

Comprehensive Needs Assessment Toolkit

**A Resource for Vermont Schools and School Systems Engaged in
the First Phase of Continuous Improvement Planning**



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Background

The comprehensive needs assessment process serves as a first step in continuous improvement planning. It is a process of analyzing data about a school or school system to learn what has occurred, is occurring and needs to occur to improve student outcomes (Bond & Sodat, 2016). The comprehensive needs assessment process leads to the identification of specific and measurable goals for improvement and high-leverage change ideas to achieve them.

What's in the Toolkit?

The Comprehensive Needs Assessment Toolkit was assembled to support schools and school systems engaged in the comprehensive needs assessment process. These explanations, tools and examples are provided to assist teams in developing or refining their own processes.

It is important to keep in mind that the steps outlined, and the resources provided form just one example of the comprehensive needs assessment process; there are many, largely similar, approaches from which Vermont school systems may borrow. The supports presented in this toolkit are not all-inclusive and additional resources may be needed to meet the specific needs of each LEA/School team, including those featured in the Education Quality and Continuous Improvement Framework. An effective, sustainable continuous improvement process is built on a foundation of conceptual understanding and familiarity with evidence-based practices. Teams should develop meaningful knowledge of the Education Quality and Continuous Improvement Framework before beginning their work.

The information presented in this toolkit represents Phase 1 of the Vermont model for continuous improvement (Assess Needs and Innovate). At the successful completion of these exercises, teams should have realized the following goals:

1. A basic understanding for the concepts that underpin the comprehensive needs assessment process
2. A more precise understanding of the individual needs of their school or LEA
3. The identification of specific and measurable goals for improvement, and the creation of a Working Theory of Improvement for meeting them

Stages of the Comprehensive Needs Assessment

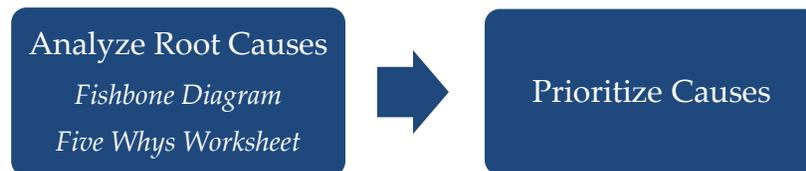
Preparing for Collaborative Inquiry



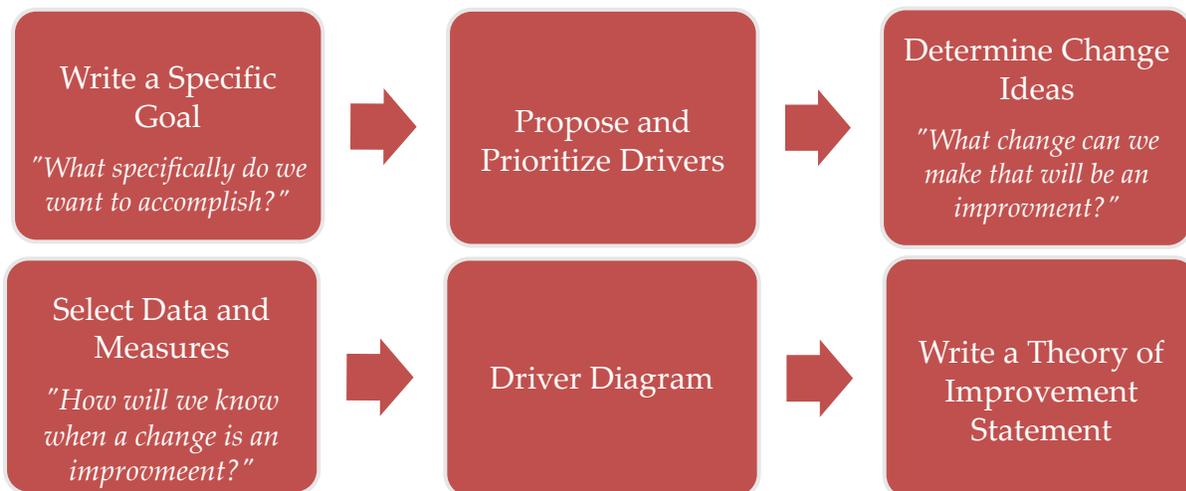
Identifying Priority Problems of Practice



Analyzing Root Causes



Developing a Working Theory of Improvement



Preparing for Collaborative Inquiry



Guiding Questions

- Have we included representatives with diverse perspectives from all stakeholder groups?
- What are our shared beliefs about, and goals for, our students and schools?
- What data is available to us, and what additional data do we need?

Tools

- Shared Vision Worksheet
- Data Inventory

Assemble a Needs Assessment Team

The first step in *Preparing for Collaborative Inquiry* is to assemble a group of diverse stakeholders to collaborate with. According to the Education Quality Standards (pg. 14) the continuous improvement plan shall be developed with the involvement of school board members, students, teachers, administrators, parents, and other community members. By inviting all stakeholders to participate, you establish a unified understanding of your schools, identify goals that reflect the vision of the entire learning community, and promote buy-in for improvement efforts. Keep in mind that not every member of the diverse stakeholder group needs to be involved with every single step of the process. Various stakeholders can be involved throughout the process in several ways including, developing a Shared Vision Statement, participating in Integrated Field Reviews, and participating in surveys.

Develop or Revise a Shared Vision

A shared vision is a written statement of your team’s common beliefs and goals for school and student outcomes. If your school or district already has a shared vision, this step might involve introducing it to your stakeholders, checking for agreement, and possibly making minor revisions. If a shared vision doesn’t exist, beginning a comprehensive needs assessment process is a good reason to write one. The shared vision can then serve to steer your needs assessment towards those priorities.

Example:

“In the White River Valley Supervisory Union, a world-class education is built upon strong relationships between and among students, teachers, families, and communities. All students are supported, challenged, and engaged with a personalized education. Learning is rigorous and relevant to student interests while preparing every child for college, career, and active citizenship.”

~White River Valley Supervisory Union, Royalton, Vermont

“Miller’s Run School is a welcoming and supporting community. Students learn in a positive and respectful school that meets their diverse academic, social, and emotional needs resulting in motivated and dynamic life-long learners.”

-Miller’s Run School, Sheffield, Vermont

Organize and Conduct a Broad Data Overview

Having assembled a diverse team united by a shared vision, the process of identifying specific goals and change ideas for improvement begins by assembling a broad overview of LEA or school data that represent a wide range of practices and outcomes. This will lead to the identification of Broad Area(s) of Focus to explore further.

Most schools and LEAs collect four types of data (Bernhardt, 2003). See Appendix 1 for more examples of each data type:

1. **Demographic** data, including enrollment rates, retention rates, gender, race, ethnicity, disability, income, graduation and dropout rates
2. **Student Outcomes** data, including results of state and local assessments, curriculum-based measures, demonstrations of proficiency, formative measures, behavior and social-emotional health
3. **School Process** data, including measures of instructional practices, continuous improvement, curriculum alignment, professional learning, staff evaluation, resource availability, technology integration and program effectiveness
4. **Perceptions** data, including climates surveys, communication data, parent and community involvement data and focus groups

Collecting, presenting and analyzing data can be daunting for staff members with limited experience in these areas. Teams should consider supplementing the data literacy of their staff using traditional and digital resources. The Education Quality and Continuous Improvement Framework lists some potential supports, such as:

- [Data Wise Process](#) and [Free Online Course](#)
- [The Data Informed District: Research on Using Data to Inform Practice](#)
- [A Practical Framework for Building a Data-Driven District or School](#)
- [Guide for Conducting a Comprehensive Needs Assessment](#)
- [School Reform Initiative Data Protocols](#)

Shared Vision Worksheet

<p>Purpose: To develop or revise a Shared Vision representing the common beliefs, values, and goals of all stakeholders.</p>	
<p>Directions:</p> <ol style="list-style-type: none"> 1) Individuals should record their personal ideas in response to the guiding questions provided. 2) Small groups should convene to develop a shared response on a separate worksheet or large piece of paper. 3) The full group should assemble to merge small group work into a single, unified Shared Vision Statement that is written in the present tense. 	
Activities and Guiding Questions	Ideas and Responses
<p>Brainstorm Core Values and Beliefs</p> <ul style="list-style-type: none"> • What do we value in our students, our schools, our communities, and ourselves? • What do we believe are the factors that support effective learning and positive outcomes for all? 	<p>curiosity, diversity, problem-solving, independence, citizenship, lifelong learning</p>
<p>Brainstorm Core Purposes</p> <ul style="list-style-type: none"> • What is the purpose of our work with and on behalf of students? • What are we committed to providing to our students and stakeholders? 	<p>high-quality instruction, challenging curriculum, opportunities for personalized differentiated learning, equity</p>
<p>Brainstorm Goals</p> <ul style="list-style-type: none"> • Based on our core values, beliefs and purposes, what are our goals for our students and school(s)? • What would the successful implementation of our core values, beliefs and purposes look like / what would the outcomes be for our students? 	<p>every student prepared for middle and high school, healthy life choices, contribution to community (both local and beyond)</p>
<p>Draft a Vision Statement</p> <ul style="list-style-type: none"> • With consideration for your team’s shared core values and beliefs, core purposes and common goals, write a narrative or statement(s) in the present tense that captures your vision for your students and school(s). 	<p>“Apple Orchard School fosters a spirit of lifelong learning and independence by celebrating the natural curiosity and diversity of our students. Through high-quality instruction and opportunities for personalized learning for all, our graduates are prepared to achieve a range of life goals and become positive contributors on local, national, and global scales.”</p>

Data Inventory

Purpose: To identify sources of data that can serve to form a broad overview of the current state of your school or school system.

Directions:

- 1) Identify school or district level measures that are currently available, and those that might be important to include in your overview. For each measure, include available details.

