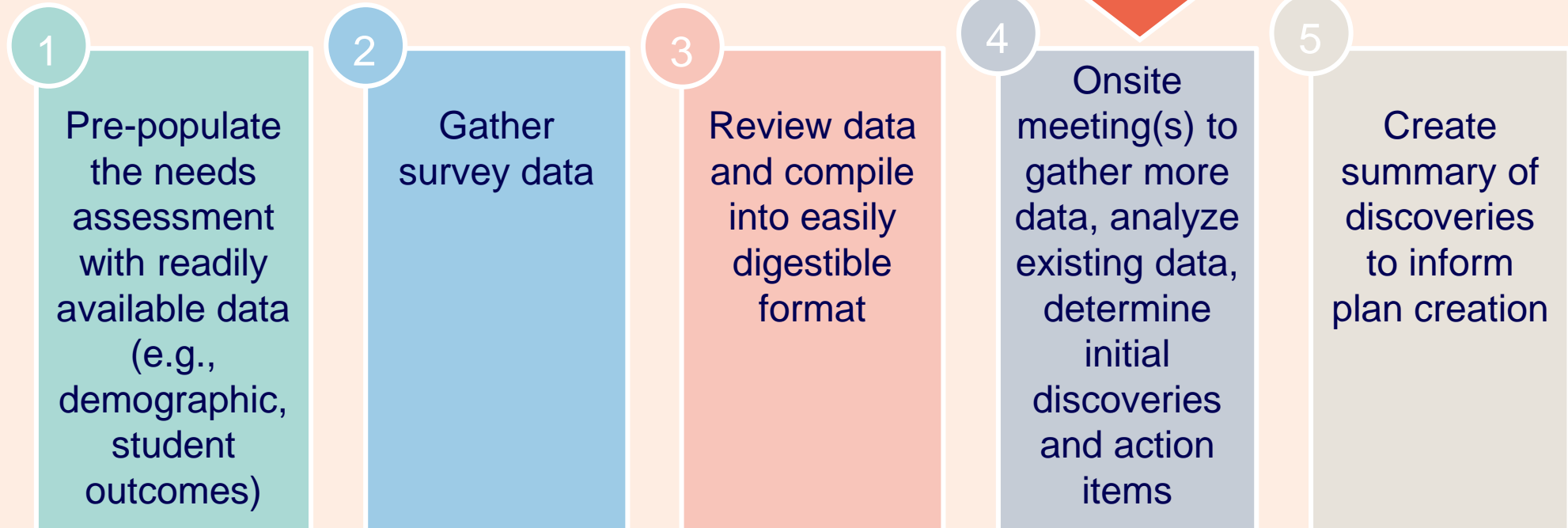


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Steps in a Needs Assessment



Onsite analysis meetings are a crucial component during which **data are analyzed**, **root cause analysis** occurs, and **plan development** begins.





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Why is Root Cause Analysis Necessary?

- Root cause analysis addresses the **problem** rather than the **symptom**, eliminates wasted effort, conserves resources, and informs strategy selection.
 - The California School Dashboard identifies the **symptoms** of the problem. The **problem causing** those symptoms is revealed through **root cause analysis**.



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What is Root Cause Analysis? (1)

- Root cause analysis is part of the needs assessment process.
 - Root cause is defined as “the deepest underlying cause or causes of positive or negative symptoms within any process that, if dissolved, would result in elimination or substantial reduction of the symptom.”
 - Preuss, P. 2003. *Root Cause Analysis: School Leader’s Guide to Using Data to Dissolve Problems*. New York: Routledge.



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What is Root Cause Analysis? (2)

- Root cause analysis is a strategy to thoroughly examine practices, processes, and routines to determine their impact on outcomes. It answers the “Why?” behind each identified area of improvement.

