



# Using Data for Improving School and Student Performance

DATAUSE: Comenius Multilateral Project 510477-2010-LLP-PL Grant Agreement: 2010-4113/001-001

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## Presentation slides

# Module 1: Getting Started

September 2011



UNIVERSITY OF TWENTE.



# Agenda

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- Introductions
  - Data use framework
  - Course structure
  - Requirements
- Norm-setting
- Using data in your school
- Organising for collaboration
- Wrap up



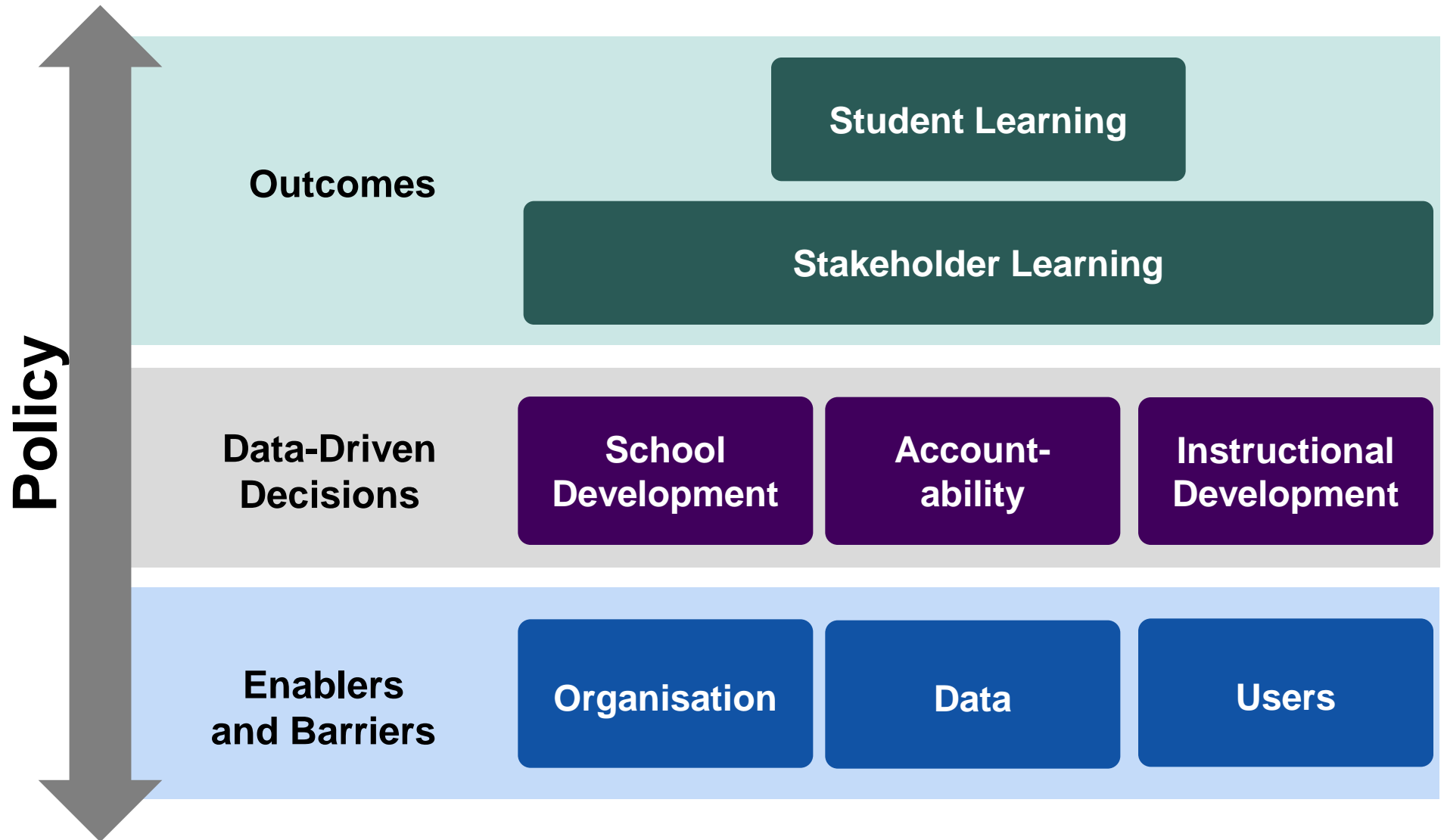
# Course Goal

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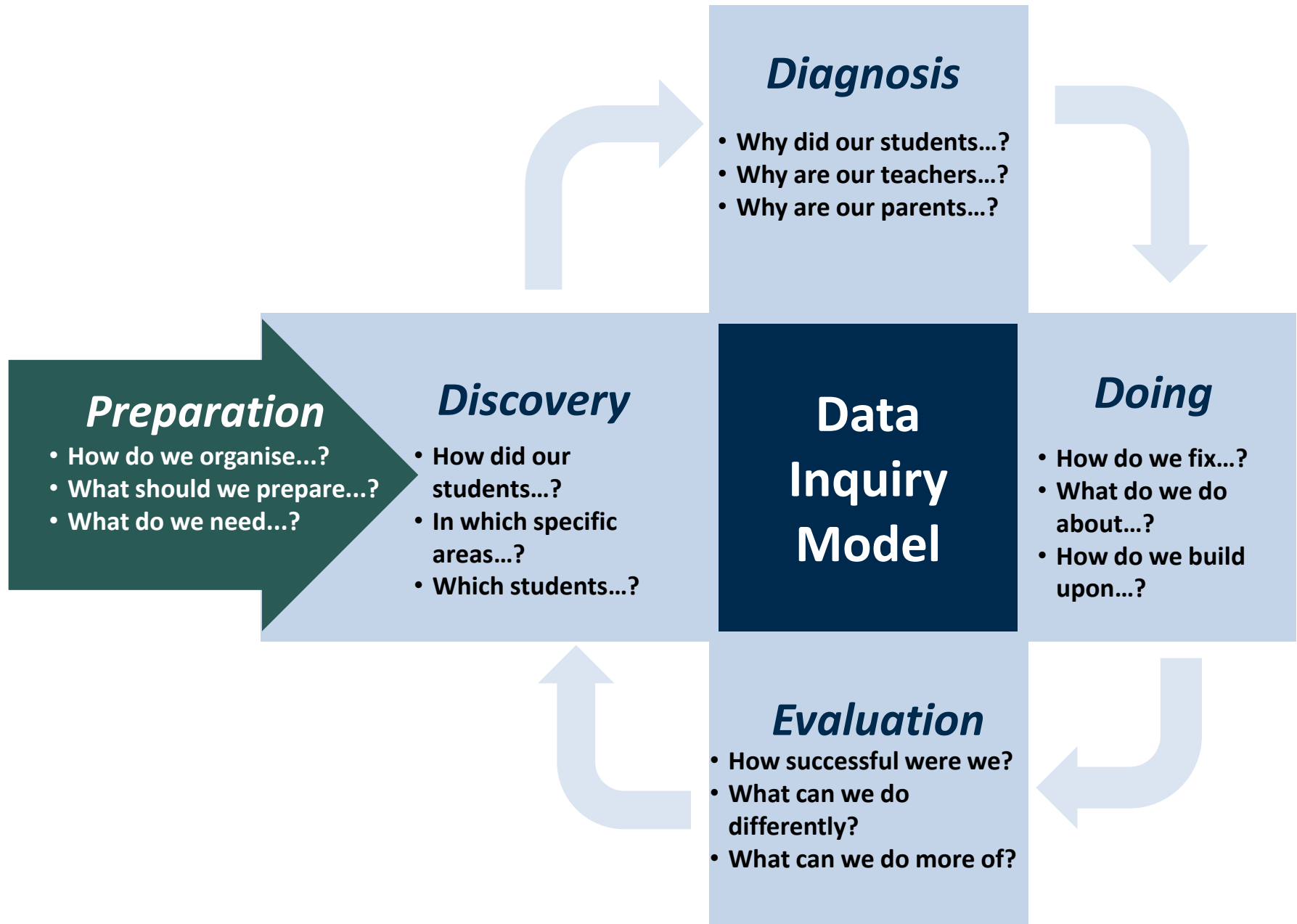
To build the collective capacity of your Professional Learning Community (PLC) to use data effectively to make decisions that will promote continual school improvement, by use of:

- Technical skills
- Analytic skills
- Collaborative skills

# Framework for Data Use



# Framework for Data Use



# Course Structure and Requirements

## 11 core modules

- 1.5 to 2 hour training sessions
- Facilitated by data coach

<b>Preparation</b> How do we organise for data use?	Module 1: Getting Started Module 2: Data Literacy
<b>Discovery</b> What's the issue or problem?	Module 3: Identifying a Problem Module 4: Evaluating Data
<b>Diagnosis</b> What's the root cause?	Module 5: Analysing Discovery Data Module 6: Hypothesising Root Causes Module 7: Analysing Root Cause Data
<b>Doing</b> What are we going to do about it?	Module 8: Brainstorming Initiatives Module 9: Developing Action Plans Module 10: Monitoring Implementation
<b>Evaluation</b> What results did we get?	Module 11: Preparing for Evaluation

# Course Structure and Requirements

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- Each module includes:
  - Learning objectives enabling PLCs to use data effectively and make decisions
  - A suite of tools and resources to help PLCs apply best practices
  - Action items for PLCs to complete prior to the next training session

# Module 1 Objectives

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1. Describe the framework for data use.
2. Create norms to promote effective collaboration.
3. Analyse survey results to identify perceived strengths and weaknesses in the use of data in your school.
4. Use communication tools to help make the work of your PLC transparent to all stakeholders in your school community.
5. Use tools and strategies to organise for effective collaborative work.

# How do you feel about using data for decision-making?

**1**

“Not comfortable. I’m a little nervous.”

**2**

“Somewhat comfortable but I have lots of questions.”

**3**

“Comfortable, but I need more specifics.”

**4**

“Very comfortable. I can help others, if needed.”

## Objective 1:

# Create Norms

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- How does our PLC function as a team?
  - Do we collaborate?
  - Are we efficient?
  - Are we effective?
  - Do we make a difference?

## Objective 1:

# Create Norms

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- Do we have norms to guide our behaviour?
  - Schools have norms to guide student behaviour.
  - Classrooms have norms to guide student behaviour.
  - What about us?

## Objective 1:

# Create Norms

## 1.1 Norm Setting Activity

### Purpose

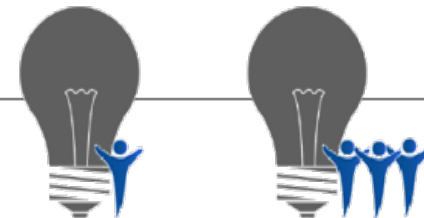
To provide an opportunity for your PLC to develop consensus on the rules or standards that will govern your meetings and the way you do business.

### Description

Each team member will write down rules or standards that they feel support the efficient and effective functioning of the PLC. Team members will then share their ideas and record those that every member can agree to follow and uphold. These will become the “norms” that guide your work. After the PLC reaches consensus, publish and frequently consult your team norms.

### Time

20 minutes



## Objective 1:

# Create Norms

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- Examples of established team behaviours:
  - Commitment to having every team member heard
  - Commitment to meeting obligations
  - Commitment to attend all meetings
  - Commitment to stay focused on agenda

- Examples of team procedures:
  - Agenda distributed prior to meeting
  - Meeting notes distributed after meeting
  - Assigned recorder for each meeting

## Objective 2:

# analyse Data Use

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- What is the current state of data use in our school?
  - Data Use Survey distributed to all staff (April 2011)
  - Review of aggregate results (prior to current session)

**Let's see what the results (data) tell us!**

# analyse Data Use

## 1.2 Data Use Survey Analysis Activity

### Purpose

To analyse the aggregate faculty perceptions about the current state of data use in your school and to reach consensus within your PLC on general areas of strength and areas of need.

### Description

Prior to the session, each team member will review the Data Use Survey results aggregated across all school faculty members. During this activity, you will individually rank strengths and areas of need in broad categories, then reconvene as a team to discuss your rankings and how they apply to your group's overall perception of data use within your school. Your team will then work together to identify three areas of strength and three areas of need.

### Time

60 minutes



# Effectively Communicate

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- How do we organise ourselves to...
  - assure transparency in our work?
  - communicate results of the Data Use Survey?
  - communicate PLC activities to stakeholders?