Data Available

Measure	Content Area or Type of Data	Stakeholders Represented	When Collected	Prepared By
VTSA	Science	Grades 3??	Spring	Linda H.
SBAC	Math and Literacy	Grade 3-5	Spring	Linda H.
AIMSweb	Math and Literacy	Grades K-5	Spring	Linda H.
PowerSchool	Attendance, Demographic, Testing Data, Evaluations	Grades K-5 Parents	Ongoing	Peggy R.
SWIS	Behavior	Grades K-5	Ongoing	Michael M.
Walkthrough Data	Instructional Practices	Staff	Monthly	Hannah B.
Climate Survey	Outcomes/Perceptions	Students and Parents	November and March	Hannah B.

Additional Data Needed

Measure	Content Area or Type of Data	Stakeholders Represented	When Available	Prepared By
MTSS Team Data	Math and Literacy	Grades K-5	Ongoing	Michael M.
Integrated Field Review	EQS Implementation	All	March	Sheila T.

Identifying Priority Problems of Practice



- In what general area(s) are our outcomes not meeting our shared expectations?
- What discrepancies, patterns, or trends within this Focus Area does the data reveal?
- What unmet student needs have we uncovered, and which are the most important to address?

- Problem of Practice Worksheet

Choose Broad Focus Areas

Broad Focus Areas are general areas of need revealed during a broad data overview. They provide an initial direction for deeper data analysis. In addition to using the data, your team's Shared Vision, the Vermont Schools Annual Snapshot report for your LEA/school, and the expectations of Vermont's Education Quality Standards should influence the selection of Broad Focus Areas.

Examples:

"For the past three years, climate surveys indicate that more than half of students and parents are dissatisfied with the degree of personalization at our high school." **Focus Area: Personalization**

"Over the past four years, the average percentage of third grade students demonstrating proficiency in math was less than 30%." **Focus Area: Third Grade Math**

Recognize Trends in the Data

With a Focus Area agreed upon, a further examination of the data occurs in three steps.

1. The team identifies and collects **additional data** related to this area, as needed.
2. The team makes **factual observations** about the data (Boudett & Murnane, 2013). These observations should be objective and free of assumptions or biases, only stating what the data shows.

Examples:

"Course enrollment data indicates that less than 30% of 11th and 12th grade students have enrolled in a Flexible Pathways option over the past three years."

“Third graders have consistently underperformed in the area of Number Sense and Problem Solving relative to other strands of the SBAC Math assessment.”

3. Once you have a clear picture of the facts revealed by the data, move on to **making inferences** about what these facts are telling you (Boudett & Murnane, 2013). These inferences should be based logically on your factual observations. Oftentimes, additional evidence will be needed to support an inference, leading to more data collection and observations.

Examples:

“Though generally interested, our students are either not aware of or not able to participate in the full range of Flexible Pathways options available to them.”

“There is a gap in essential foundational skills necessary to proficiently solve word problems at the third-grade level.”

“There is a difference in expectations in instructional practices for teaching Number Sense, Quantity, Counting, and Number Relationships and Operations/Problem-Solving at the early math primary learning levels.”

Identify Priority Problems of Practice

Once sufficient data has been collected, observations made, and inferences drawn, a tentative conclusion can be made. This conclusion becomes a Problem of Practice, a hypothesis which has enough evidence supporting it to merit further analysis. However, it may be revised as new data is explored, and insights are gained.

Examples:

“Few 11th and 12th grade students are participating in Flexible Pathways options, contributing to a high degree of dissatisfaction with personalization efforts at our school.”

“Low achievement in the areas of Number Sense and Problem Solving are resulting in a decline in overall math proficiency in third grade students.”

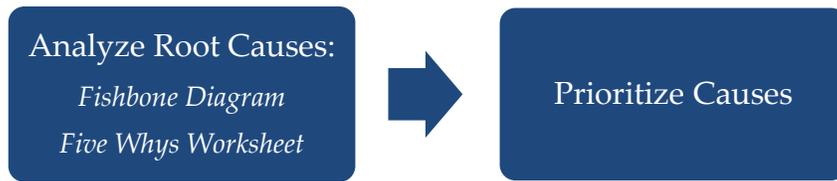
“Not all teachers apply consistent high quality instructional practices in mathematics in K-3rd grade.”

Due to time and resource limitations, it is often necessary for teams to prioritize their Problems of Practice. When prioritizing Problems of Practice, ask “Which unmet student needs have we uncovered, and which are the most important to address?”

Problem of Practice Worksheet

Purpose: To explore data within your selected Broad Area of Focus, ultimately arriving at a Problem (or Problems) of Practice.
Directions: <ol style="list-style-type: none">1) Record your Broad Area of Focus and sources of data to be considered.2) As a team, make factual observations about the data presented, looking for trends, patterns, or discrepancies.3) Infer meaning from your factual observations. What might the data be telling you?4) Ask clarifying questions to be answered, based on your inferences, and assemble the additional data needed to answer them.5) Repeat this activity with your additional data until you've identified a clear Problem(s) of Practice within your Broad Area of Focus.
Broad Area of Focus
Third Grade Math
Sources of Data
SBAC, Local Assessment Data, Teacher Observations, AIMSweb
Factual Observations
<ul style="list-style-type: none">• SBAC data indicates that less than 30 percent of third graders are proficient in math.• SBAC data indicates that third graders are significantly less proficient in Number Sense and Problem-Solving than other SBAC Math strands.• AIMSweb data indicates that less than 50 percent of students in Kindergarten through second grade are proficient in math computation skills.
Inferences
<ul style="list-style-type: none">• Although students may be proficient in computation skills they are having difficulty making the connection to using those skills with problem solving.• There is a foundational gap in problem-solving skills from the early primary years.• There are differences in instructional practices and expectations when teaching Problem Solving skills in grades K-3.
Clarifying Questions
Are teachers using consistent practices across vertical alignment? Do students have the necessary literacy skills needed to understand the word problems? How are problem-solving skills being formally evaluated at the primary levels (K-2)?
Additional Data Needed
Teacher observations, Formal K-2 Problem Solving Assessment
Problem of Practice
Not all teachers apply consistent high quality instructional practices in mathematics in K-3 rd grade.

Root Cause Analysis



<ul style="list-style-type: none">• What are the hypothesized causes and sub-causes of the Problem of Practice? Of the drivers identified, which contribute most significantly to our current outcomes?• What are the broad areas/categories that influence our Problem of Practice?
<ul style="list-style-type: none">• Fishbone Diagram• The Five Whys Worksheet

A Root Cause Analysis is a process designed to help identify what, how, and why a problem of practice occurred and inform you of how you can prevent the problem from recurring. Root causes are specific underlying causes that can reasonably be identified, are within your control to fix, and allow for recommendations and solutions (Rooney & Vanden Houvel, 2004).

Analyze Root Causes

The **Fishbone Diagram**, also known as a cause and effect diagram is a graphic tool used to examine and visually display possible causes of a certain effect or problem. (IHI Open School Quality Improvement Practicum Handbook)

Causes are parts of the system and forces outside of a system that directly influence the outcome or goal of your improvement project. There are many causes that contribute to an effect or problem.

We recommend you consider these categories of causes when completing your fishbone diagram:

- **Resources:** human, financial, and material
- **Skills:** pedagogy, instructional methods, leadership
- **Knowledge:** content, processes, systems
- **Measures/Data:** formative, summative, all data collection
- **Environment:** physical environment, physical well-being, social-emotional health, school culture and climate, socio-economic influences, school governance
- **Processes:** policies, procedures, MTSS, communication

Cause and Effect Tool: Fishbone Diagram

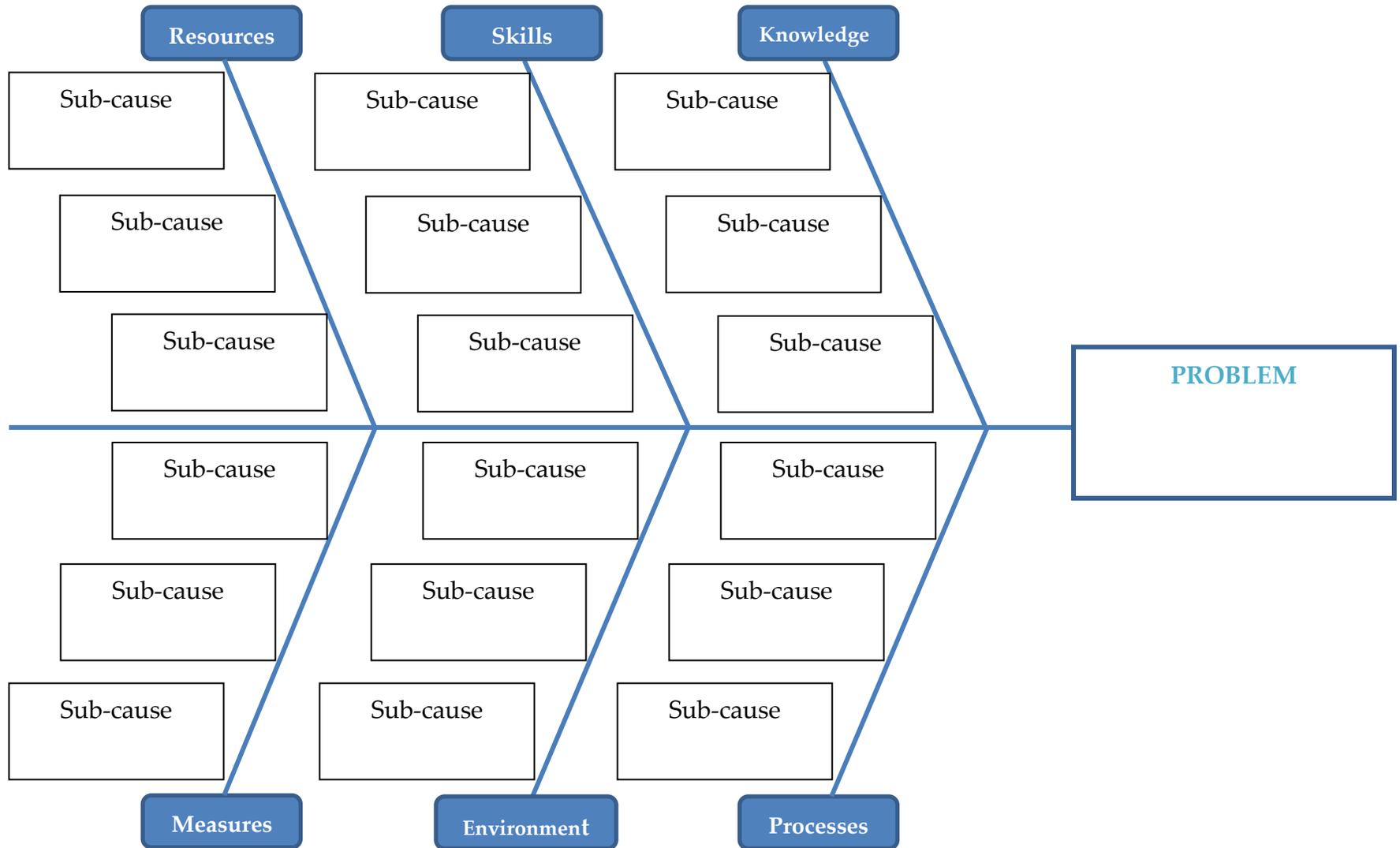
Purpose: To explore and examine the possible causes of a problem of practice.