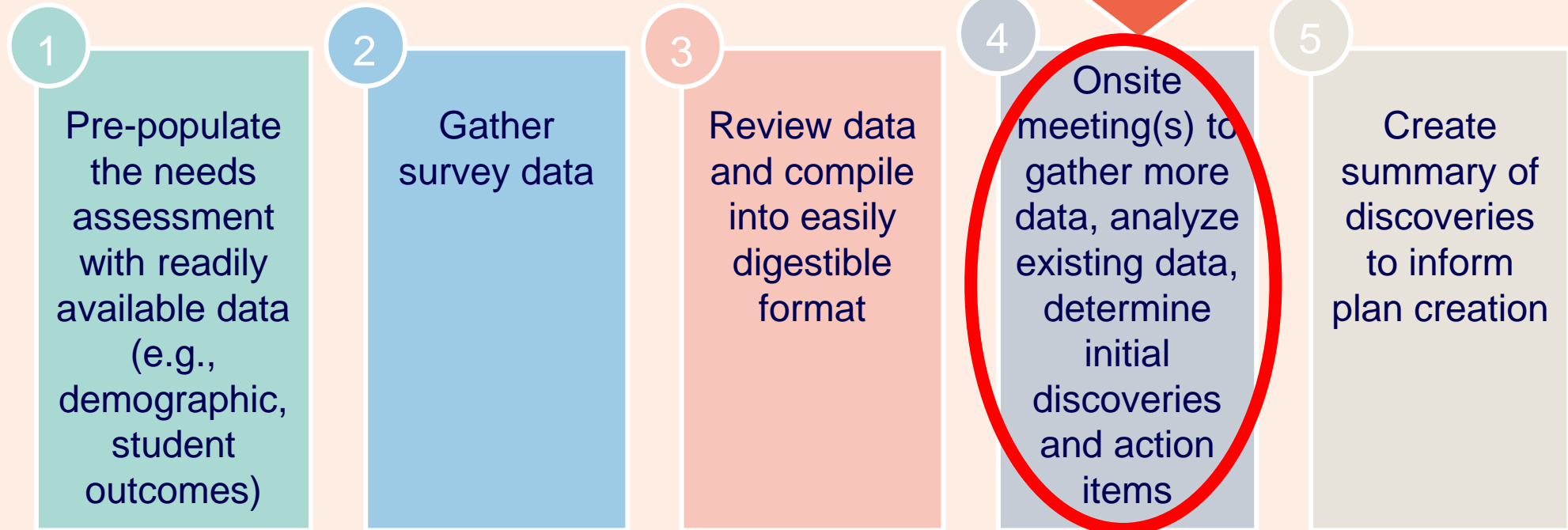


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When Does Root Cause Analysis Occur in the Needs Assessment?



Onsite analysis meetings are a crucial component during which **data are analyzed**, **root cause analysis** occurs, and **plan development** begins.





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What is a Process for Conducting a Root Cause Analysis?

Onsite analysis meetings are an opportunity for representatives from the LEA and other stakeholder groups to come together as a team to analyze the data collected during the needs assessment process and **collaboratively identify** LEA needs and root causes of those needs.



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Return to Worksheet 4: Designing Your Needs Assessment

Check off the roles and responsibilities for each of the stakeholder groups identified:

| Stakeholder Group | Establishment of Design Requirements | Development of Tools and Processes | Data Collection | Analysis | Onsite Analysis | Plan Development |
|-----------------------------|--------------------------------------|------------------------------------|-----------------|----------|-----------------|------------------|
| CDE Personnel | | | | | | |
| COE Personnel | | | | | | |
| LEA Personnel | | | | | | |
| Local Board of Education | | | | | | |
| Families and Community | | | | | | |
| School Personnel | | | | | | |
| Students | | | | | | |
| LEA-hired External Partners | | | | | | |
| Other: _____ | | | | | | |



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The Data Analysis Team

- The Quality Schooling Framework (QSF) web page features a video on needs assessment and data analysis:
 - *Analyzing Data and Assessing Local Needs*
<https://www.cde.ca.gov/qs/vi/processes.asp#analyzingdata>
- The video's discussion guide includes activities for establishing and defining an **effective data analysis team**.