# Effectively Communicate

## 1.3 – Communication organiser template

Finding or message to be communicated:	
Audience (check all that apply):	
<input type="checkbox"/> Governing body	<input type="checkbox"/> School faculty/department
<input type="checkbox"/> Students	<input type="checkbox"/> Parents
<input type="checkbox"/> Other:	
What does the audience need to know? List items for each audience identified.	
Anticipated audience reaction:	
What would we like the audience to do with the information? List items for each audience identified:	
Mode of Communication (check all that apply):	
<input type="checkbox"/> Written report	<input type="checkbox"/> Website
<input type="checkbox"/> Data wall displays	<input type="checkbox"/> Informal communication
<input type="checkbox"/> Email	<input type="checkbox"/> Presentation
<input type="checkbox"/> Other:	
Communication timeline:	Person or team responsible for communication:

## Objective 4:

# Use Tools and Strategies

## 1.4 – PLC Data Meeting Agenda Template

School:	
Meeting Date:	

Agenda		
Item #	Subject	Presenter

*Add additional rows as needed.*

Resources	
Items/Resources to Bring to Meeting	Items/Resources to Be Distributed at Meeting

*Add additional rows as needed.*

PLC Norms
<i>List all norms established and recorded by the team – this list should appear on all meeting agendas.</i>

**Objective 4:**

# Use Tools and Strategies

## 1.5 – PLC Data Meeting Notes Template

School:		
Meeting Date:		
Submitted by (name):		
Submitted date:		
Members present:	Name	Role

Agenda Item #:	
Subject:	
Discussion:	
Decisions/Action Steps:	
Person Responsible:	
Timeline:	

*Insert rows for additional agenda items*

Items for the next meeting agenda:	
Actions needed prior to next meeting:	


# Building Your First Agenda

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Let's collaboratively develop  
the agenda for our first  
meeting!

# Wrap Up: In Section 1, we...

- Set the stage for your year's study and work.
- Set team norms.
- Identified perceived data use strengths and areas of need in your school.
- Organised a plan to communicate results of the Data Use Survey and our activity as a PLC.

<b>Preparation</b> How do we organise for data use?	<input checked="" type="checkbox"/> Module 1: Getting Started <input type="checkbox"/> Module 2: Data Literacy	
<b>Discovery</b> What's the issue or problem?	<input type="checkbox"/> Module 3: Identifying a Problem <input type="checkbox"/> Module 4: Evaluating Data	
<b>Diagnosis</b> What's the root cause?	<input type="checkbox"/> Module 5: analysing Discovery Data <input type="checkbox"/> Module 6: hypothesising Root Causes <input type="checkbox"/> Module 7: analysing Root Cause Data	
<b>Doing</b> What are we going to do about it?	<input type="checkbox"/> Module 8: Brainstorming Initiatives <input type="checkbox"/> Module 9: Developing Action Plans <input type="checkbox"/> Module 10: Monitoring Implementation	
<b>Evaluation</b> What results did we get?	<input type="checkbox"/> Module 11: Preparing for Evaluation	

# Wrap Up: Next Steps

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1. Develop an agenda for a meeting to be held prior to your next session.
2. Use the Meeting Notes Template to record the results of the meeting.
3. Use the Communication Organiser Template to help develop and distribute communications on:
  - The results of the Data Use Survey and your findings to the school community
  - Goals of the data use project to stakeholders



# Using Data for Improving School and Student Performance

## Module 2: Data Literacy

October 2011



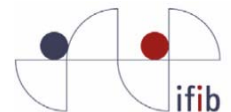
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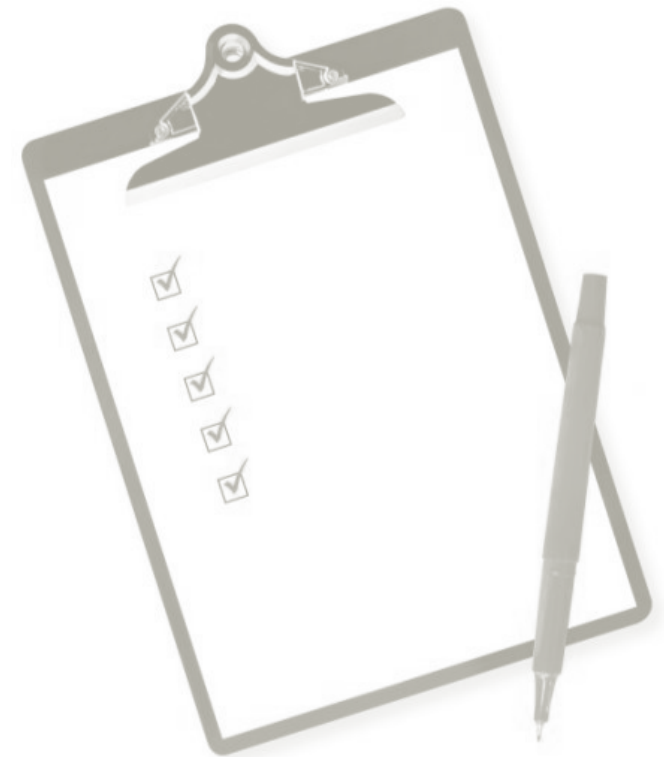


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# Agenda

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- Introduction
- Data Use Terms and Concepts
- Inventory and Describe Assessments
- Developing a data inventory
- Asking questions
- Wrap up
  - Evaluation Survey



# What have we accomplished?

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1. Developed an agenda for a meeting held prior to this session.
2. Used the PLC Data Meeting Notes template to record the meeting results.
3. Used the Communication Organiser Template to help develop and distribute communications.

# Effective Team Meeting Checklist

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- We clearly communicated the meeting time and place to everyone.
- I know where our meeting norms are published.
- We started on time.
- We used an agenda for the meeting.
- A moderator led the meeting.
- We appointed a note-taker and he/she took notes.
- Notes were published to all team members.
- We made it through all the agenda items
- We captured action items, the people responsible and timelines.
- We published our notes to all team members.
- We ended on time.
- All team members were present.

**Number of Ticks:** \_\_\_\_\_

# Module 2 Objectives

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1. Understand data use terms and concepts.
2. Describe the types of assessments used in your schools
3. Collaboratively create a data inventory that documents all data available in your school.
4. Prepare to identify a significant student related issue to investigate

## Objective 1:

# Understand Data Use Terms and Concepts

## 2.1 Understanding Data Use Terms and Concepts

### Purpose

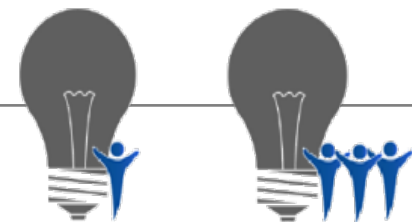
To develop a shared understanding of common data use terms and concepts.

### Description

This activity provides PLCs with an opportunity to rate their individual understanding of common data use terms and concepts and then, as a group, confirm or improve their understanding.

### Time

30 minutes



## Objective 2:

# Describe Assessments

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- Much of the analysis data come from assessments
- Different types of assessments provide different kinds of data
- A basic knowledge of assessment types, terms, and concepts promotes appropriate interpretation of assessment data

# Describe Assessments

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- Major Types of Assessments:
  - Criterion Referenced Tests (CRT): Performance judged against a standard
  - Norm Referenced Tests (NRT): Individual's performance relative to a group's performance

# Describe Assessments

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## 2.2 Understanding Assessments Used in Your School

### Purpose

To develop a shared understanding of the school's assessments.

### Description

You will list and describe all of the different types of assessments used in your school and determine if they are criterion referenced or normative measures. You will also describe how each assessment is used.

### Time

30 minutes



## Create a Data Inventory

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- What data do we have to address issues and problems?
  - The school undoubtedly collects a large amount of assessment data.
  - The school most likely collects other types of data, too.
  - The school may not collect some data elements that your PLC Data Team will need.

# Create a Data Inventory

## 2.3 Creating an Inventory of Data in Your School

### Purpose

To collaboratively identify and describe the data that the school has and other data that you may need.

### Description

You will collaboratively compile an inventory of the major types of data currently available in your school, describe the data, rate the accessibility of the data, and outline how the data is currently being used.

You will also have the opportunity to identify additional data elements, not currently available, that would help to support your PLC's inquiry.

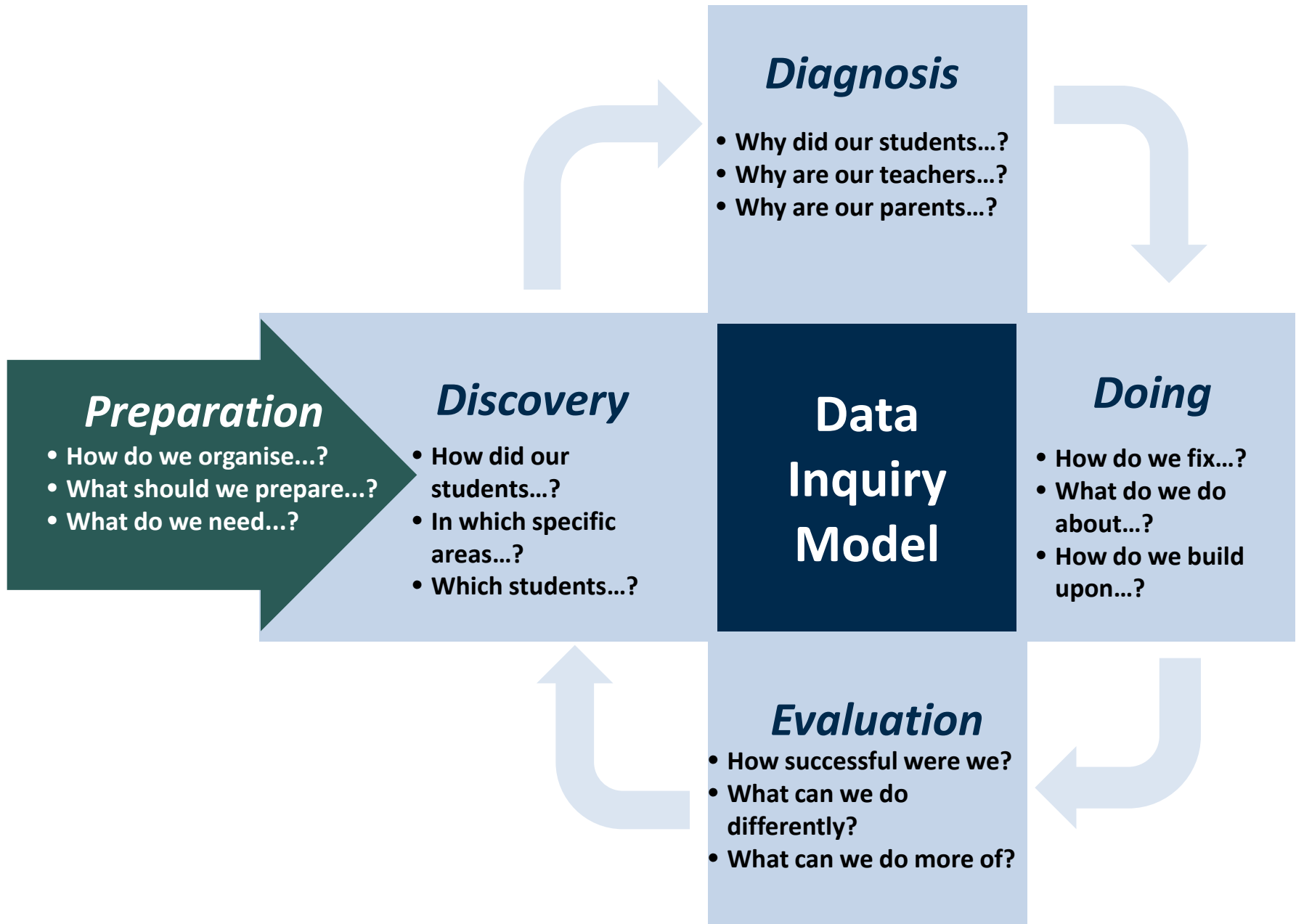
### Time

10 minutes to begin filling out the template



Objective 4:

# Asking the Right Questions



## Objective 4:

# Example Discovery Questions

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### ■ **Assessment Performance**

- Are performance gaps between various subgroups decreasing over time?
- What differences do we see in performance as students move through the school?
- In which areas do we need to improve teaching and learning?

### ■ **Assessment Performance across Subjects**

- What is the relationship between students' reading proficiency and their performance in maths and science?
- Does the apparent impact of reading on maths and science performance differ across subgroups?

### ■ **Attendance**

- What are the characteristics of students who have the highest and lowest absence rates?
- What is the relationship between school absences and performance in tests and examinations?

# Example Discovery Questions

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## ▪ Teacher assessment

- What is the relationship between teacher assessments and test and examination performance?
- What are the options choice patterns of subgroups of students?
- What are failure rates across subgroups of students?

## ▪ Enrolment

- How do the student characteristics in my school compare with those in other schools?
- What are the characteristics of students within and across year groups?

## ▪ End of KS4

- What are the characteristics and performance of students who achieve 5+ A\*-C?
- What proportion of our Year 11 students have been in the school for four years, three years, two years, one year or less than one year?
- What percentage of students are older than 16 at the end of KS4?
- What were the KS2 scores of students who didn't achieve 5+ A\*-C?

## Objective 4:

# Example Discovery Questions

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### ■ Incoming Students

- Do previous assessment results indicate the need for targeted intervention and instruction support in Year 7?
- What are the characteristics of new students and how do they differ from previous classes?

### ■ Persistent absence

- What are the characteristics and performance of persistent absentees?
- What is the distribution of persistent absences over the school year?
- What subgroups of students have the highest percentage of persistent absence?

## Objective 4:

# Example Discovery Questions

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### ■ Special Educational Needs

- Is there over-representation in the special educational needs population by gender or race/ethnicity?
- Is there over-representation in any disability category or subject?
- Which special educational needs services/interventions are improving student performance and reducing the percentage of students performing at the lowest levels?