Directions:

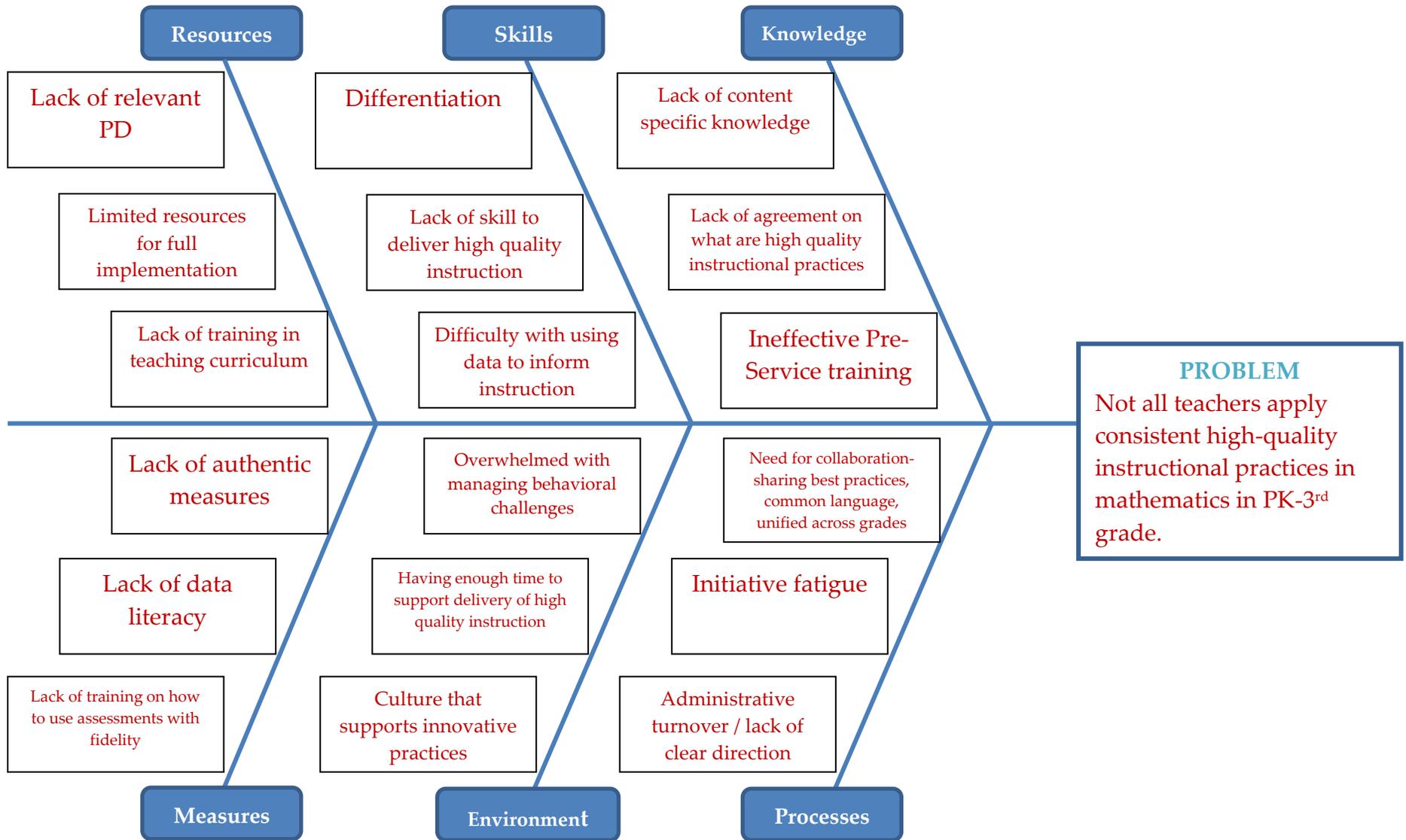
1. Write the Problem of Practice on the right-hand side of the page.
2. Decide on the categories of causes for the problem of practice. You may use the suggested causes, but keep in mind the categories used can vary depending on the problem. Be sure the categories you choose fit the problem.
3. Label the categories you have chosen in the blue boxes.
4. Brainstorm and collect a list of causes for each category you have chosen.
5. List the cause on each fishbone. If a cause has a secondary cause, draw a branch bone to show relationships among the causes.
6. Develop the causes by asking, "Why?" until you have reached a level of detail that is specific enough to be able to test a change and measure its effects.

Adapted from CCSSO and IHI Cause and Effect Tools

Fishbone Diagram



Fishbone Diagram- Example



Analyze Root Causes

The **Five-Whys** is a simple brainstorming tool that can help teams identify the root cause(s) of a problem. Once the problem of practice has been identified, ask “why” questions to reach the specific root cause(s). Teams will know they have reached a root cause when they have identified a reason that is within their control to address, and if the identified cause is addressed it will most likely result in the problem going away.

The Five Whys is closely related to the Fishbone Diagram and can be used to complement the analysis necessary to complete a Fishbone diagram.

The Five Whys Worksheet

Purpose: To determine an actionable Root Cause to a Problem of Practice by asking “why” multiple times.

Directions:

- 1) Record your identified Problem of Practice.
- 2) Start asking “why” related to the problem, keep asking why in response to each suggested cause. Use data to support your reasoning.
- 3) Continue asking “why” (asking five times is typical) until your team arrives at a fundamental Root Cause that is supported by data, within your control to address, and if the identified cause is addressed the problem will most likely go away.
- 4) You may discover that you have not found a plausible, evidence-supported Root Cause, at which point you might reconsider one or all of your “why’s”.

Reminders:

- You don’t want to list 5 different reasons, you want to go deep on one reason.
- If your last answer was something you can’t control, go back up to the previous answer on one reason.
- The final answer cannot be because of a person.

The Five Whys Worksheet

Problem of Practice:

Why is it happening?

1.	How do you know? Supporting Data:
----	--

Why is that?

2.	How do you know? Supporting Data:
----	--

Why is that?

3.	How do you know? Supporting Data:
----	--

Why is that?

4.	How do you know? Supporting Data:
----	--

Why is that?

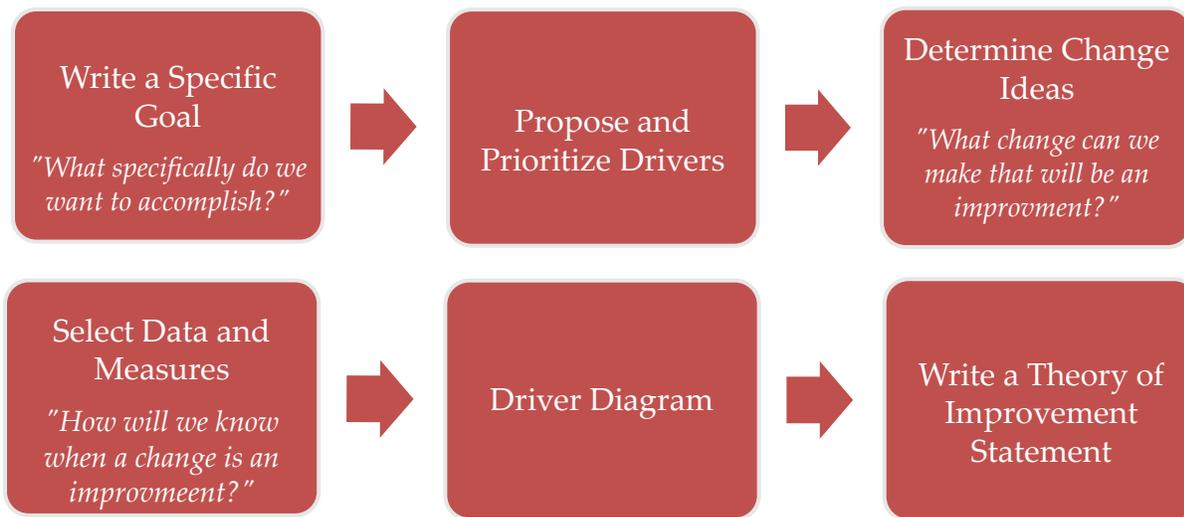
5.	How do you know? Supporting Data:
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Identified Root Cause

The Five Whys Worksheet- Example

Problem of Practice: Not all teachers apply consistent high-quality instructional practices in mathematics in PK-3 rd grade.	
Why is it happening?	
Lack of common understanding of what high-quality instructional practices in math are and what they like in practice.	How do you know? Supporting Data: Teacher surveys, Teacher interviews, PLC Meeting Minutes
Why is that?	
Lack of skill in teaching the current math standards, math curriculum, and differentiating instruction to meet the needs of all learners.	How do you know? Supporting Data: Curriculum, Instruction, and Assessment Audit
Why is that?	
We have not received the appropriate Professional Development in these specific areas	How do you know? Supporting Data: Professional Development Audit, Professional Development Attendance Records
Why is that?	
We didn't know what relevant professional development was needed as we were implementing the new standards and curriculum.	How do you know? Supporting Data: Interview and Surveys
Why is that?	
(Empty)	How do you know? Supporting Data:
Identified Root Cause: Lack of specific and relevant professional development that helps to identify the skills and practices needed to deliver high quality instruction in early mathematics.	