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Establishing a Highly Effective Data Analysis Team

The onsite data analysis team provides a dissemination point for distributed leadership responsibilities by:

- Establishing and supporting schoolwide efforts to improve teaching and learning
- Building collaboration among stakeholder members
- Modeling cultural and collaboration norms that are needed from stakeholder teams



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Defining an Effective Data Analysis Team (1)

An effective data analysis team will:

- Have an agreed-upon structure and norms for team conduct
- Define for itself the roles and responsibilities of its members



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Defining an Effective Data Analysis Team (2)

The team can consider the following questions to establish a workable structure:

1. Who will conduct or facilitate the meetings? How will norms be established?
1. Who should be on the team? Is there a need for subcommittees?
3. How will the participation of the larger school community be encouraged and supported?
3. How will the work be monitored, recognized, and supported? What is the system to ensure accountability?



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Defining the Data Analysis Team's Work and Roles

| An Effective Data Analysis Team: | And What They Do: |
|---|---|
| Is inclusive with representation across the school community, tapping varied perspectives and expertise | Frequently communicates with the broader school community in an effort to solicit perspectives and secure 'buy-in' |
| Is a real team with clearly defined responsibilities and a shared commitment, rather than a team in name only | Uses data to identify and sets clear and measureable goals for student learning outcomes |
| Develops a culture of continuous improvement and serves as the model team for other school teams | Utilizes consistent structures and processes, modeling these for the broader school community |
| <i>(The statements above are provided as examples. Engage participants in identifying additional descriptions to develop a common definition of what an effective data analysis team is.)</i> | <i>(Engage participants in identifying what an effective data analysis team does. Revisit these guidelines periodically to further fine-tune these descriptions.)</i> |



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Needs Assessment for Continuous Improvement

Root Cause Analysis Tools and Protocols



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Tools for Understanding the Problem

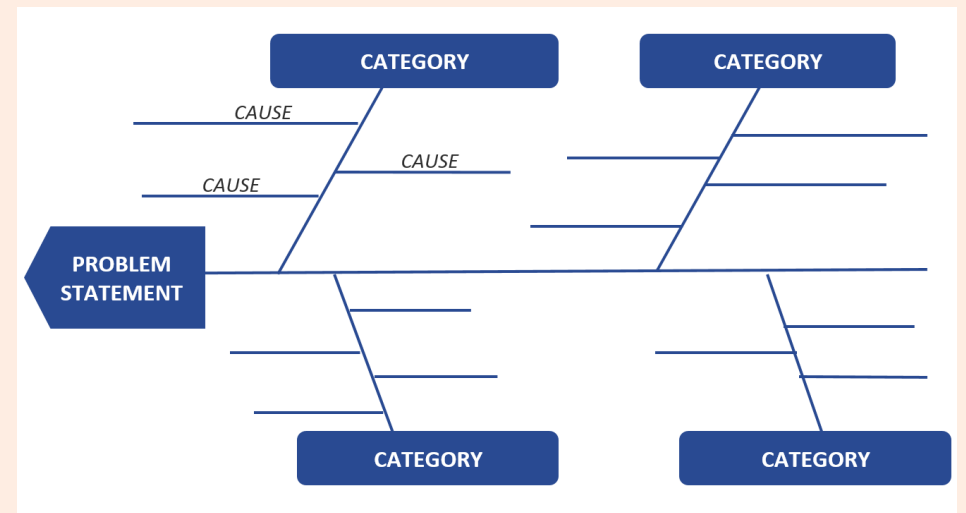
- Fishbone Diagram
- Interrelationship Digraph
- Expert Convening
- Empathy Interviews
- Digging Into Data
- Process Mapping
- Driver Diagram