### ■ Transfers

- What are the characteristics and performance of students who transfer to other schools?
- Where are transfer students going?
- What is the distribution of transfers over the school year?


# Identifying a “good” problem

---

- How do we know if we are investigating a “good” issue or problem? Consider:
  - Is the issue something that is within your control to change or impact?
  - If the issue is solved, will there be a significant impact on teaching and learning in the school?
  - Is the data available or can data be collected to inform your decisions about the issue?
  - Are you looking at the issue or problem at the “Discovery” stage of the inquiry process?

# Wrap Up: In session 2, we...

- Increased our knowledge of the assessments currently in use in the school.
- Established a shared understanding of data use terms and concepts
- Began to make an inventory of the data that is available, or should be available, in our school.
- Set the stage to identify “good” issues or problems that we would like to investigate.

<b>Preparation</b> How do we organise for data use?	<input checked="" type="checkbox"/> Module 1: Getting Started <input checked="" type="checkbox"/> Module 2: Data Literacy	
<b>Discovery</b> What’s the issue or problem?	<input type="checkbox"/> Module 3: Identifying a Problem <input type="checkbox"/> Module 4: Evaluating Data	
<b>Diagnosis</b> What’s the root cause?	<input type="checkbox"/> Module 5: Analyzing Discovery Data <input type="checkbox"/> Module 6: Hypothesizing Root Causes <input type="checkbox"/> Module 7: Analyzing Root Cause Data	
<b>Doing</b> What are we going to do about it?	<input type="checkbox"/> Module 8: Brainstorming Initiatives <input type="checkbox"/> Module 9: Developing Action Plans <input type="checkbox"/> Module 10: Monitoring Implementation	
<b>Evaluation</b> What results did we get?	<input type="checkbox"/> Module 11: Preparing for Evaluation	

# Wrap Up: Next Steps

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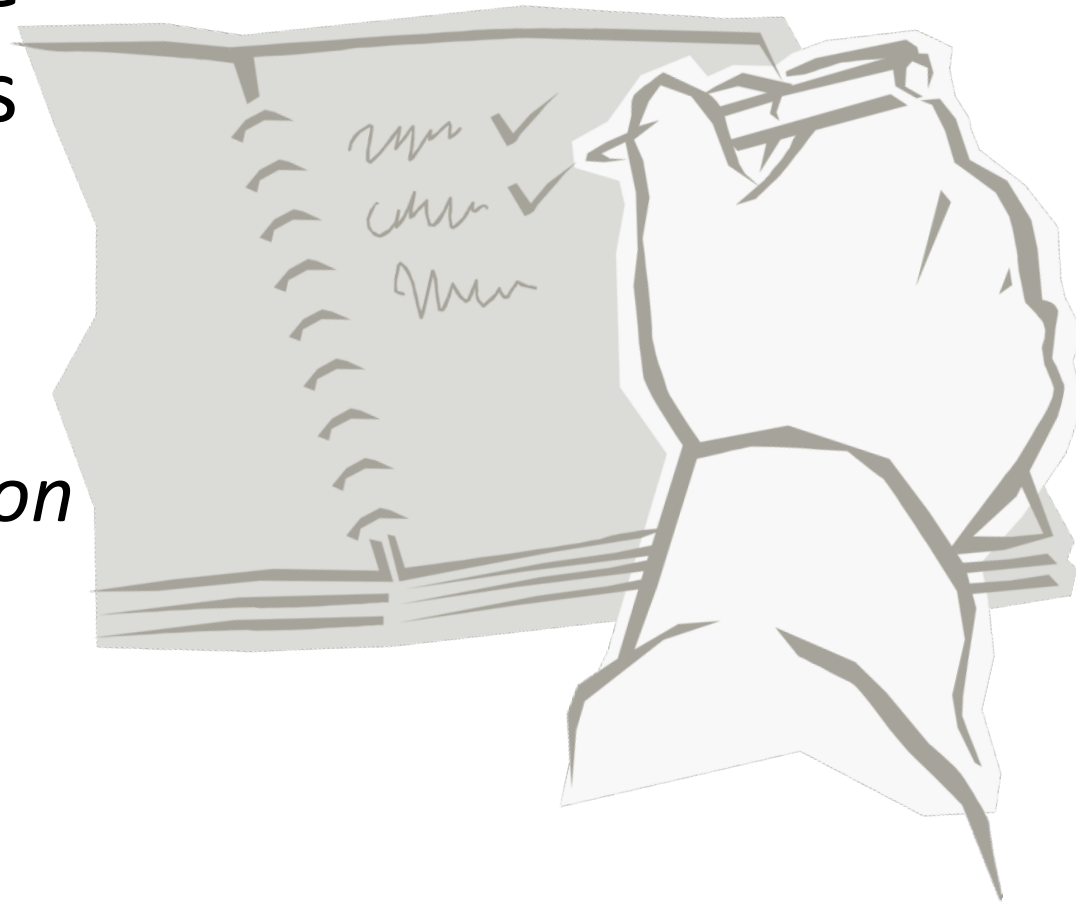
1. Individually, review the examples in “2.4 – Asking the Right Questions” to begin to identify issues for investigation.
2. Meet as a team to identify several issues or problems to investigate. (Remember to develop an agenda and record meeting minutes any time the team meets!)
3. Bring your issues or problems to our next session for refinement.
4. Continue to develop the data inventory. Bring the completed Inventory to the next session.

# Evaluation

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Please complete an evaluation of this course and your work up to this point.

*For this evaluation, reflect on your experiences from **Modules 1 and 2.***





# Using Data for Improving School and Student Performance

## Module 3: Identifying a Problem



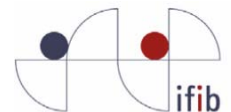
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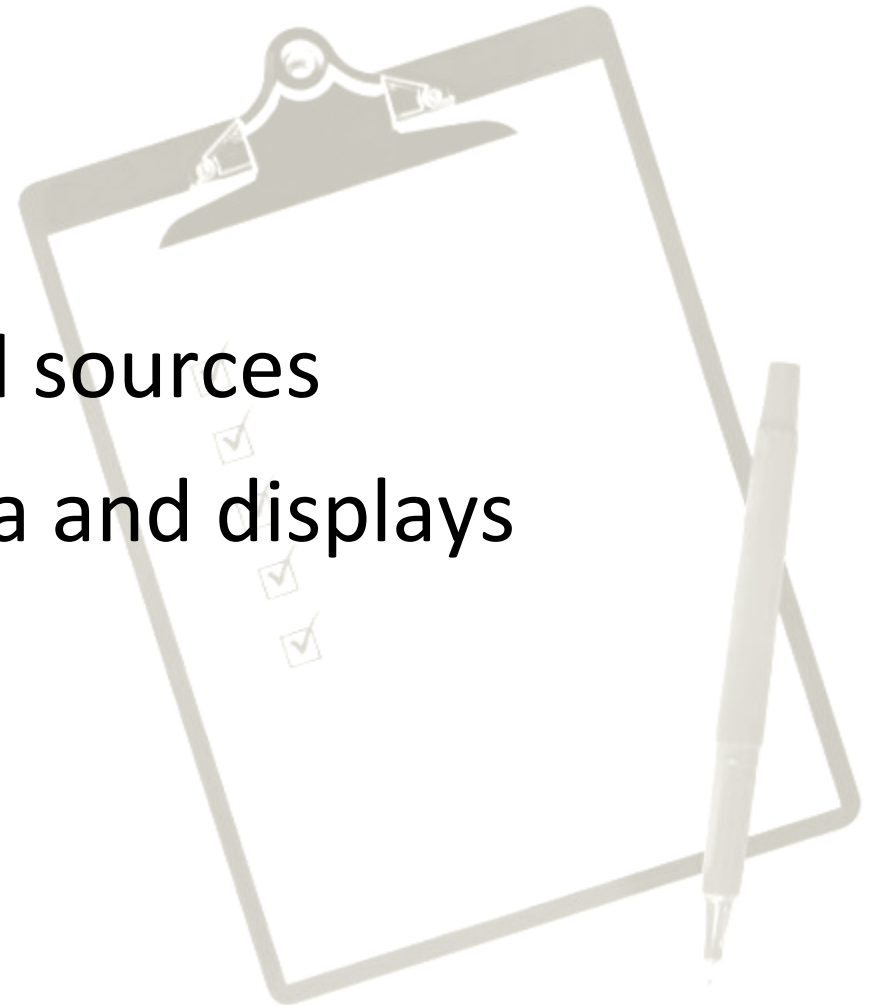


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# Agenda

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- Introduction
- Formulating questions
- Identify data elements and sources
- Recognise high quality data and displays
- Wrap up



# What have we accomplished?

---

1. Met as a team to identify several issues or problems to investigate.
2. Brought issues or problems to this session for further refinement.
3. Continued to develop the data inventory.

# Effective Team Meeting Checklist

---

- We clearly communicated the meeting time and place to everyone.
- I know where our meeting norms are published.
- We started on time.
- We used an agenda for the meeting.
- A moderator led the meeting.
- We appointed a note-taker and he/she took notes.
- Notes were published to all team members.
- We made it through all the agenda items
- We captured action items, the people responsible and timelines.
- We published our notes to all team members.
- We ended on time.
- All team members were present.

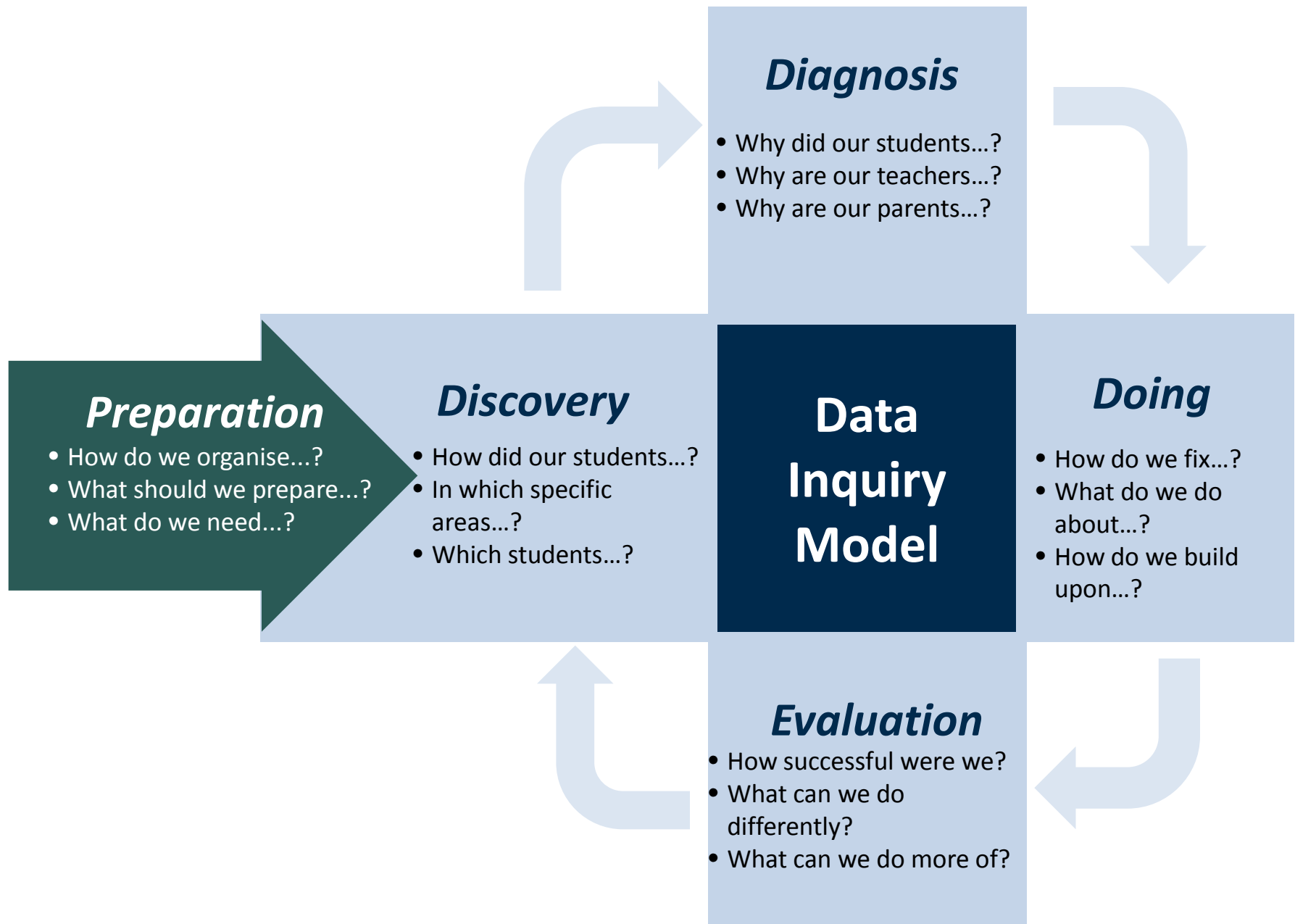
**Number of ticks:** \_\_\_\_\_

# Module 3 Objectives

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1. Identify a critical problem or issue in the school on which to focus your inquiry.
2. Develop a discovery focusing question that will help the PLC accurately define and describe the problem or issue.
3. Identify data elements and sources that will help inform the discovery process.
4. Recognise high quality data and describe the characteristics of a good data display.