Developing a Working Theory of Improvement



Guiding Questions

- What specifically do we want to accomplish?
- What change(s) can we make that will be an improvement?
- How will we know when a change is an improvement?
- What will success look like? How will it be measured
- What is the relationship between your change ideas and goals?
- What strategic actions must we take related to these changes?

Tools

Driver Diagram
Theory of Improvement Statement starter

Write Specific Goals

In this step, the team transforms their Priority Problem of Practice and/or Root Cause into a goal statement that represents their desired outcome for improvement. Goals for improvement should be specific, measurable, attainable, realistic, and timebound describing:

- **what will be improved**
- **by how much**
- **by when**
- **for what/whom**

Examples:

“By June of 2019 60% of 11th and 12th grade students will enroll in at least one Flexible Pathways option each year, as measured by course enrollment data.”

“By June of 2020, at least 70% of third grade students will demonstrate proficiency in the area of Problem Solving, as determined by SBAC results.”

Propose and Prioritize Drivers

Drivers are the various components of the system believed to have the greatest influence on your goal. Identifying these factors can be based on research or experience, supported by local data.

- **Primary Drivers** are broad areas and components of the system that has the greatest influence on the goal, for example “communication” or “instructional practices.” Generally, 2-5 primary drivers are identified for a goal.
- **Secondary Drivers** are specific practices or components within these Primary Drivers, such as “digital platform use” or “need for added rigor.” Secondary drivers can relate to more than one primary driver.

Collectively, drivers represent a conceptual pathway from your goal to your chosen change ideas.

Determine Change Ideas

If you have successfully identified Root Causes of your Problem of Practice, set a SMART Goal to address the problem of practice, and identified Primary and Secondary Drivers, proposing logical Change Ideas is straightforward. Change Ideas are directly related to secondary drivers (one change idea can be related to more than one secondary driver) and are:

- Specific, testable, and measurable
- Actionable within a reasonable timeframe
- Likely to create change based on their underlying practices (not a program, innovation, or person)
- Likely to shift thinking or practice among those implementing
- Likely to have a measurable impact on the related driver(s)

Typically, Change Ideas originate from:

- 1) **Research Knowledge:** What does the literature say about solving this problem?
- 2) **Practice Knowledge:** What have other colleagues done to solve this problem?
- 3) **Design/Creative Thinking:** In what new ways might we address this problem?

Describe Measures

To determine the effectiveness of a change idea, it is important to identify methods to assess progress and monitor for unintended consequences along the way. Three measurement types can be used to maximize the effectiveness and efficiency of your team's continuous improvement process.

- **Outcome Measures** measure the intended result of your change idea.
 - **Leading Outcome Measures:** short-term formative assessments (ex., local assessment data, checklists, rubrics)
 - **Lagging Outcome Measures:** long-term summative assessments (ex., end of year assessment data- SBAC, NWEA MAP, VTSA, SWIS)
- **Process Measures** are used to determine whether the successful implementation of a change idea is occurring before outcomes are known. These strategies can be monitored formatively and approaches to change can be revised quickly (IHI, 2017).

Example

A process measure for implementing an instructional strategy might include a protocol checklist after each class, teacher survey/interview, or coaching feedback logs.

- **Balancing measures** are used to test for unintended consequences of improvements (IHI, 2017).

Example

A new approach to math instruction might lead to improved math outcomes, but increased planning demands could lead to an undesired shift in other teaching practices. When working to improve one process or practice, it is important to be mindful of the complex nature of your school or LEA and to monitor the impact of change ideas across the entire system.

Working Theory of Improvement- Driver Diagram

A Working Theory of Improvement describes the structures and processes that the team believes need to be changed to meet an improvement goal, as well as, specific actions to create these changes (Provost & Bennett, 2015).

The Driver Diagram is a method for organizing your Theory of Improvement and can be completed using the information collected during the comprehensive needs assessment process. It becomes a record of learning and a roadmap for intervention. Theories can change as your team tests each change idea and learns from the experiences.

A driver diagram shows the relationship between the overall SMART goal of your improvement project, the primary drivers that directly relate to achieving the goal, the secondary drivers that are components of the primary drivers, and specific change ideas to test for each secondary driver. (IHI QI Essential Toolkit: Driver Diagram, 2017)

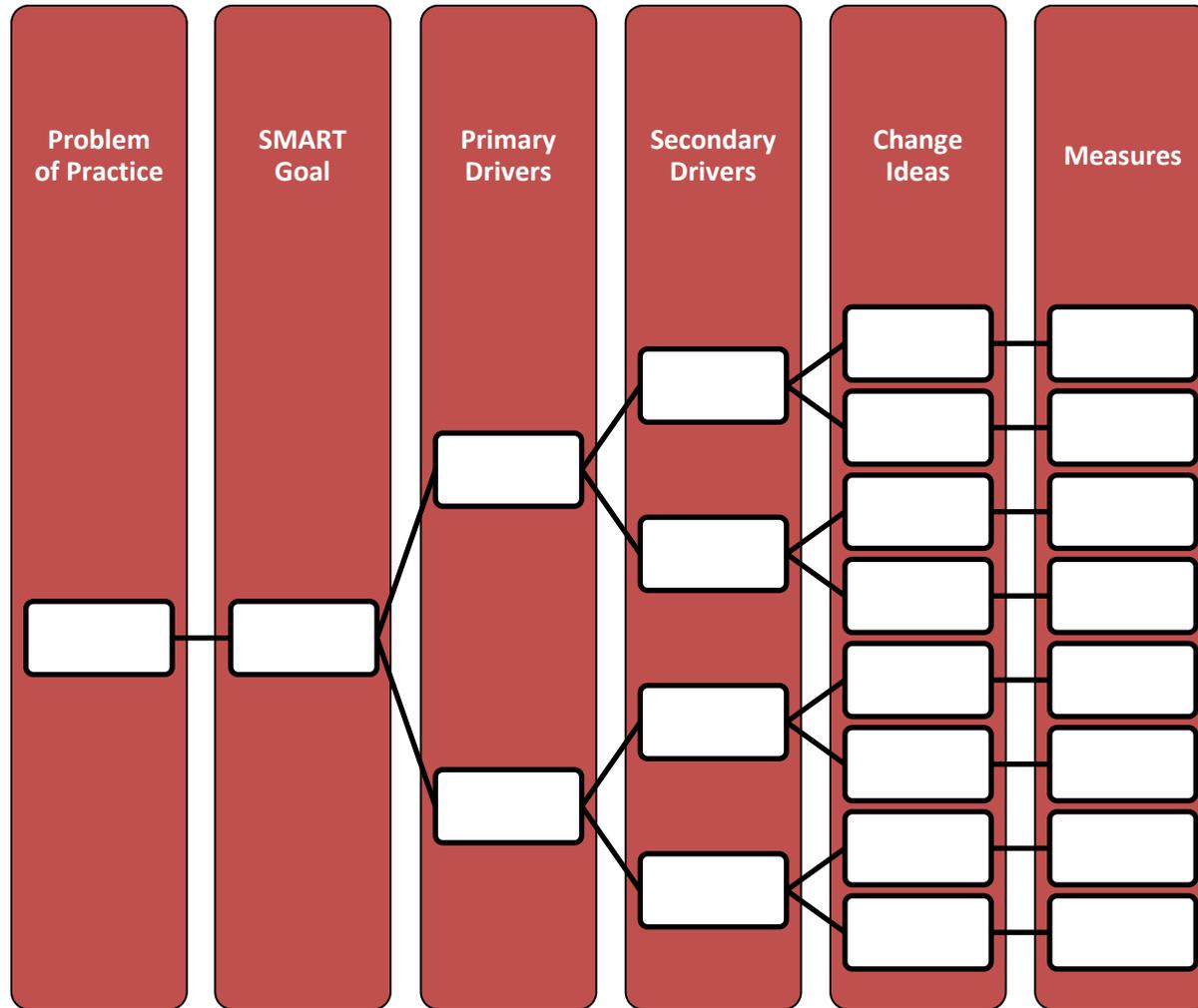
Driver Diagram

Purpose: To create a Theory of Improvement that guides the implementation of improvements.