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Fishbone Diagram

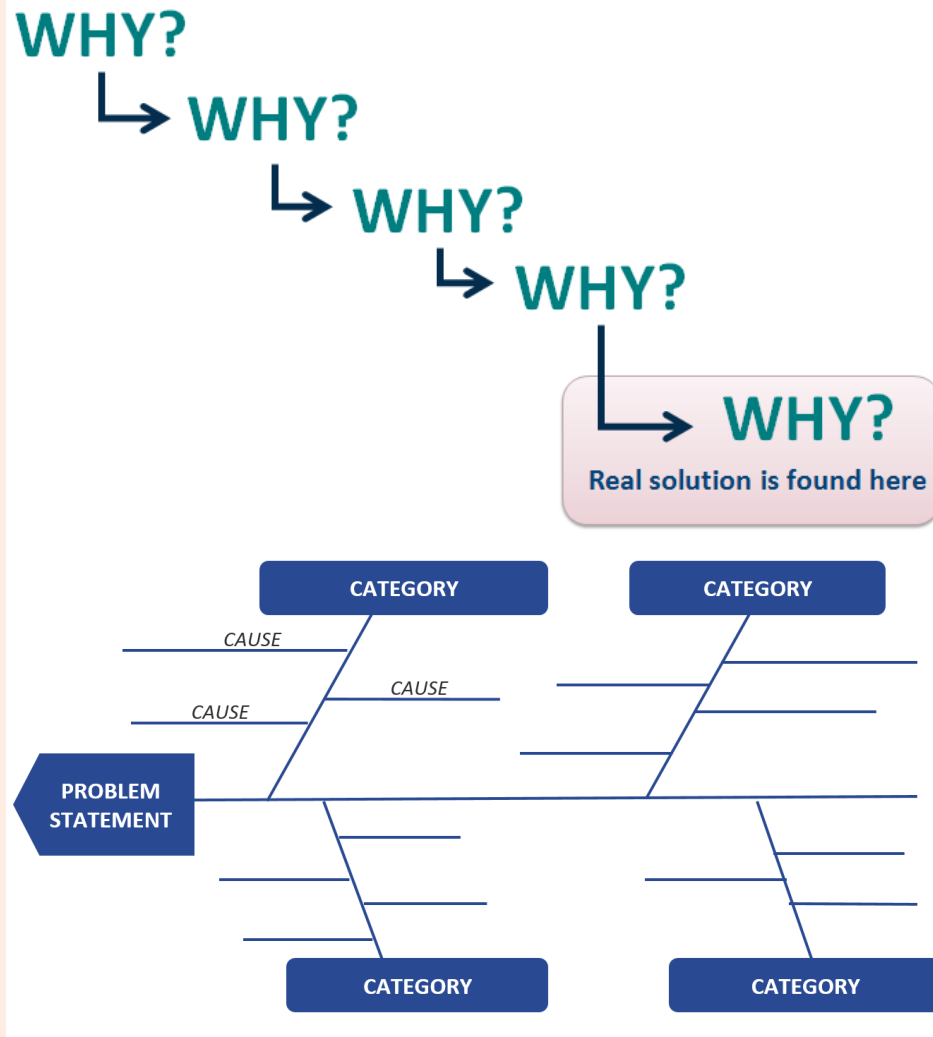
The purpose of a Fishbone Diagram is to **understand** a problem at a deep level ***before*** trying to solve it.