# Identify a Problem or Issue



## Objective 1:

# Identify a Problem or Issue

## Context

- Student Characteristics
- Special Educational Needs
- Students with English as a second language
- Transfers
- Curriculum

**Equity, accountability, and  
continuous improvement**

## Engagement

- Attendance
- Staying-on post-16
- Retention
- Persistence

## Achievement

- Performance Within a Subject
- Performance Across Subjects
- Teacher assessment
- Test and examination performance
- Other Assessment Performance

## Objective 1:

# Identify a Problem or Issue

---

## Focusing Questions

Focusing questions give you a starting point to help you identify the data you need to analyse.



## Clarifying Questions

Clarifying questions are generated from your initial data analysis and may require additional data.



## Objective 1:

# Identify a Problem or Issue

### Focusing Question:

Are all students or just certain groups of students in my school having difficulty in mathematics?

### Data Analysis!



### Clarifying Questions:

- What do these students have in common?
- What specific areas of maths are causing the most difficulty?
- Has this been a problem over time?

## Identify a Problem or Issue and Develop a Focusing Question

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### ■ Sample Focusing Questions

- Are performance gaps between various subgroups decreasing over time?
- What differences do we see in performance as students move through the school?
- In which areas do we need to improve teaching and learning?
- What is the relationship between students' reading proficiency and their performance in maths and science?

# Identify a Problem or Issue and Develop a Focusing Question

---

## 3.1 Focusing Question Formulation

### Purpose

To work from a broad starting point to develop a question that will focus the inquiry.

### Description

Through the use of brainstorming techniques, the question formulation activity will help your PLC Data Team develop, organise, and prioritise questions that guide the inquiry process.

### Time

About 30 minutes



# Develop a Focusing Question

---

- How do we know if we are investigating a “good” focusing question? Consider:
  - Is the question something that is within our control to change or impact?
  - Is the data available or can data be collected to address the question?
  - Is the question at the “Discovery” stage of the inquiry process?
  - Is the question narrow enough to be researched in the time frame available yet broad enough to produce answers of significance?

# Identify Data Elements and Sources

## 3.2 Identifying and Locating Data Sources

### Purpose

To identify the source of the data needed to answer the focusing question developed in the question formulation activity (3.1).

### Description

Using the focusing question identified in the previous activity, the PLC data team will use the data inventory created in session 2—as well as personal knowledge—to collaboratively identify data elements needed to support their inquiry and the sources of those data elements.

### Time

About 15 minutes



## Objective 4:

# Recognise high quality data and displays

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- All data is not created equal.
- Sound decisions must be based on sound data.

# Recognise high quality data and displays

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## What constitutes “high quality data?”

- Valid and reliable
- Draws on several sources
- Samples are large and representative
- Data is as “fresh” (timely) as possible
- Accurate
- Complete
- Clearly related to the question being asked – appropriate population
- Other attributes?

# Recognise high quality data and displays



**Explorations:** Explorations enable looking at the data through different lenses to answer essential questions



**Populations:** Thoughtfully choosing the right population to include in your analysis will ensure you are looking at the right data



**Measures:** Multiple measures allow for a more complete picture of student performance



**Disaggregators:** Disaggregators help reveal the various factors that have an impact on educational outcomes

Objective 4:

# Recognise high quality data and displays

## Comparison of Results Over Time (Trend or Cohort)



This Year

vs.



Last Year

## Comparison of Results to a Reference Group



Class



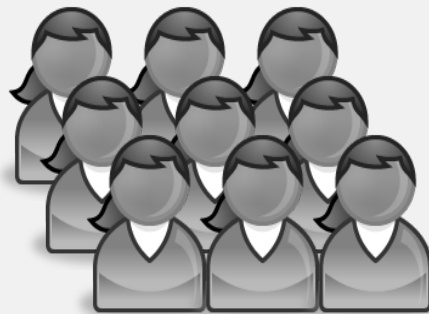
School

vs.



Similar schools

## Comparison of Subgroups to Each Other (Disaggregation)



Female

vs.



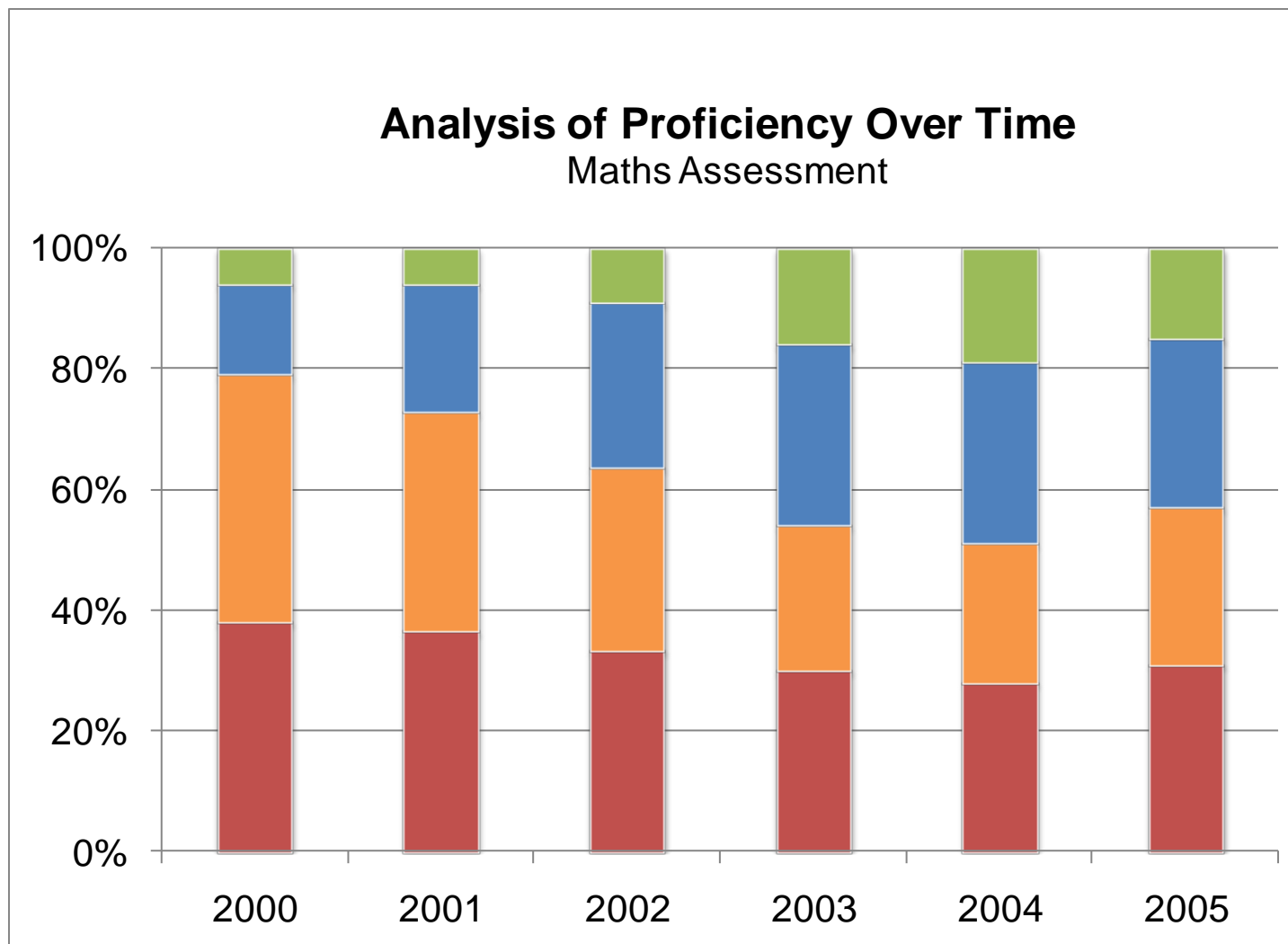
Male

# Recognise high quality data and displays

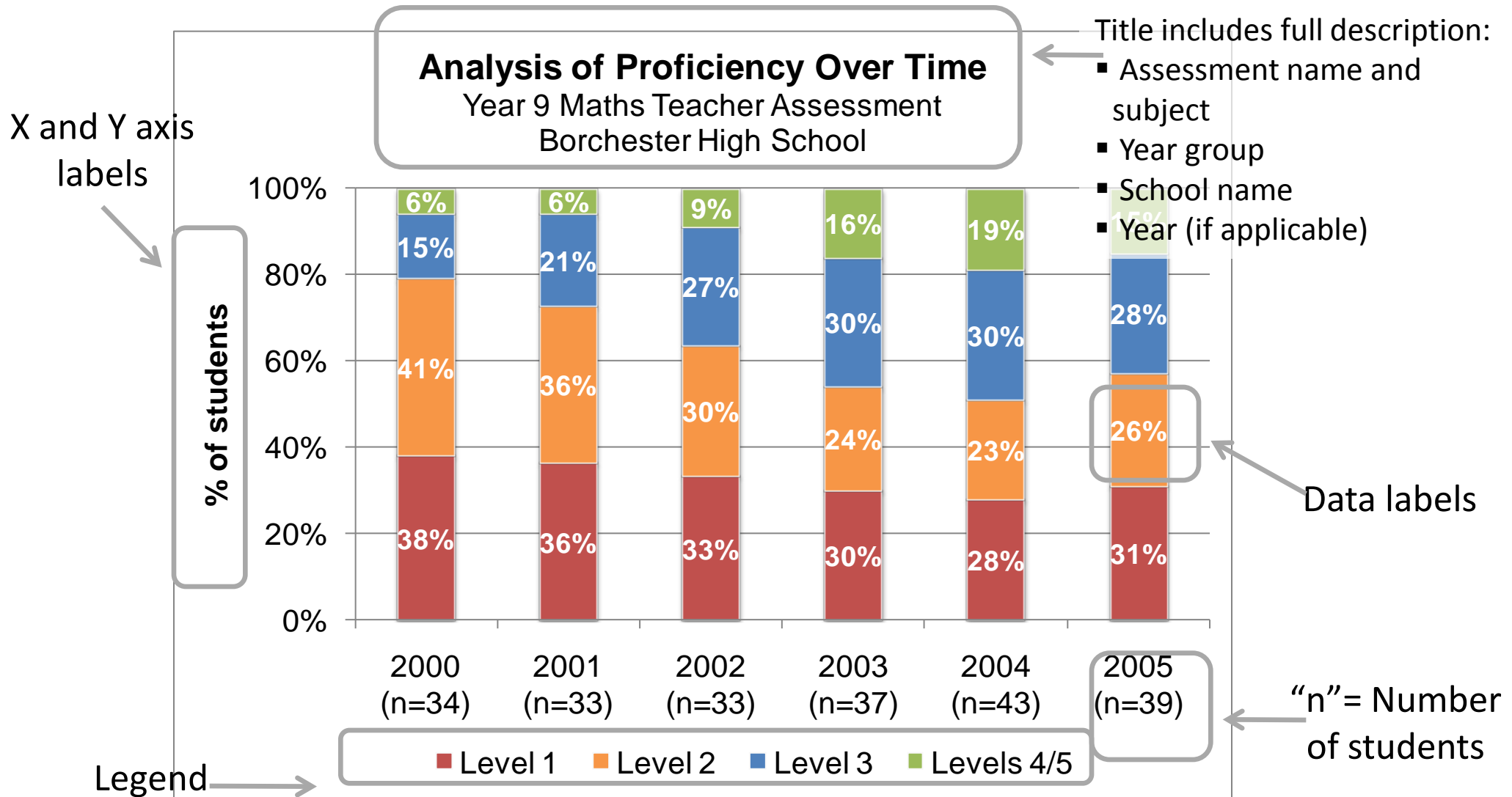
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- Effective data displays:
  - Focus attention on the critical issue under investigation
  - Are uncluttered
  - Are well labelled
  - Communicate the story the author wants to tell
- Types of Data Displays (Appendix)
  - Describes a variety of common data displays and discusses what they would be used for.

# Recognise high quality data and displays




# Recognise high quality data and displays



# Wrap Up: In Session 3, we...

- Identified a critical problem or issue in the school that will be the focus of inquiry
- Articulated a focusing question.
- Identified data elements and sources that will help inform the discovery process.
- Learned how to recognise high quality data and data displays.

<b>Preparation</b> How do we organise for data use?	<input checked="" type="checkbox"/> Module 1: Getting Started <input checked="" type="checkbox"/> Module 2: Data Literacy
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<b>Evaluation</b> What results did we get?	<input type="checkbox"/> Module 11: Preparing for Evaluation

## Wrap Up: Next Steps

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- Using the data inventory created in Module 2 and the information that you generated in Activity 3.2, collect data related to your focusing question.
- Build data displays prior to the next session that “tell a story” about what the data says about your focusing question.



# Using Data for Improving School and Student Performance

## Module 4: Evaluating Data



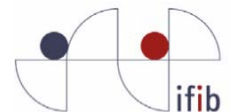
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# Agenda

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- Introduction
- Assessing Data Quality
- Assessing Data Display Quality
- Wrap up
  - Evaluation Survey



# What have we accomplished?

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- Collected data related to your focusing question.
- Built data displays that “tell a story” about what the data say about your focusing question.