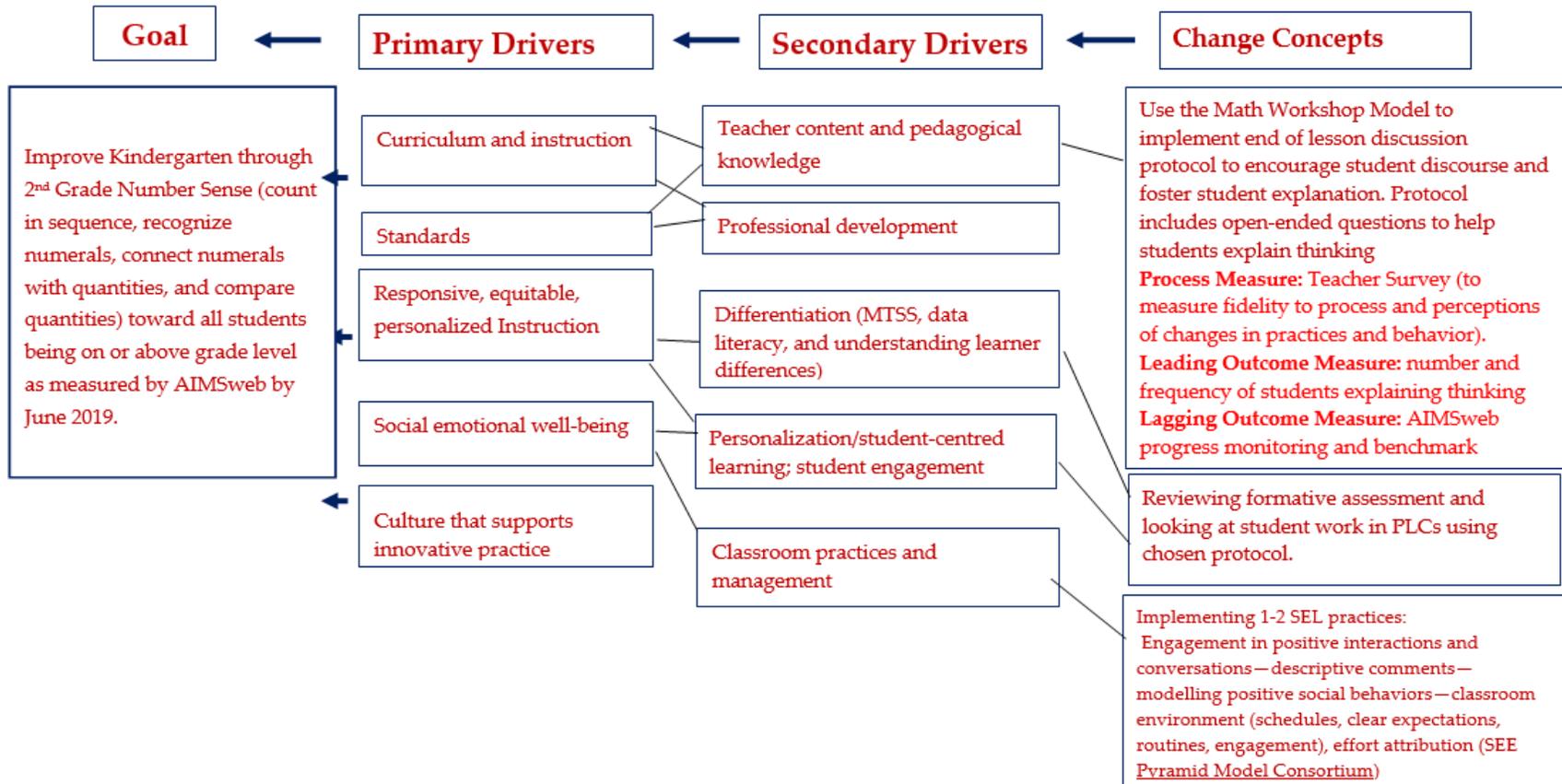
Directions:

1. In the first box on the left, write the SMART goal for your improvement project (what will be improved, by how much, by when, and for what/whom).
2. In the boxes to the right of the SMART goal, list the Primary Drivers- the most significant influencers of your goal. Choose 2-5 to include.
3. In the boxes to the right of each primary driver, list as many secondary drivers that influence the primary driver as you can think of. Draw lines to connect each secondary driver to the primary driver (secondary drivers can connect to more than one primary driver).
4. In the boxes to the right of each secondary driver, list specific change ideas you will test to influence the secondary driver (change ideas can connect to more than one secondary driver).
5. In the boxes to the right of each change idea, list the process and outcome measures you will use to test the effectiveness of each change idea.

Driver Diagram

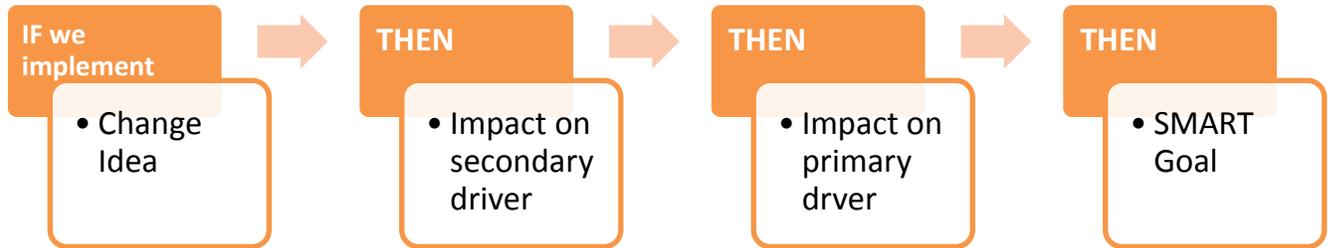


Driver Diagram- Example



Write a Theory of Action Statement

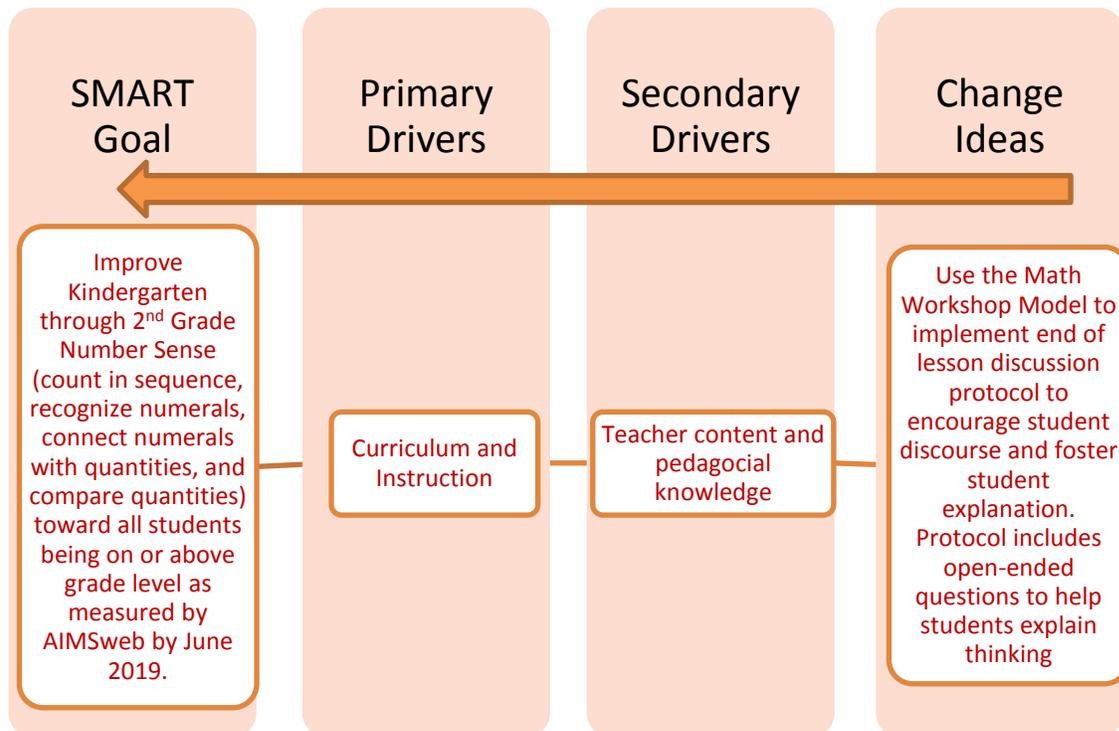
When using the Driver Diagram to write a Theory of Improvement/Action statement you should work from right to left, starting with a change idea and ending with the goal, the statement should be written using an “if...then...” statement like the sentence starter below:



IF we implement (Change Idea), **THEN** (Impact on Secondary Driver), **THEN** (Impact on Primary Driver), **THEN** (SMART Goal).

Example:

“IF we use the Math Workshop Model to implement end of lesson discussion protocols that encourage student discourse and explanation, THEN it will improve teacher content and pedagogical knowledge, THEN it will increase best practices in curriculum and instruction, THEN it will improve Number Sense for students in Kindergarten through Grade 2.”



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Glossary

Balancing Measure: are used to test for unintended consequences of improvements (IHI, 2017).

Broad Data Overview: A process of assembling and analyzing a variety of LEA and school data that represents a wide range of practices and outcomes to help identify specific problems of practice, goals, and change ideas for improvement.

Broad Focus Area: General areas of need that are revealed during a broad data overview that provides an initial direction for deeper data analysis.

Change Idea: Evidence based actions for improvement that are related directly to secondary drivers and are intended to have intended positive outcomes toward meeting the goal.

Collaborative Team: A group of two or more people with shared goals and perceived outcomes who meet on a scheduled or as-needed basis and fill a specific function or purpose.

Comprehensive Needs Assessment (CNA): A formal process for determining gaps between current conditions and desired outcomes. Needs assessments are used to identify goals for continuous improvement.

Comprehensive Support and Improvement (CSI): One of two identification categories for school improvement described by the Every Student Succeeds Act. Schools that meet one of the following criteria are identified for CSI:

- The 5% of Title 1 schools most in need of supports.
- High schools that graduate less than two-thirds of their students.

Continuous Improvement: An ongoing process of improving school practice, based on assessed needs and informed by data. Often this process takes the form of a Rapid Learning Cycle / Plan-Do-Study-Act Cycle.

Data-Based Decision Making: The ongoing process of analyzing and evaluating student data to inform educational decisions, including but not limited to approaches in instruction, intervention, allocation of resources, development of policy, movement within a multi-level system, and disability identification.

Driver: The various components of the system believed to have the greatest influence on your goal.

Driver Diagram: The Driver Diagram is a method for organizing your Theory of Improvement and can be completed using the information collected during the comprehensive needs assessment process, becoming a record of learning and a roadmap for intervention. A driver

diagram shows the relationship between the overall SMART goal of your improvement project, the primary drivers that directly relate to achieving the goal, the secondary drivers that are components of the primary drivers, and specific change ideas to test for each secondary driver. (IHI QI Essential Toolkit: Driver Diagram, 2017)

Education Quality Standards (EQS): Replaced the former School Quality Standards (SQS), in 2014. These rules are designed to ensure continuous improvement in student performance, instruction and leadership, enabling all students to attain rigorous standards in high quality programs.