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Fishbone Generation Protocol



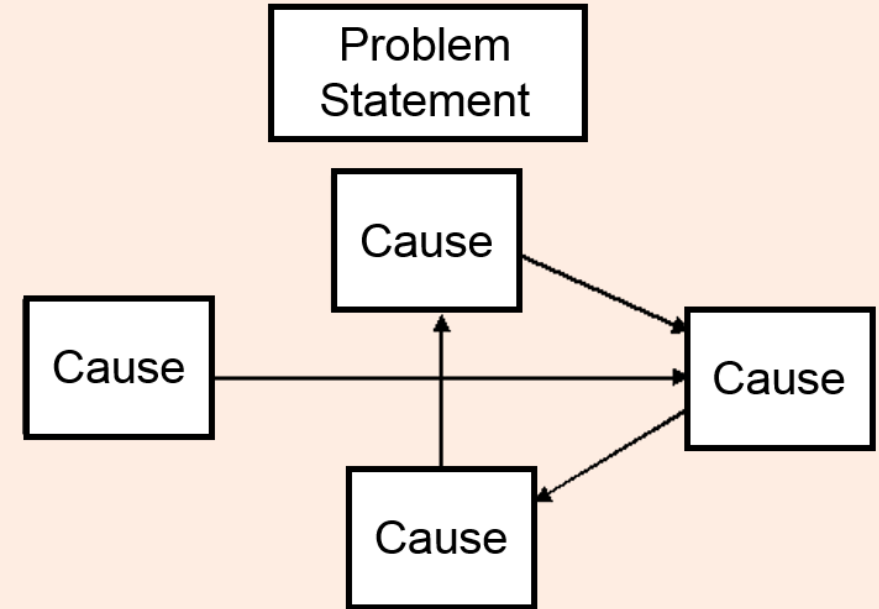
1. Write the problem in one sentence.
2. Brainstorm causes
– Ask five “Whys?”
3. Share and categorize causes.
4. Post and reflect.
5. Debrief.



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Interrelationship Digraph

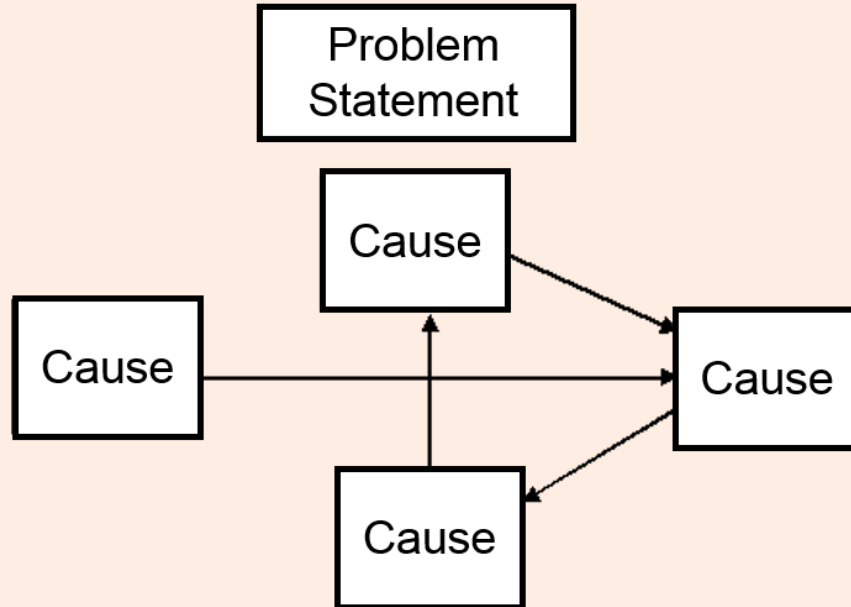
The purpose of an interrelationship digraph is to identify which root causes from the fishbone diagram have **the most impact** on the problem. This enables the onsite review team to determine **where to focus** improvement efforts.





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Interrelationship Digraph Protocol



1. Write the problem statement from the Fishbone Diagram at the top of the Interrelationship Digraph.
2. Arrange root causes from the Fishbone Diagram in a circle.
3. Start with a root cause and ask if there is any relationship between it and the others.
 - Does X cause Y or vice versa?
4. Repeat until all relationships between causes have been established.
5. Tally arrows out.
 - The root cause with the most outgoing lines has a greater impact on the problem.