## How did we do?

- How did our meetings measure up on the Effective Meeting Checklist?

# Effective Team Meeting Checklist

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- We clearly communicated the meeting time and place to everyone.
- I know where our meeting norms are published.
- We started on time.
- We used an agenda for the meeting.
- A moderator led the meeting.
- We appointed a note-taker and he/she took notes.
- Notes were published to all team members.
- We made it through all the agenda items
- We captured action items, the people responsible and timelines.
- We published our notes to all team members.
- We ended on time.
- All team members were present.

**Number of ticks:** \_\_\_\_\_

# Module 4 Objectives

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- Evaluate the quality of collected data.
- Critique your data displays.
- Plan for improvements.

## Objective 1:

# Evaluate Data Quality

## 4.1 Assessing Data Quality

### Purpose

To rate the quality of your PLC's final data set against the attributes of quality data.

### Description

Your PLC will use the Data Quality Checklist to rate the quality of the final data set and provide evidence to support that rating.

### Time

About 30 minutes



## Objective 2:

# Critique Data Displays

## 4.2 Assessing Data Display Quality

### Purpose

To critique the quality of the data displays generated to address the PLC's focusing question.

### Description

Through this activity, the PLC data team will review the characteristics of the data displays that they have generated and compare their work to the attributes and examples of high quality data displays.

### Time

About 45 minutes



# Wrap Up: In Session 4, we...

- Evaluated the quality of collected data.
- Critiqued data displays.
- Identified and planned for any necessary improvements.

<b>Preparation</b> How do we organize for data use?	<input checked="" type="checkbox"/> Module 1: Getting Started <input checked="" type="checkbox"/> Module 2: Data Literacy
<b>Discovery</b> What's the issue or problem?	<input checked="" type="checkbox"/> Module 3: Identifying a Problem <input checked="" type="checkbox"/> Module 4: Evaluating Data
<b>Diagnosis</b> What's the root cause?	<input type="checkbox"/> Module 5: Analyzing Discovery Data <input type="checkbox"/> Module 6: Hypothesizing Root Causes <input type="checkbox"/> Module 7: Analyzing Root Cause Data
<b>Doing</b> What are we going to do about it?	<input type="checkbox"/> Module 8: Brainstorming Initiatives <input type="checkbox"/> Module 9: Developing Action Plans <input type="checkbox"/> Module 10: Monitoring Implementation
<b>Evaluation</b> What results did we get?	<input type="checkbox"/> Module 11: Building a Data Use Improvement Plan



# Wrap Up: Next Steps

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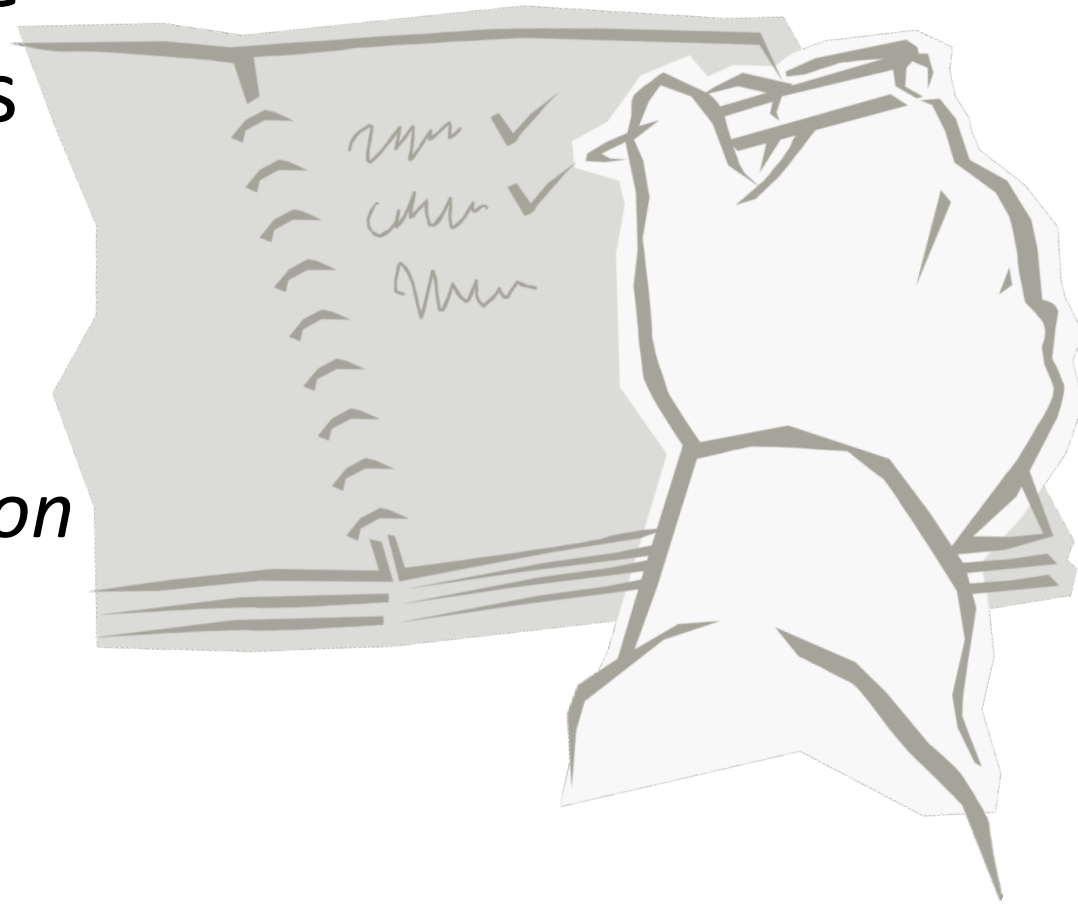
1. Use the information generated in activities 4.1 and 4.2 to make improvements in your data set and data display.

# Evaluation

---

Please complete an evaluation of this course and your work up to this point.

*For this evaluation, reflect on your experiences from **Module 3 through 4.***





# Using Data for Improving School and Student Performance

## Module 5: Analysing Discovery Data

Month, 2011



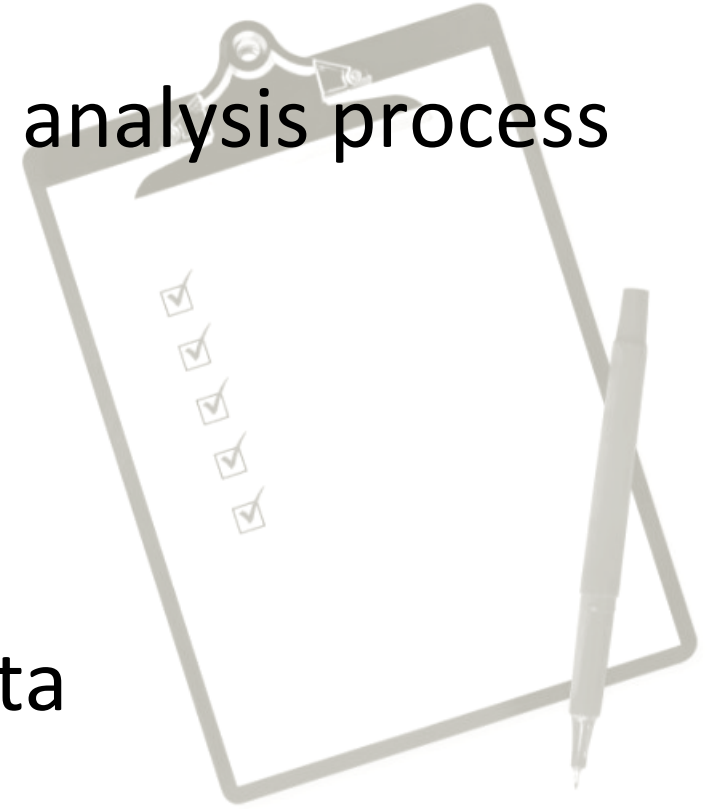
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# Agenda

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- Introduction
- Introduce the collaborative data analysis process
- Analyse focusing question data
- Problem statement formulation
- Developing clarifying questions
- Planning to collect additional data
- Wrap up



# What have we accomplished?

---

1. Made improvements in your data sets and data displays.

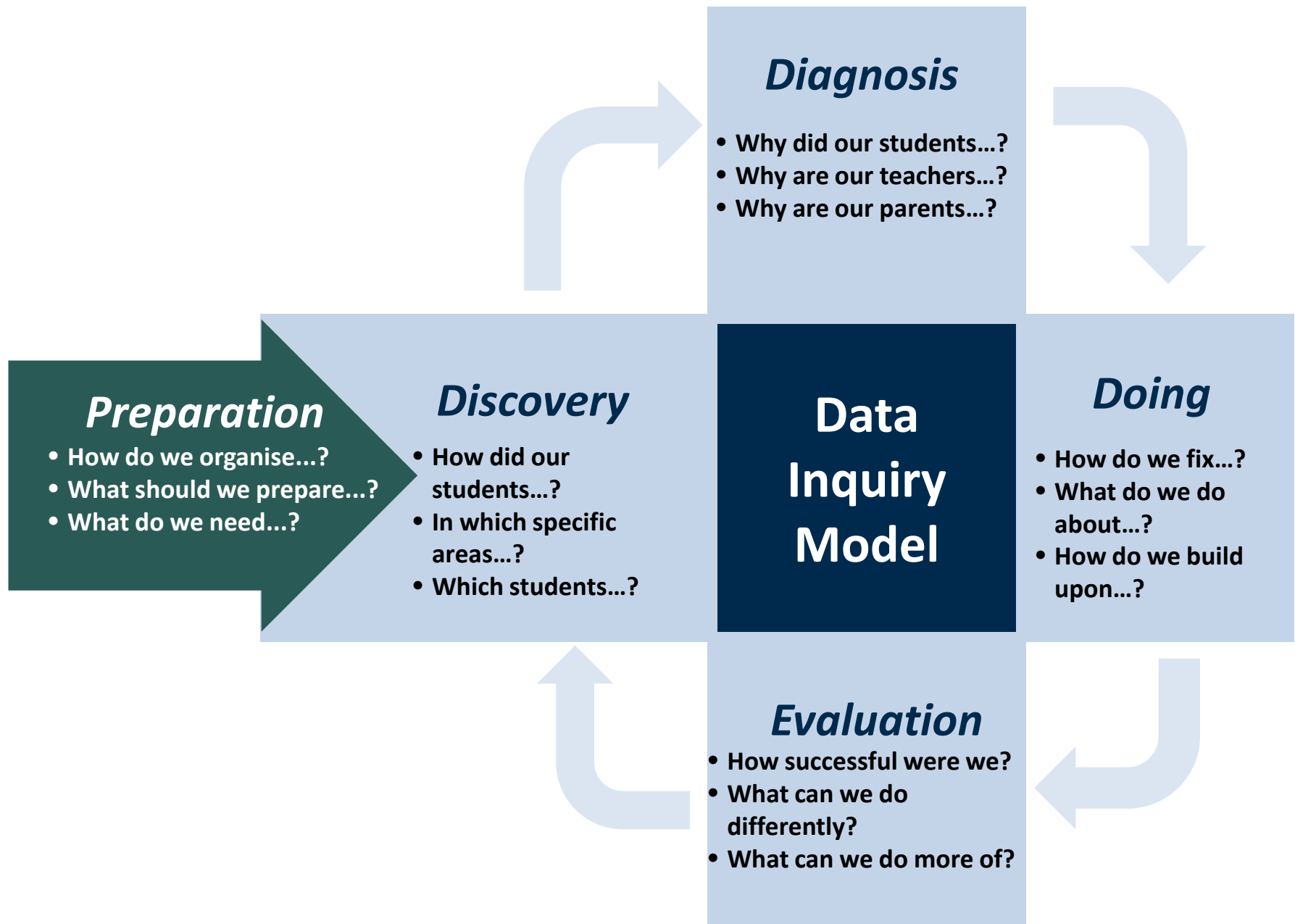
# Effective Team Meeting Checklist

---

- We clearly communicated the meeting time and place to everyone.
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- We appointed a note-taker and he/she took notes.
- Notes were published to all team members.
- We made it through all the agenda items
- We captured action items, the people responsible and timelines.
- We published our notes to all team members.
- We ended on time.
- All team members were present.