Evidence-Based Intervention: An intervention for which data from scientific, rigorous research studies have demonstrated (or empirically validated) the efficacy of the intervention. Applying findings from experimental students, single-case studies, or quasi-experimental studies, and evidence-based intervention improves student learning beyond what is expected without that intervention.

Fishbone Diagram: A cause and effect diagram or graphic tool used to examine and visually display possible causes of a certain effect or problem. (IHI Open School Quality Improvement Practicum Handbook)

Five-Whys Worksheet: A brainstorming tool that can help teams identify the root cause(s) of a problem, by asking a series of “why” questions to reach the specific root cause(s).

Local Educational Agency (LEA): School Districts and Supervisory Unions

Needs Assessment Team: A group of diverse stakeholders to collaborate with during the Comprehensive Needs Assessment process. The Education Quality Standards (pg. 14) state the continuous improvement plan shall be developed with the involvement of school board members, students, teachers, administrators, parents, and other community members.

Outcome Measure: measure the intended result of your change idea.

Primary Driver: Broad areas and components of the system that have the greatest influence on the goal.

Problem of Practice: A focused, learner-centered problem or hypothesis that has been identified through data collection and analysis and requires innovative solutions/interventions to reach the intended goal.

Process Measure: A measure used to determine whether the successful implementation of a change idea is occurring before outcomes are known. These strategies can be monitored formatively and approaches to change can be revised quickly (IHI, 2017).

Root Cause Analysis: a process designed to help identify what, how, and why a problem of practice occurred and inform you of how you can prevent the problem from recurring. Root causes are specific underlying causes that can reasonably be identified, are within your control to fix, and allow for recommendations and solutions (Rooney & Vanden Houvel, 2004).

Secondary Driver: Specific practices or components within identified primary drivers that influence a goal.

Shared Vision: A written statement of your team’s common beliefs and goals for school and student outcomes.

SMART Goal: A goal for improvement should be specific, measurable, attainable, realistic, and timebound describing what will be improved, by how much, by when, and for what/whom.

Theory of Improvement: A plan outlining actions necessary to achieve desired changes to reach your goal. It is usually written as an “If-Then” statement. A Theory of Improvement describes the structures and processes that the team believes need to be changed in order to meet an improvement goal, as well as, specific actions to create these changes (Provost & Bennett, 2015).

Appendix 1: Sources of School Data

Demographic	Student Outcomes	School Process	Perceptions
<ul style="list-style-type: none"> • School enrollment • Attendance • Graduation rate • Dropout rate • Transience • Homelessness • Migrant status • Socio-economic level • Age • Grade • Gender • Race • Ethnicity • Language • Disability • Staff characteristics • Parent profiles • <i>Additional</i> 	<ul style="list-style-type: none"> • State assessments • Local assessments • Curriculum-based measures • Proficiency measures • Formative measures • Grades • Portfolios • College and career readiness • School climate • Student health • Behavior data • Exclusionary discipline practices • English proficiency • <i>Additional</i> 	<ul style="list-style-type: none"> • Instructional practices • Assessment practices • Curriculum development • Curriculum alignment • Planning practices • Resources • Technology integration • Staff evaluations • Parent involvement • Leadership strategies • Grading • Data use • Scheduling • Collaboration • Hiring practices • Staff retention • Continuous improvement • Professional learning • <i>Additional</i> 	<ul style="list-style-type: none"> • Interviews • Focus groups • Conferences • Questionnaires • Surveys • Communication records • Meeting notes • Social media posts • Media coverage • Awards • Commendations • <i>Additional</i>

Appendix 2: Blank Worksheets

Shared Vision Worksheet

<p>Purpose: To develop or revise a Shared Vision representing the common beliefs of all stakeholders.</p>	
<p>Directions:</p> <ol style="list-style-type: none"> 1) Individuals should record their personal ideas in response to the guiding questions provided. 2) Small groups should convene to develop a shared response on a separate worksheet or large piece of paper. 3) The full group should assemble to merge small group work into a single, unified Shared Vision Statement that is written in the present tense. 	
Activities and Guiding Questions	Ideas and Responses
<p>Brainstorm Core Values and Beliefs</p> <ul style="list-style-type: none"> • What do we value in our students, our schools, our communities and ourselves? • What do we believe are the factors that support effective learning and positive outcomes for all? 	
<p>Brainstorm Core Purposes</p> <ul style="list-style-type: none"> • What is the purpose of our work with and on behalf of students? • What are we committed to providing to our students and stakeholders? 	
<p>Brainstorm Goals</p> <ul style="list-style-type: none"> • Based on our core values, beliefs and purposes, what are our goals for our students and school(s)? • What would the successful implementation of our core values, beliefs and purposes look like / what would the outcomes be for our students? 	
<p>Draft a Vision Statement</p> <ul style="list-style-type: none"> • With consideration for your team’s shared core values and beliefs, core purposes and common goals, write a narrative or statement(s) that captures your vision for your students and school(s). 	

Data Inventory

Purpose: To identify sources of data that can serve to form a broad overview of the current state of your school or school system.

Directions:

Identify school or district level measures that are currently available, and those that might be important to include in your overview. For each measure, include available details.

Data Available

Measure	Content Area or Type of Data	Stakeholders Represented	When Collected	Prepared By
1				
2				
3				
4				
5				
6				
7				

Additional Data Needed

Measure	Content Area or Type of Data	Content Area or Type of Data	Stakeholders Represented	When Available	Prepared By
1					
2					
3					
4					

Problem of Practice Worksheet

Purpose: To explore data within your selected Broad Area of Focus, ultimately arriving at a Problem (or Problems) of Practice.

Directions:

- 1) Record your Broad Area of Focus and sources of data to be considered.
- 2) As a team, make factual observations about the data presented, looking for trends, patterns, or discrepancies.
- 3) Infer meaning from your factual observations. What might the data be telling you?
- 4) Ask clarifying questions to be answered, based on your inferences, and assemble the additional data needed to answer them.
- 5) Repeat this activity with your additional data until you've identified a clear Problem(s) of Practice within your Broad Area of Focus.

Focus Area

Sources of Data

Factual Observations

Inferences

Clarifying Questions

Additional Data Needed

Problem of Practice

Cause and Effect Tool: Fishbone Diagram

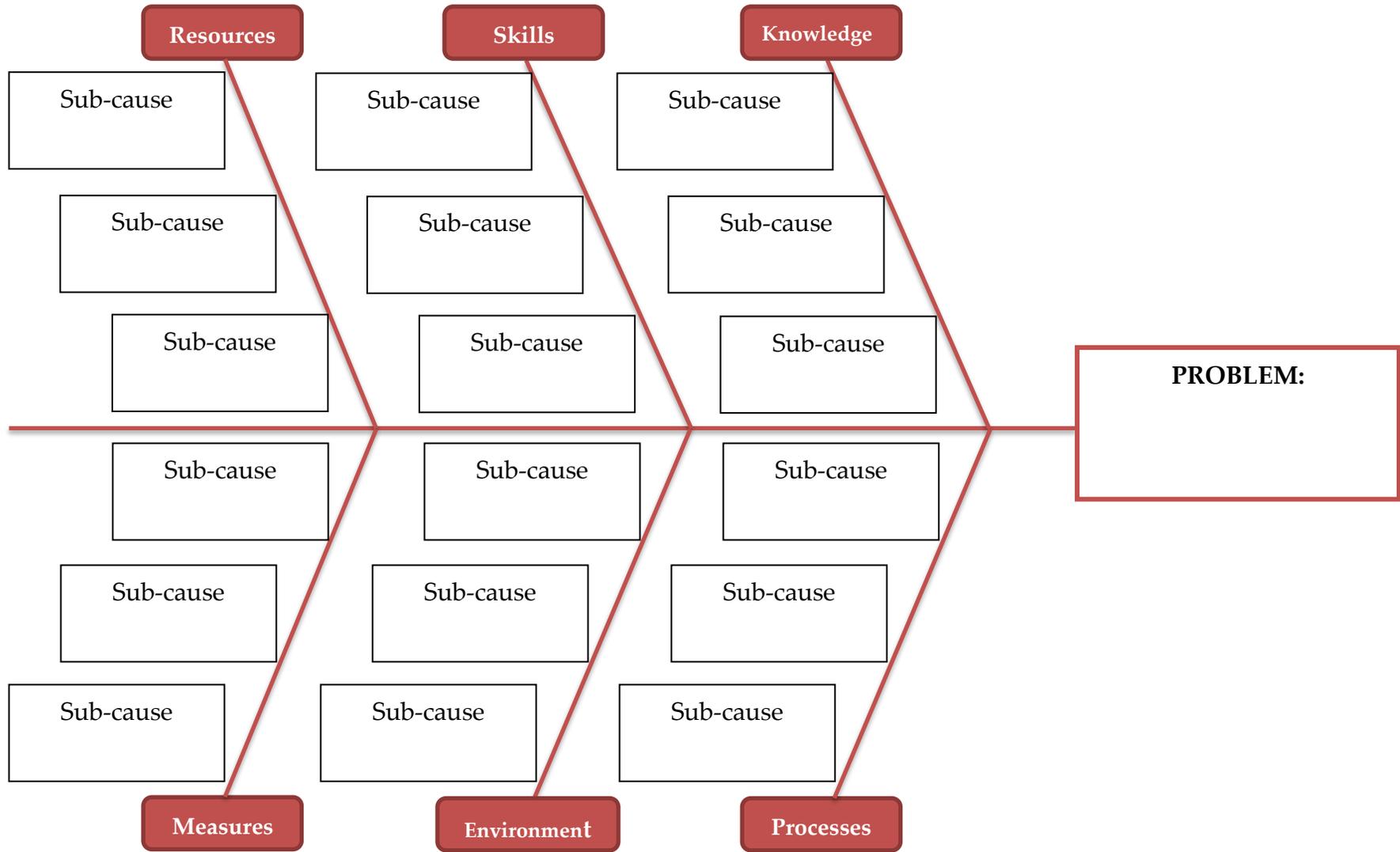
Purpose: To explore and examine the possible causes of a problem of practice.