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Expert Convening

The purpose of an expert convening is to learn from people with **relevant expertise** and provide **multiple perspectives** on a problem and its root causes. Ideally, the onsite review team should leave with a deeper understanding of the factors contributing to the problem and clear next steps for moving the work forward.



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Expert Convening Protocol

1. Introduce protocol and participants.
2. Experts ask probing questions to the group.
3. Experts reflect on what they would like to contribute to the discussion.
4. Conduct discussion rounds.
5. Team reflection on conversations.
6. Debrief.



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Empathy Interviews

The purpose of an empathy interview is to gain a **deeper understanding** of a stakeholder's (e.g., principal, teacher, student, parent, community member, etc.) experience of the problem to resolve by seeing the problem **from their point of view**.



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Empathy Interview Protocol

1. Each group member prepare questions.
2. Share and identify/organize the top five to six questions as a group.
3. Predict and plan.
4. Conduct interview.
5. Reflect.



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Digging into Data

The purpose of digging into data is to help a group engage in **productive dialogue** about data and to **build collective capacity** to make sense of data relevant to continuous improvement. You can use this protocol with multiple small groups, each unpacking different data and sharing out to the larger group **or** you can use this protocol to have everyone unpack the same data.



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Digging into Data Protocol

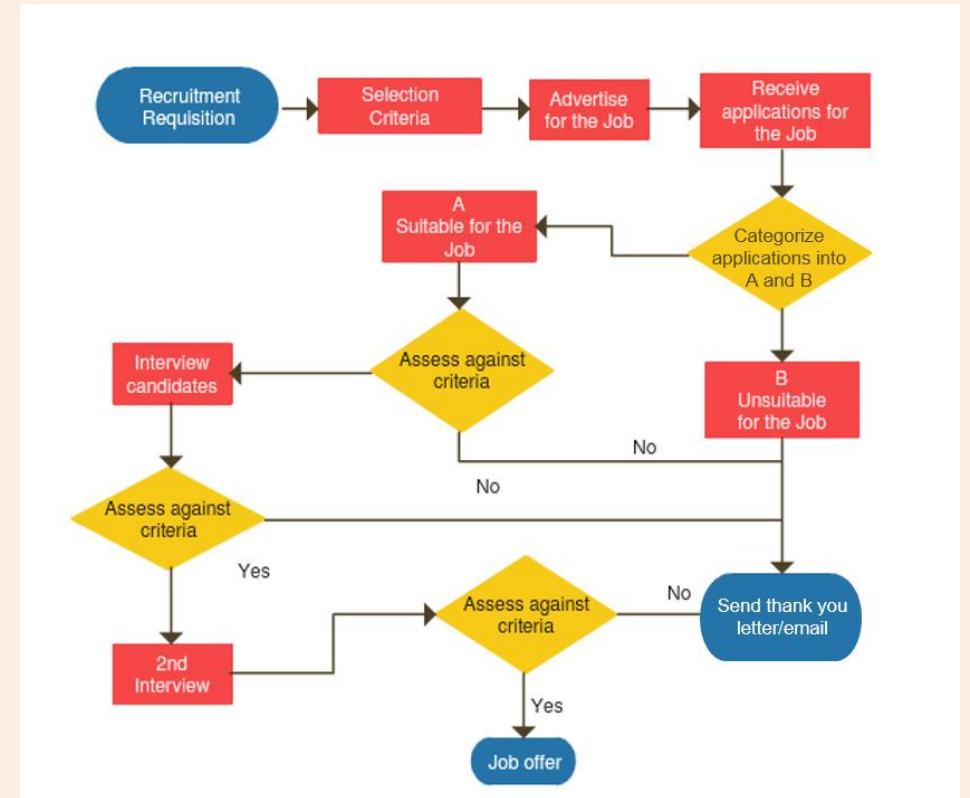
1. Participants individually review the data.
2. Conduct structured discussion rounds to discuss observations, celebrations, questions, hypotheses, and next steps (this can be done as one large group or in small groups).
3. Share highlights with the group (skip if only one group).
4. Debrief.