**Number of ticks:** \_\_\_\_\_

# Discovery to Diagnosis: a 3-Staged Data Inquiry Model

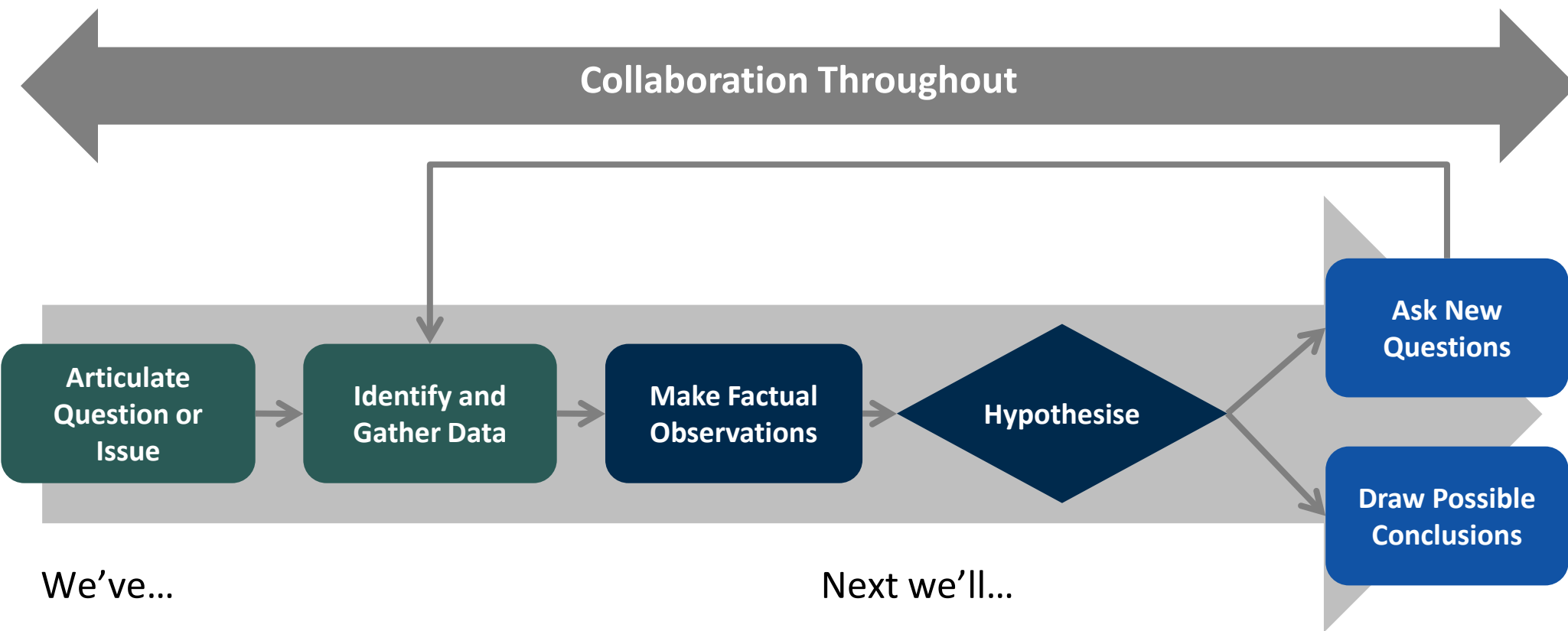


# Module 5 Objectives

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1. Apply the collaborative data analysis process.
2. Make factual observations from data sets and displays.
3. Form inferences from factual observations of the discovery data.
4. Articulate a clear, evidence-based statement of the problem.
5. Formulate clarifying questions to refine the problem.
6. Identify additional data needed to answer the clarifying questions.
7. Develop a plan for the collection, display, and analysis of the additional data sets.

# Collaborative Data Analysis Process



We've...

Identified an issue to investigate, formed a focusing question, identified data related to the focusing question, collected data, and evaluated the data for quality.

Next we'll...

Make factual observations about what the data says, use these observations to make inferences and formulate hypotheses, develop clarifying questions to dig deeper into the data, and/or draw possible conclusions

Objective 3:

# Form Inferences from Factual Observations

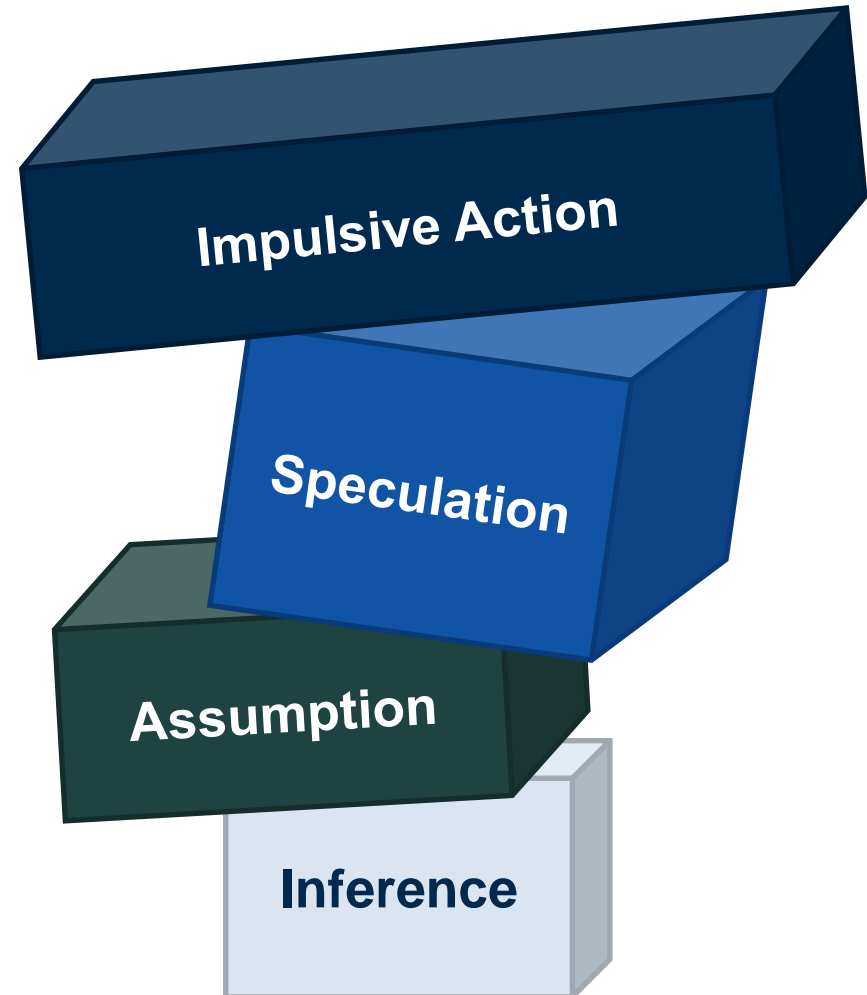
## When Inference Goes Bad

“Let’s revamp our Year 7 reading curriculum.”

“Wouldn’t we get better results if we revamped our Year 7 reading curriculum?”

“We obviously don’t have the right focus in Year 7 reading curriculum”.

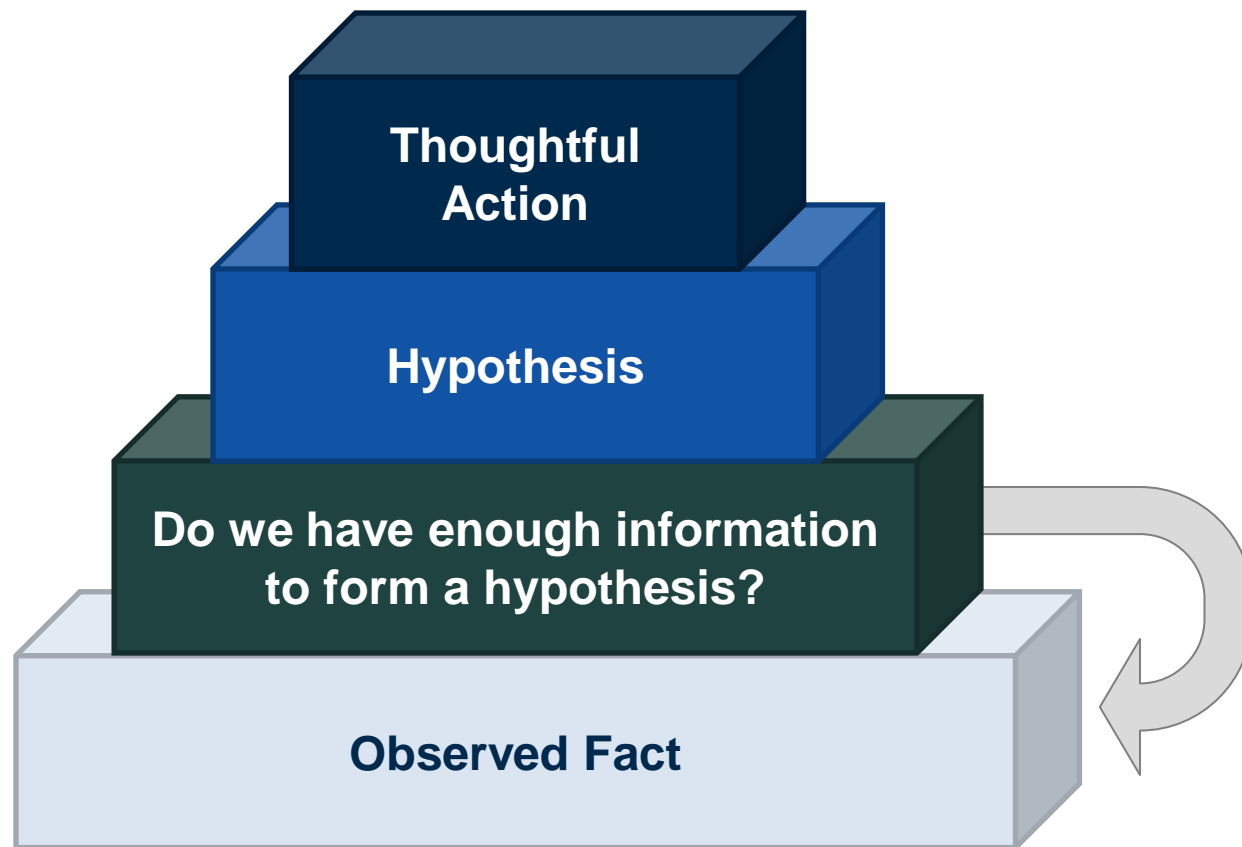
“Something is wrong with our reading curriculum because 70% of our Year 7 students scored below their reading age.”



Adapted from: the 5th Discipline Fieldbook, Peter Senge, 1994

# Form Inferences from Factual Observations

How do we get to the right action?



# Data Analysis

## 5.1 Data Analysis Activity

### Purpose

To make factual observations about what the data “says” with regard to the focusing question and to form inferences based on these observations.

### Description

Each PLC data team member will spend several minutes reviewing the data set/data displays and making observations about what the data says. The team will then record all observations on chart paper and work to reach consensus on valid, objective observations that arise from the data set. These observations will then be used by the team to create inferences about the focusing question which will lead to the clear statement of an evidence-based problem.

### Time

30 minutes



# Articulate a Statement of the Problem

## 5.2 Problem Statement Worksheet

### Purpose

To clearly define the problem and to prepare to diagnose the root cause of the issue in Module 6.

### Description

The PLC data team will collaboratively complete the Problem Statement Worksheet. As the worksheet guides the team through the process, the team will gain a deeper understanding of the problem and its impact.

### Time

30 minutes



## Objective 2:

# Problem Statements

---

- When do you know that you've found the “right” problem on which to focus?
  - Do you have more than a superficial understanding of the problem?
  - Is there logic—based on the data you've examined—in how and why you've arrived at the specific problem identified?
  - Is your understanding of the problem supported by multiple sources of data?
  - Did you learn anything new in examining the data?
  - Do you all define the problem in the same way?
  - Is the problem specifically focused on knowledge and skills you want students to have?
  - If you solve the problem, will it help you meet your larger goals for students?

## Objective 5:

# Formulate Clarifying Questions

---

- Example focusing question:
  - What are the characteristics and performance levels of students with high absence rates?
  
- Potential clarifying questions:
  - What is the relationship between absenteeism and performance on X assessment?
  - Which subgroups and year groups have the highest absence rates? Lowest?
  - When does high absenteeism occur throughout the school year?
  - How does the school absence rate compare with the area or country?

# Formulate Clarifying Questions

## 5.3 Clarifying Question Formulation

### Purpose

To review the evidence-based problem statement and formulate clarifying questions to further refine the problem statement, if necessary.

### Description

This activity should be used if the PLC data team has determined that additional analysis is necessary to refine their problem statement. Similar to the Focusing Question Formulation activity (3.1), this activity encourages PLC data teams to use brainstorming techniques to collaboratively identify additional questions that will help them ensure that the problem statement is based on sound evidence.

### Time

5 minutes to introduce. To be completed if necessary prior to Session 6.



# Identify Gaps where Additional Data is Needed

## 5.4 Identifying and Locating Data Sources

### Purpose

To identify and locate additional data to refine the problem statement.

### Description

This activity complements 5.3 if the team has elected to use it to refine the problem statement. The PLC data team will identify and use their data inventory to locate additional data needed to refine the problem statement. The team will then develop a plan to collect, display, and analyse the data.

### Time

5 minutes to introduce. To be completed, if necessary, prior to Session 6.



# Develop a Plan to Collect Additional Data Sets

## Digging into Data Template: Clarifying Questions

Issue or Problem that Started the Inquiry:


Problem Statement:

Clarifying Questions	Data Sources	Target Date for Collection	Display Construction Plan	Date for Data Analysis	Person/Group Responsible

# Wrap Up: In Session 5, we...

- Learned about the collaborative data analysis process.
- Used the process to analyse data related to your focusing question.
- Formed inferences from factual observations.
- Crafted an evidence-based problem statement
- Prepared to formulate clarifying questions to refine the problem statement.
- Prepared to identify additional data elements needed to address the clarifying questions.
- Learned how to develop a plan for the collection, display, and analysis of the additional data.