Directions:

7. Write the Problem of Practice on the right-hand side of the page.
8. Decide on the categories of causes for the problem of practice. You may use the suggested causes, but keep in mind the categories used can vary depending on the problem. Be sure the categories you choose fit the problem.
9. Label the categories you have chosen in the blue boxes.
10. Brainstorm and collect a list of causes for each category you have chosen.
11. List the cause on each fishbone. If a cause has a secondary cause, draw a branch bone to show relationships among the causes.
12. Develop the causes by asking, "Why?" until you have reached a level of detail that is specific enough to be able to test a change and measure its effects.

Adapted from CCSSO and IHI Cause and Effect Tools

Cause and Effect Tool: Fishbone Diagram



The Five Whys Worksheet

Purpose: To determine an actionable Root Cause to a Problem of Practice by asking “why” multiple times.

Directions:

- 5) Record your identified Problem of Practice.
- 6) Start asking “why” related to the problem, keep asking why in response to each suggested cause. Use data to support your reasoning.
- 7) Continue asking “why” (asking five times is typical) until your team arrives at a fundamental Root Cause that is supported by data, within your control to address, and if the identified cause is addressed the problem will most likely go away.
- 8) You may discover that you have not found a plausible, evidence-supported Root Cause, at which point you might reconsider one or all of your “why’s”.

Reminders:

- You don’t want to list 5 different reasons, you want to go deep on one reason.
- If your last answer was something you can’t control, go back up to the previous answer on one reason.
- The final answer cannot be because of a person.



The Five Whys Worksheet

Problem of Practice:

Why is it happening?

1.

How do you know?
Supporting Data:

Why is that?

2.

How do you know?
Supporting Data:

Why is that?

3.

How do you know?
Supporting Data:

Why is that?

4.

How do you know?
Supporting Data:

Why is that?

5.

How do you know?
Supporting Data:

Identified Root Cause

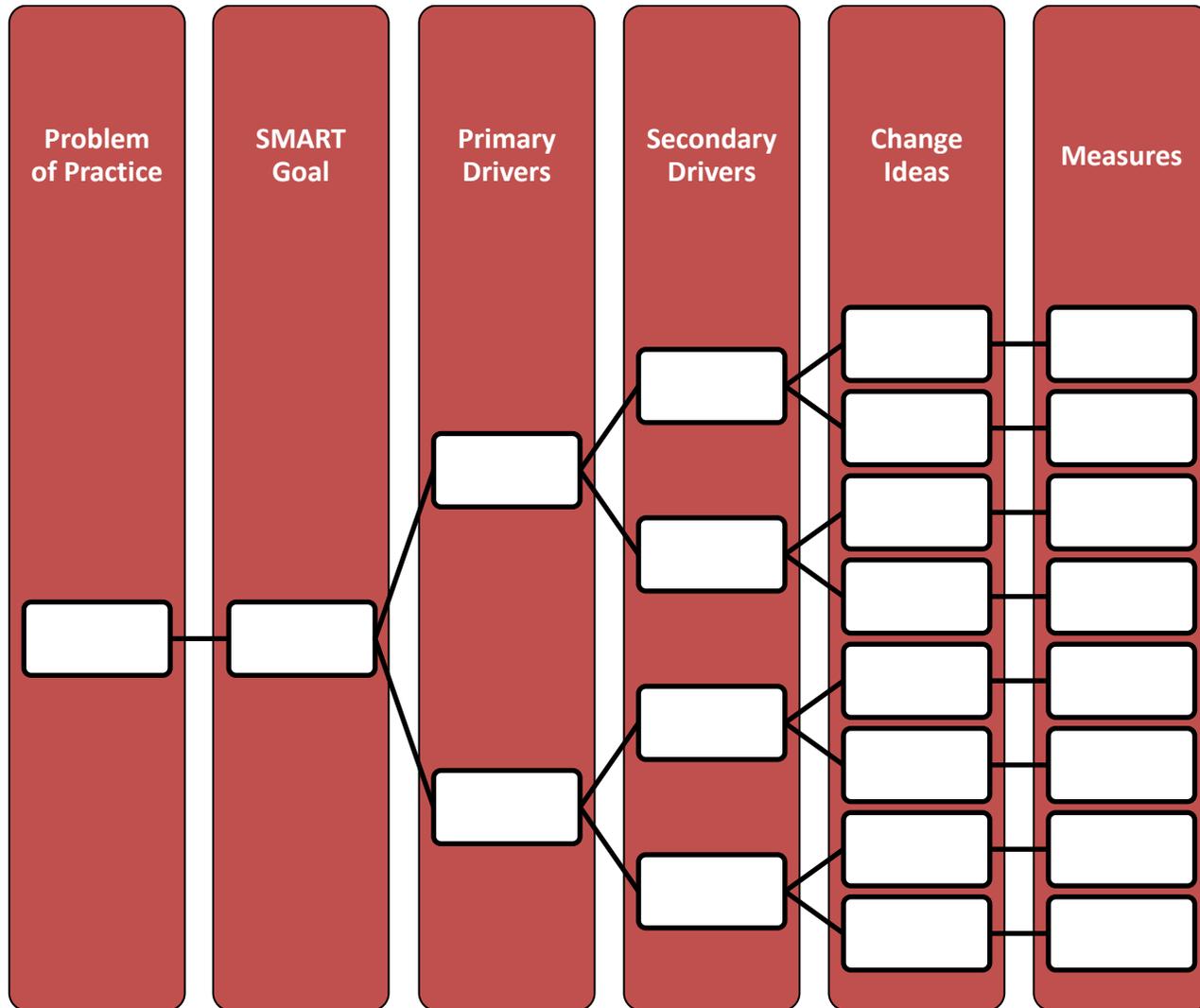
Driver Diagram

Purpose: To create a Theory of Improvement that guides the implementation of improvements.

Directions:

1. In the first box on the left, write the SMART goal for your improvement project (what will be improved, by how much, by when, and for what/whom).
2. In the boxes to the right of the SMART goal, list the Primary Drivers- the most significant influencers of your goal. Choose 2-5 to include.
3. In the boxes to the right of each primary driver, list as many secondary drivers that influence the primary driver as you can think of. Draw lines to connect each secondary driver to the primary driver (secondary drivers can connect to more than one primary driver).
4. In the boxes to the right of each secondary driver, list specific change ideas you will test to influence the secondary driver (change ideas can connect to more than one secondary driver).
5. In the boxes to the right of each change idea, list the process and outcome measures you will use to test the effectiveness of each change idea.

Driver Diagram



Appendix 3: Comprehensive Needs Assessment Specific to Consolidated Federal Program (CFP) Context

ESSA requires that State Education Agencies (SEA) and Local Education Agencies (LEA) conduct needs assessments "for schools identified for comprehensive support and improvement (CSI)" as well as "develop and implement a school improvement plan that is based on a school-level [Needs Assessment]."

Many ESEA Programs (Title I, Part A; Title I, Part C, Title II, Part A; and Title IV, Part A) also require LEAs to conduct a comprehensive needs assessment in order to identify needs that will be addressed with ESEA funds. In order to justify the use of ESEA funds, there must be a demonstrated need identified in the comprehensive needs assessment. The comprehensive needs assessment should identify performance challenges that encompass, or make connections to, the purposes of the various ESEA programs.

It therefore makes sense to design a Comprehensive Needs Assessment that will address various needs for information to inform planning, implementation and evaluation of impact.

LEAs are not required to use funds to address all needs identified in the assessment. Use of Title funds must focus on activities most likely to produce positive results in terms of instruction and student achievement.

<p>Title I, Part A</p> <p><i>Section 1112 (b)(1)</i></p> <p><i>Parent & Family Engagement Program Requirements under Section 1116</i></p>	<p>A comprehensive needs assessment to support the use of Title I, Part A funds must identify the specific needs of those students most at risk for academic failure and support the development of a well-rounded program of instruction to help these students meet challenging State academic standards. Included in planning is how the local educational agency will support, coordinate, and integrate services provided under this part with other PreK – 12 educational programs.</p> <p>Potential sources of data may include: school improvement data, student academic data, student enrollment data, student attendance data, results of program evaluations, equity survey, academic program evaluation for efficacy, school climate, behavior, parent and family engagement and other educational performance evaluations.</p>
<p>Title I, Part A Schoolwide Programs</p> <p><i>Section 1114 (b)(6)</i></p> <p><i>Section 1114 (b)(2)</i></p>	<p>Title I, Part A-served schools with a student population that is 40% or greater low-income are eligible to operate Schoolwide Title I programs. Through a Schoolwide program, a school may serve all students and may consolidate federal, state, and local education funds to address the needs of students in a flexible manner.</p> <p>A Schoolwide program plan must include a comprehensive needs assessment of the entire school, with particular attention to the needs of students who are failing or at risk of failing to meet the challenging State academic standards.</p> <p>Potential sources of data may include: school improvement data, student academic data, student enrollment data, student attendance data, results of program evaluations, equity survey, academic program evaluation for</p>