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Process Mapping

The purpose of process mapping is to better understand the process leading to a particular outcome and identify potential breakdown points in order to focus continuous improvement efforts.





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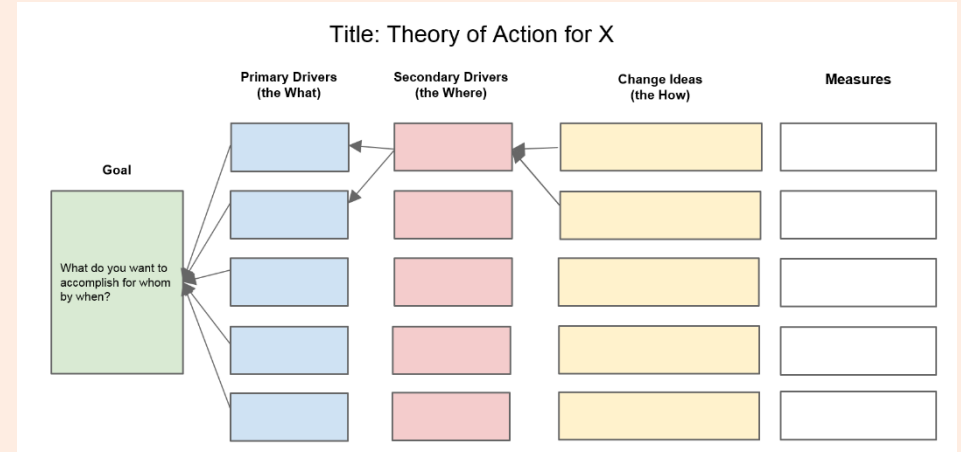
Process Mapping Protocol

1. Brainstorm and identify the end point (i.e., goal) of the process map.
2. Create the map:
 - If X is the goal, where do you begin the process to X?
 - Then what?
 - Listen for decision points.
 - Ask what was most challenging about the process and what could be changed?
3. “Interrogate” the map and identify change ideas (How might the process breakdown?).



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Driver Diagram Generation



- The purpose of a driver diagram is to generate or refine a shared **theory of action** to drive a team's improvement efforts and achieve the goal.
- Driver diagrams are not intended to be set in stone. Your team's theory of action should **evolve** as you learn more about the problem/gap you want to address, the change ideas you are trying, and how best to achieve your goal.



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Driver Diagram Protocol

1. Clarify the goal (is it measurable?).
 - What do you want to accomplish, for whom, by when?
2. Identify primary drivers (the what).
 - “If we figured out X, we could achieve our goal” **or** “If we don’t figure out X, it is unlikely we would achieve our goal.”
3. Identify secondary drivers (the where).
 - On what structures and processes can you focus your efforts to impact the primary drivers?
4. Identify high-leverage change ideas (the how).
 - Note the alignment (or lack of) between change ideas and drivers to determine whether a new driver is needed or a driver is not helpful.
5. Debrief.