<b>Preparation</b> How do we organise for data use?	<input checked="" type="checkbox"/> Module 1: Getting Started <input checked="" type="checkbox"/> Module 2: Data Literacy
<b>Discovery</b> What's the issue or problem?	<input checked="" type="checkbox"/> Module 3: Identifying a Problem <input checked="" type="checkbox"/> Module 4: Evaluating Data
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<b>Doing</b> What are we going to do about it?	<input type="checkbox"/> Module 8: Brainstorming Initiatives <input type="checkbox"/> Module 9: Developing Action Plans <input type="checkbox"/> Module 10: Monitoring Implementation
<b>Evaluation</b> What results did we get?	<input type="checkbox"/> Module 11: Preparing for Evaluation



# Wrap Up: Next Steps

---

1. Determine if your PLC has a quality problem statement.
2. If it is determined that your problem statement needs to be refined, complete activities 5.3-Clarifying Question Formulation and 5.4-Identifying and Locating Data Sources.
3. Collect the data necessary to address your PLC's clarifying questions.
4. Generate high-quality data displays to communicate what the data say about each of your clarifying questions.



# Using Data for Improving School and Student Performance

## Module 6: Hypothesising Root Causes



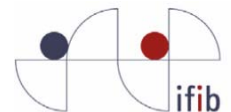
Education and Culture DG

Lifelong Learning Programme



PUBLIC  
CONSULTING  
GROUP

UNIVERSITY OF TWENTE.



Institut für  
Informationsmanagement  
Bremen GmbH



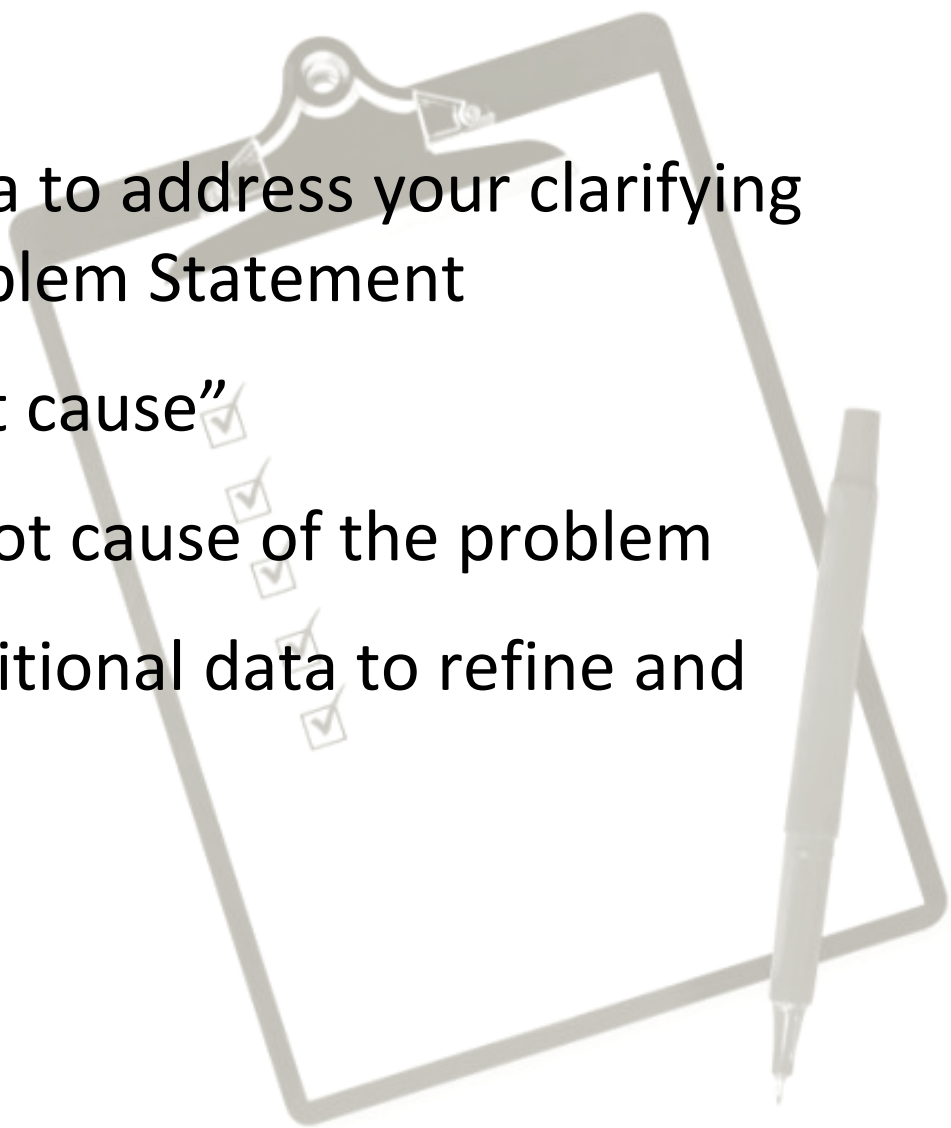
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MODERN DIDACTICS CENTRE



Specialist Schools  
and Academies Trust  
THE SCHOOLS NETWORK™

# Agenda

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- Introduction
  - Discuss the analysis of the data to address your clarifying questions and the refined Problem Statement
  - Introduce the concept of “root cause”
  - Craft hypotheses about the root cause of the problem
  - Plan to collect and display additional data to refine and confirm the root cause
  - Wrap up
- 

# What have we accomplished?

---

1. Collected data to address any clarifying questions your PLC may have had.
2. Generated high-quality data displays to communicate what the data say about each of those clarifying questions.
3. Refined the evidence-based Problem Statement based on the analysis of data on the clarifying questions.

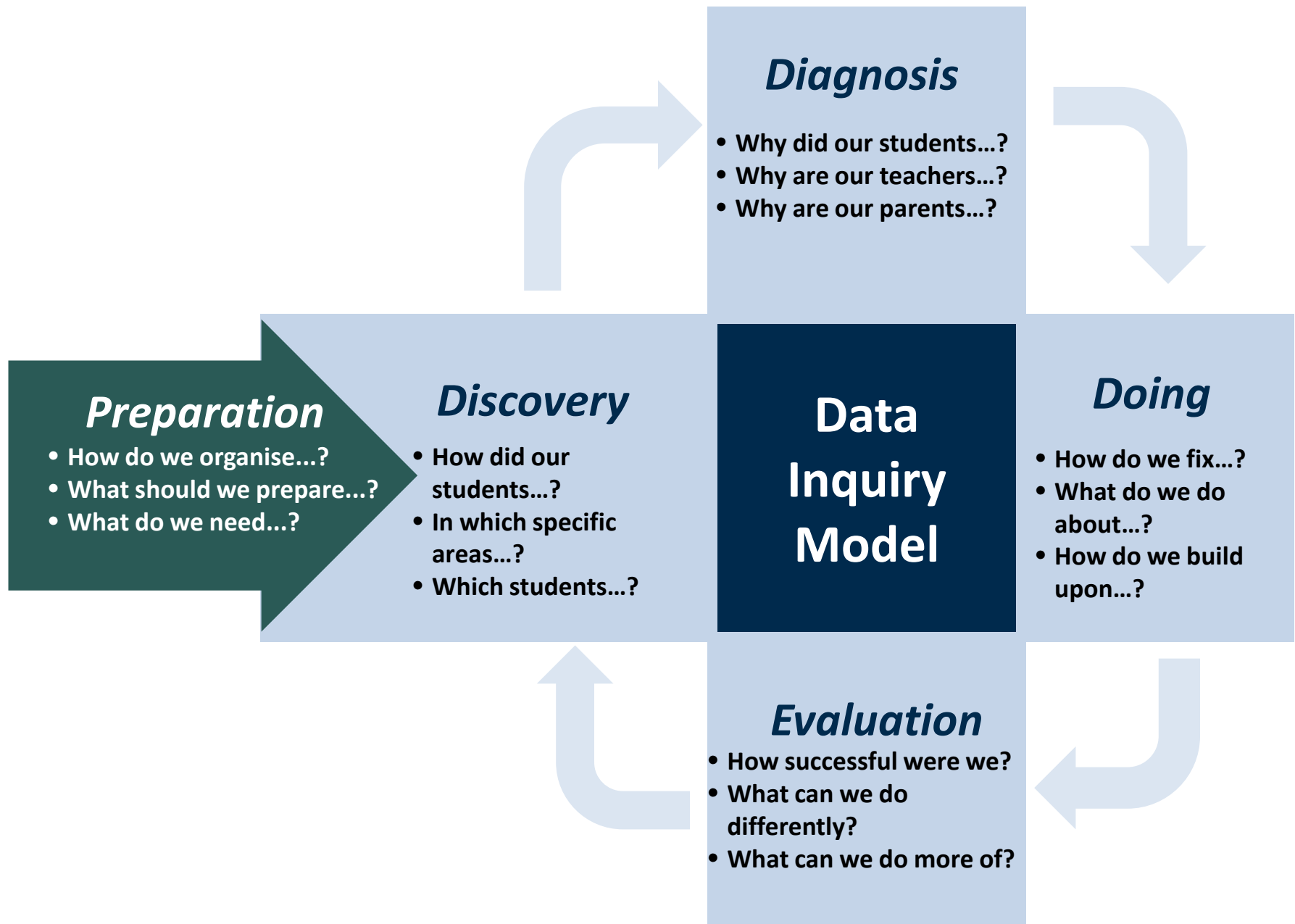
# Effective Team Meeting Checklist

---

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- Notes were published to all team members.
- We made it through all the agenda items
- We captured action items, the people responsible and timelines.
- We published our notes to all team members.
- We ended on time.
- All team members were present.

**Number of ticks:** \_\_\_\_\_

# The Big Picture: Diagnosis



# Module 6 Objectives

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1. If necessary, refine the evidence-based problem statement based on any clarifying questions.
2. Hypothesise the root cause of the problem.
3. Identify additional data needed to confirm the hypothesised root cause.

# Problem Statement Refinement

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## 6.1 Refining Evidence-based Problem Statement

### Purpose

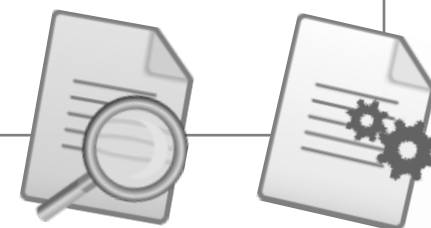
If the PLC found it necessary to craft clarifying questions to refine their problem statement they will have analyzed those data to infer the impact on the problem statement.

### Description

Prior to Session 6, the PLC data team may have posed clarifying questions to refine the problem statement. If so, they will have used Activities 5.3 and 5.4 to formulate clarifying questions and identify additional data sources. Upon completion of the analysis, the team will have modified the problem statement as necessary. This activity will help to review and finalise the new problem statement.

### Time

30 minutes



## Objective 1:

# Problem Statement Refinement

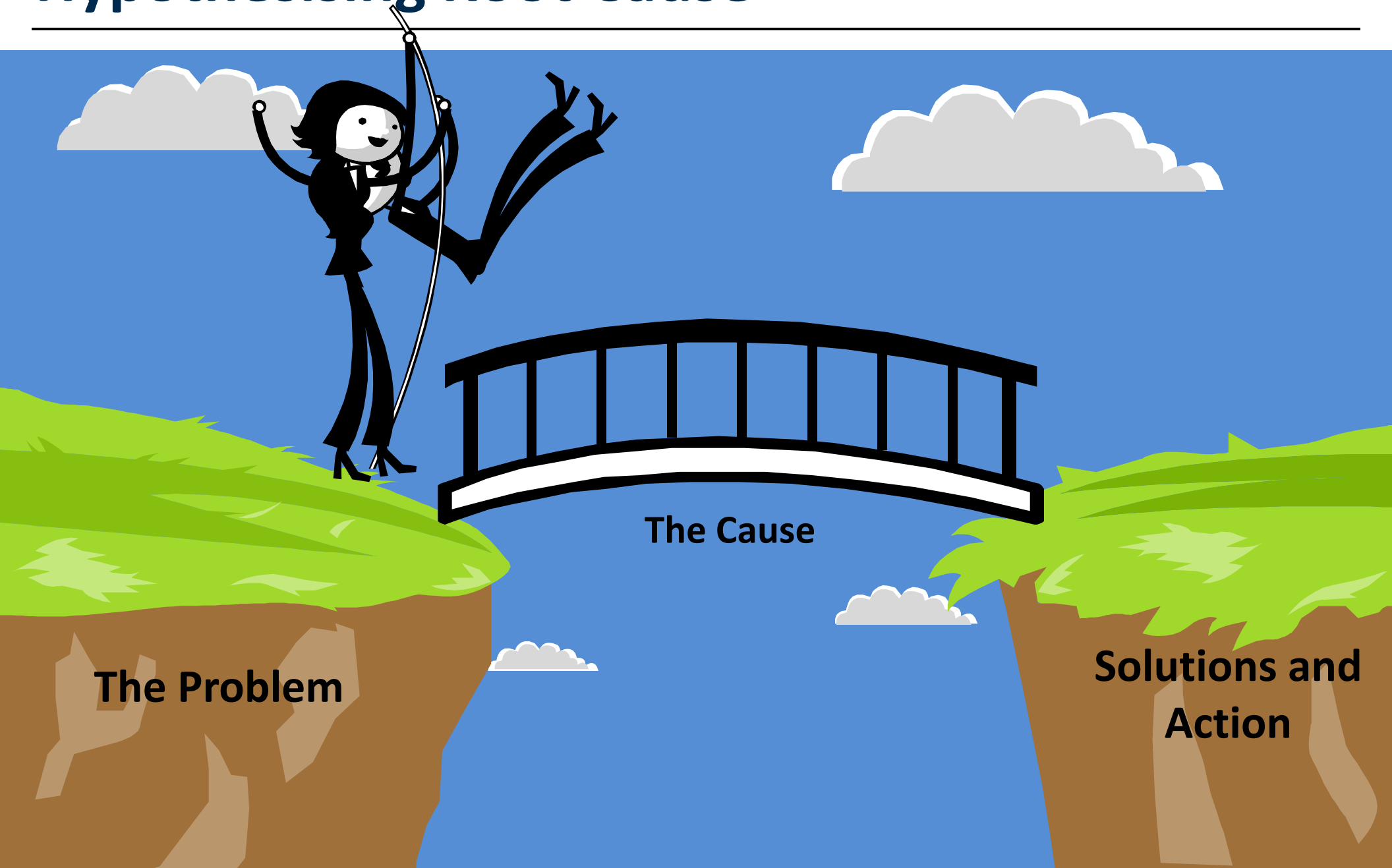
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- When do you know that you've found the “right” problem on which to focus?
  - Do you have more than a superficial understanding of the problem?
  - Is there logic—based on the data you have examined—in how and why you've arrived at the specific problem identified?
  - Is your understanding of the problem supported by multiple sources of data?
  - Did you learn anything new in examining the data?
  - Do you all define the problem in the same way?
  - Is the problem specifically focused on knowledge and skills you want students to have?
  - If you solve the problem, will it help you meet your larger goals for students?