	<p>efficacy, school climate, behavior, parent and family engagement and other educational performance evaluations.</p>
<p>Title I, Part A School Improvement</p> <p><i>Section 1111(d)(1)(B)</i></p>	<p>Comprehensive support and improvement plans must be based on a school-level needs assessment, informed by a review of student performance indicators and a review of resource inequities.</p> <p>Potential sources of data may include: school improvement data, student academic data (Annual Snapshot), student enrollment data, student attendance data, results of program evaluations, equity survey, academic program evaluation for efficacy, school climate, behavior, parent and family engagement and other educational performance evaluations, Integrated Field Review report, MTSS self-assessment.</p>
<p>Title II, Part A</p> <p><i>Section (b)(2)(C)</i></p> <p><i>Section 2101 (d)(3)</i></p> <p><i>Section 2102 (b)(3)</i></p> <p><i>ESEA sections 8501</i></p>	<p>SEAs and LEAs are required to meaningfully consult with teachers, principals and other school leaders, paraprofessionals, specialized instructional support personnel, parents, community partners, and other organizations or partners with relevant and demonstrated expertise in programs and activities designed to meet the statutory purpose of Title II, Part A (Preparing, Training, and Recruiting High-Quality Teachers, Principals, and other School Leaders).</p> <p>In addition, coordinate the activities with other related strategies, programs or activities in the State or LEA; and provide for the equitable participation of private school teachers and other educational personnel in private schools and engage in timely and meaningful consultation with private school officials during the design and development of their Title II, Part A programs.</p> <p>Potential sources of data may include: school improvement data, student academic data, anticipated teacher supply and demand, student enrollment data, results of program evaluations, equity survey, current professional learning and impact on practice statements, and performance evaluations.</p>
<p>Title III, English Learners and Immigrant Students</p> <p><i>Section 3116 (b) and Non-Regulatory Guidance: English Learners and Title III of ESEA, as amended by ESSA.</i></p>	<p>A comprehensive needs assessment to support the use of Title III, Part A funds must identify the unique English language acquisition, cultural, and age/grade appropriate academic needs of English Learners (ELs) in order to plan, implement, and evaluate effective Language Instruction Educational Programs (LIEPs), professional learning activities, and engagement of parents, families, and communities of ELs. In developing and implementing their Title III plans, LEAs must ensure that they consult with stakeholders, including teachers, researchers, school administrators, parent and family members, community members, public or private entities, and higher education institutions.</p> <p>Potential sources of data to review in planning and goal setting to address identified needs may include: EL student demographic data (e.g., including enrollment, language, cultural and educational background, disability, graduation and dropout rates or other relevant info about English Learners, families, and communities; English language proficiency (ELP) assessment results (showing progress in meeting State ELP standards, attainment of proficiency, and exit from Title III services); standardized test scores demonstrating EL students' progress in meeting academic standards; formative measures; program and professional learning evaluations; focus groups or surveys for educators, students, and parents/communities.</p>



<p>Title IV, Part A Student Support and Academic Enrichment Grants</p> <p><i>Section 4106(d)</i></p>	<p>LEAs that receive a Title IV, Part A allocation that is \$30,000 or greater, must conduct a comprehensive needs assessment every three years to support the development of well-rounded educational opportunities for all students, improvements to school climate and conditions for student success, and the effective use of technology in teaching and learning.</p> <p>Potential sources of data may include: school improvement data, student academic data, student enrollment data, results of program evaluations, equity survey, current professional learning, impact on practice statements, performance evaluations, results from trauma informed and PBIS school outcome reports or data, IDEA data, and results of School Climate Survey.</p>
<p>Title I Part A, VII-B, IX and X for Students Experiencing Homelessness</p> <p><i>Education for Homeless Children and Youth Program Non-Regulatory Guidance Title VII-B of the McKinney-Vento Homeless Assistance Act, as amended by ESSA.</i></p> <p><i>Section 723(c) (2)</i></p> <p><i>Section 722(g)(A)</i></p>	<p>Under Vermont statute, all LEAs who receive Title I, Part A funds must reserve at least \$500 to meet the specific needs of students PreK-12 who are experiencing homelessness in accessing equitable educational opportunities. Determinations of the specific needs of this population must be included in a comprehensive needs assessment to support Title I, Part A spending.</p> <p>An LEA application for a McKinney-Vento sub-grant must include an assessment of the educational and related needs of homeless children and youth, ensuring that students experiencing homelessness in grades PreK– 12 are identified and that these children and their families receive all services for which they are eligible. LEA needs assessments must include all identified McKinney-Vento sub-groups, as appropriate, including: migrant, Native American, Neglected and Delinquent, Special Education and Unaccompanied Youth.</p> <p>LEA needs assessment must include data that ensures all McKinney-Vento Educational programs do not segregate or stigmatize eligible families, students or unaccompanied youth.</p> <p>Potential sources of data may include: school improvement data, student academic data, student enrollment data, end-of-the-year homeless student census report, Act 166 data, results of program evaluations, equity survey, input from community partners, Housing and Urban Development Annual Homeless Report for Vermont, data from The Vermont Governor’s Council on Ending Homelessness and Vermont Coalition for Runaway and Homeless Youth data.</p>

Adapted from Every Student Succeeds Act: Guiding LEA Needs Assessment and Plan Development to Consider Early Learning (Mid-Atlantic Comprehensive Center).



Appendix 4: Continuous Improvement Plan Template and Guiding Text

Phase 1: Assess and Innovate

Collaborative Stakeholders Represented: *The plan shall be developed with the involvement of school board members, students, teachers, administrators, parents and other community members (EQS p. 14)*

Shared Vision: *In developing or strengthening school vision, teachers, families and community members collectively agree on their desires for students and community. It is a written statement of your team's common beliefs, values, and goals for school and student outcomes.*

Broad Area(s) of Focus Based on Data Review: *Describe the broad areas of focus, directly related to state long-term goals (e.g., instruction and assessment for academic proficiency; framework for personalized learning, etc.). *Ensure that broad areas of focus adhere to Title I Schoolwide Program Requirements (if applicable) [Schoolwide Plan Checklist](#)*

Identified Priority Problems/Problems of Practice:** *Based on the identified broad areas of focus, describe the prioritized problems for which you intend to seek innovative solutions/interventions. *Ensure that problems of practice adhere to Title I Schoolwide Program Requirements (if applicable) [Schoolwide Plan Checklist](#)***

Root Cause Analysis Results: *Provide a narrative describing the results of your root cause analysis for prioritized problems; include the major factors contributing to each problem. Please use the Comprehensive Needs Assessment toolkit and cause and effect diagram to conduct a thorough causal analysis for each problem of practice.*

Theory of Improvement/Action: *Based on data analysis, needs assessment results, and supporting research, define your theory of improvement using "If...then..."statements. **Attach Driver Diagram***

Plan for Improvement

<p>What do we want to accomplish? SMART Goal(s)</p>	<p><i>Please describe 1-3 priority goals related to your problems of practice and underlying causes, one of which must be directly targeting Academic Proficiency and one of which must be creating School Safety and Climate. These goals should be specific, measurable, attainable, realistic, time-bound and answer the following questions: What are you trying to accomplish? For whom? By how much? By when?</i></p> <p><i>Ensure goals are congruent with eligibility status requirements.</i></p> <p><i>Connection to EQS: The plan shall include indicators provided by the Vermont Agency of Education as well as additional indicators determined locally. These indicators will identify student performance data obtained from state and local assessments and other information... These goals must include: objectives for improved student learning; educational strategies and activities specifically designed to achieve these goals, including professional learning of administrative and instructional staff; strategies and supports to ensure the school maintains a safe, orderly, civil and positive learning environment which is free from harassment, hazing and bullying (EQS p. 14)</i></p> <p><i>*Ensure that goals adhere to Title I Schoolwide Program Requirements (if applicable) Schoolwide Plan Checklist</i></p>
<p>What change(s) can we make that will result in improvement?</p>	<p><i>Please list the broad changes or strategies you intend to explore, related to your goals and problems of practice. You may further operationalize/specify some of these ideas once you decide which changes you plan to test using plan-do-study-act cycles of learning.</i></p> <p><i>Ensure change ideas are congruent with eligibility status requirements:</i></p> <p><i>The PDSA process is intended for testing small scale changes to build confidence in their efficacy prior to full implementation and scale (NOT all changes warrant a PDSA and tests should be limited to no more than a few PDSAs at a time, related to a specific change idea). For those change ideas you wish to test at this level, please apply the improvement project template (Phases 2-4). Other change ideas that do not warrant a PDSA may be evaluated for impact using other methods (e.g., program evaluation). You can monitor your progress toward goals in the Yearly Summary attachment of the CIP (see below). There is NO expectation regarding a number of PDSAs to complete or due dates for completion, as it is determined by local data and context.</i></p>

How will we know our change(s) resulted in improvements?	<i>In specific terms, describe the measures you are using to determine progress. These may include a variety of quantitative and qualitative measurement instruments, including (but not limited to) surveys, observation protocols, interview protocols, progress monitoring tools, benchmark or interim assessments, and performance/outcome assessments.</i>
Funding Source(s)	<i>Please indicate which funding sources you are using for each of your change ideas.</i>

Yearly Summary			
Goal	Related Change Ideas	Measures	Results so far/Progress
<i>Please list active goals from the past year</i>	<i>Please list your change ideas related to those goals</i>	<i>Please list the ways in which you measured improvement (PDSA test/pilot cycles, program evaluation, etc.</i>	<i>Please describe your progress so far (upload relevant documents as needed)</i>

Phase 2: Test the Change Idea: Plan-Do-Study-Act Improvement Cycles

From your broad selection of change ideas listed in your CIP, Select those for which you intend to explore deeply through PDSA test cycles. Describe in specific terms, well-defined change ideas you plan to test with rapid PDSA cycles. These changes must be at a fine grain size so that they can be easily tested and measured. Use as many cycles as needed to learn, revise, and ensure the change is an improvement ready for full implementation, spread and scale (Attach/upload PDSA worksheets for each cycle of each change idea). Once you have developed confidence (based on strong data) in the change idea, you can move on to the implementation phase.

Attach PDSA Worksheet: This submission is required only for schools eligible for comprehensive supports and SIG 1003g supports.

Phase 3: Implement and Spread

This phase involves making plans and decisions for full implementation and for spreading the change across classrooms and/or schools. Explain how you will implement, spread, and scale the successful practices and processes tested during this improvement cycle; include personnel, financial resources, scheduling, and potential organizational/structural modifications.

Phase 4: Sustainability

This phase involves planning and making decisions about how resources will be allocated and how your organization will sustain the implemented changes.