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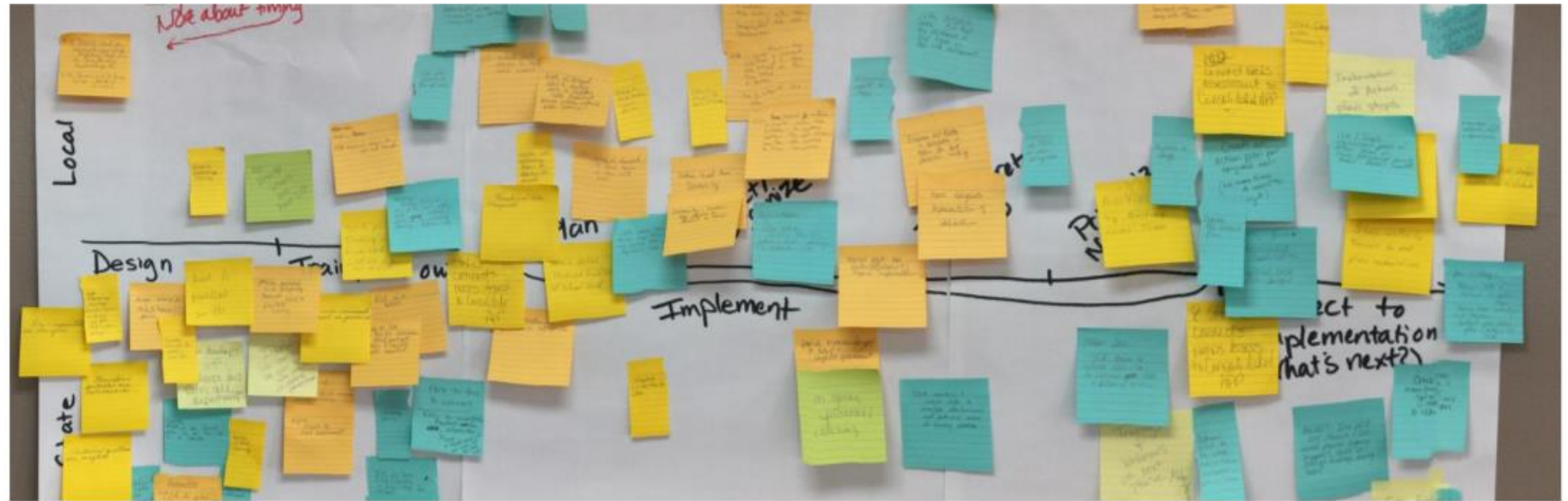
Worksheet 5: Designing an Effective Onsite Analysis Meeting

1. Who participates in the onsite analysis meeting(s)?
2. Who facilitates the onsite analysis meeting(s)?
3. What data analysis should be completed in preparation for the onsite analysis meeting(s)?
4. How can the onsite analysis meeting be a safe space to discuss issues that may be controversial or politically sensitive?
5. How can the onsite analysis meeting be structured to complete root-cause analysis (e.g., fishbone diagrams, five whys)?
6. How do the results from the onsite analysis meeting(s) inform creation of an LCAP for the LEA?



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Return to Implementation Path Activity



Now that you have completed the Needs Assessment Modules, are there any milestones that need to be added, edited, or rearranged?



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Resources and Tools (1)

- California School Dashboard
<https://www.caschooldashboard.org/#/Home>
- Continuous Improvement Resources web page
<http://www.cde.ca.gov/sp/sw/t1/continuousimprovement.asp>
 - Worksheet 5
<http://www.cde.ca.gov/sp/sw/t1/documents/contimp2cw5.doc>
 - Root Cause Analysis Toolkit
<http://www.cde.ca.gov/sp/sw/t1/documents/contimprct.doc>
 - Fishbone Template
<http://bit.ly/2B8uYxq>
 - Driver Diagram Template
<http://www.cde.ca.gov/sp/sw/t1/documents/contimpddt.pdf>



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Resources and Tools (2)

- QSF Analyzing Data and Assessing Local Needs
<https://www.cde.ca.gov/qs/vi/processes.asp#analyzingdata>
- *Using Needs Assessments for School and District Improvement: A Tactical Guide*
<https://centeronschoolturnaround.org/wp-content/uploads/2018/04/NeedsAssessment-Final.pdf>
- *Utilizing Integrated Resources to Implement the School and District Improvement Cycle and Supports*
<https://www.ccsso.org/resource-library/utilizing-integrated-resources-implement-school-and-district-improvement-cycle-and>



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- State Support Network, Scaling Needs Assessment Community of Practice Materials from Learning Cycle #3, October 18, 2017.