*Source : Boudett, K. P., City, E. A., Murnane, R. J. (Eds.). (2005). Data Wise: A Step-by-Step Guide to Using Assessment Results to Improve Teaching and Learning. Cambridge, MA: Harvard Education Press. (p. 96)*

Objective 2:

# Hypothesising Root Cause



# Hypothesising Root Cause: A case of car trouble

---

- Problem: You need to go somewhere and your car won't start.
- In order to solve the problem you need to:
  - Identify possible causes
  - Determine which possibility is the actual cause

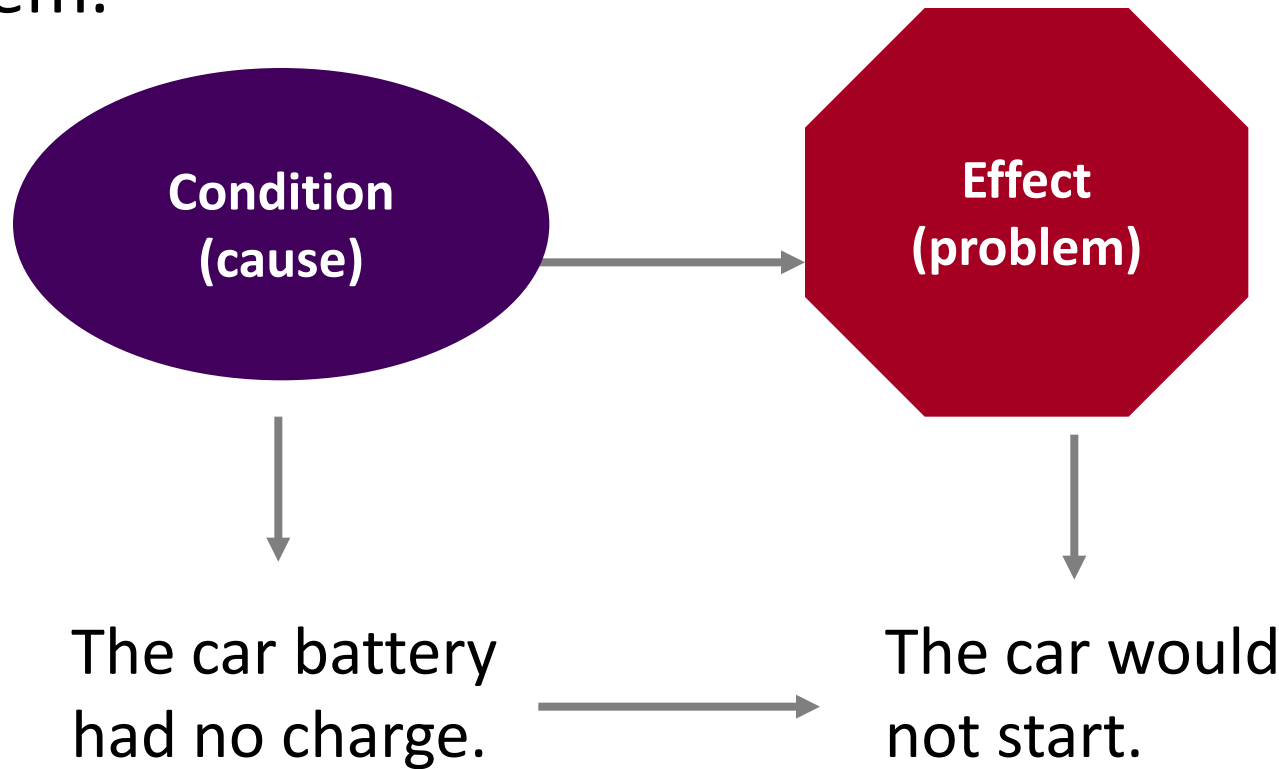
# Hypothesising Root Cause: A case of car trouble

---

<b>Possible Cause (Hypothesis)</b>	<b>Actual Cause (Test the hypothesis)</b>
The steering column is locked	Turn the steering wheel to a neutral position and turn key
The battery cable is loose	Tighten connection at both ends and turn key
The battery is dead	Test battery with a voltage meter

# Hypothesising Root Cause

A root cause is an underlying factor that creates a problem.



# Hypothesising Root Cause: Are schools like cars?

---

- How is the car example similar to problems in schools?
- How are they different?
- How is the approach to identifying their causes similar?
- How is it different?

# Hypothesising Root Cause

## 6.2 Why? Why? Why? Activity

### Purpose

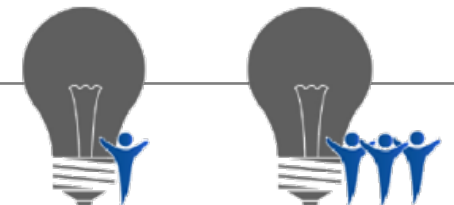
To brainstorm hypotheses and identify a tentative root cause of the problem.

### Description

This activity is a relatively quick, informal way to identify root causes of problems. Through successive answers to the questions “why?” the PLC data team will reach consensus on the likely root cause of the problem under investigation.

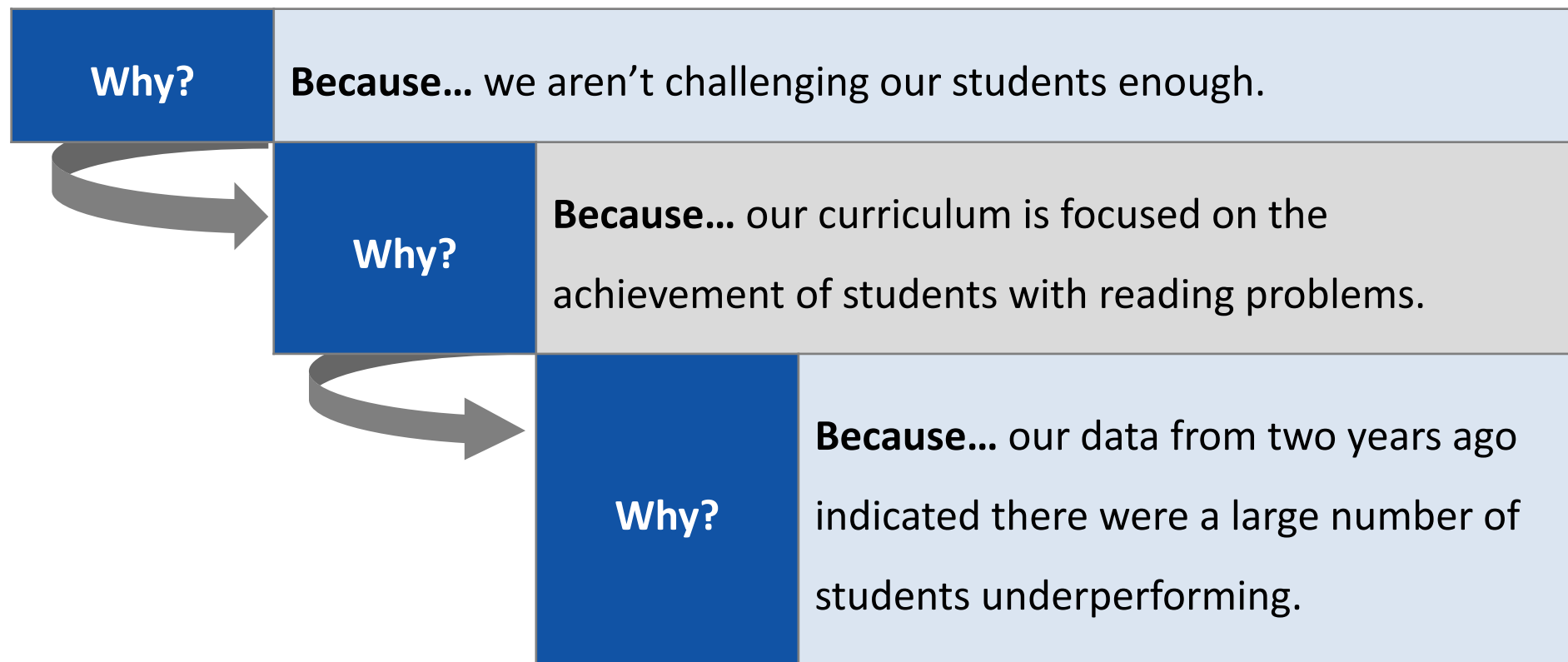
### Time

45 minutes



# Hypothesising Root Cause: Why, why, why?

- Problem/barrier/issue: “Our humanities results indicate that, while almost all our students are proficient, none are advanced.”



# Hypothesising Root Cause

---

- Have you identified the “right” root cause?
  - Do you all define the root cause in the same way?
  - Do you have more than a superficial understanding of the root cause?
  - Is there logic—based on the data you have examined—in how and why you’ve arrived at the specific root cause?
  - Is your understanding of the root cause supported by multiple sources of data?
  - Do you need more data to test your hypothesis?

# Hypothesising Root Cause

---

- Have you identified the “right” root cause? (cont.)
  - Is the root cause a problem of practice?
  - Is the root cause something within the school’s power to address?
  - If the root cause is addressed, will it have a significant positive impact on teaching and learning?

# Identify Additional Data to Confirm Root Cause

## 6.3 Identifying Root Cause Data Activity

### Purpose

To identify, collect, and display data needed to test the root cause hypothesis.

### Description

Using a template similar to that used in Module 4, the PLC data team will identify and plan to collect and display the data elements needed to test the root cause hypothesis.

### Time

10 minutes



# Collect Research and Best Practice Examples

---

## 6.4 Building Your Knowledge Base

### **Purpose**

To provide resources that the PLC data team may use to gain knowledge about the root cause.

### **Description**

This section provides resources and a structure to help your PLC data team locate information that will build your knowledge base. The project site can serve as a starting place for gathering research reports related to the problem your PLC data team is addressing and the interventions your team may consider.

### **Time**

Prior to Session 7

# Identify Additional Staff

## 6.5 Consult Your Colleagues Worksheet

### Purpose

To take advantage of the local knowledge and build networks among colleagues related to the problem under investigation.

### Description

Your PLC data team will use the Consult Your Colleagues Worksheet to help you identify staff who are familiar with the problems and who may be able to suggest ways to address them. They will then plan and assign responsibilities for gathering information from their colleagues to share with the team.

### Time

Prior to Session 7



# Wrap Up: In Session 6, we

- Analyzed additional data to address the clarifying questions.
- Articulated a clear, evidence-based statement of the problem.
- Worked as a PLC to hypothesise a root cause for the identified problem.
- Critiqued the root cause hypothesis and began to plan for the collection of additional data to refine and confirm the root cause hypothesis.

<b>Preparation</b> How do we organise for data use?	<input checked="" type="checkbox"/> Module 1: Getting Started <input checked="" type="checkbox"/> Module 2: Data Literacy
<b>Discovery</b> What's the issue or problem?	<input checked="" type="checkbox"/> Module 3: Identifying a Problem <input checked="" type="checkbox"/> Module 4: Evaluating Data
<b>Diagnosis</b> What's the root cause?	<input checked="" type="checkbox"/> Module 5: Analyzing Discovery Data <input checked="" type="checkbox"/> Module 6: Hypothesising Root Causes <input type="checkbox"/> Module 7: Analyzing Root Cause Data
<b>Doing</b> What are we going to do about it?	<input type="checkbox"/> Module 8: Brainstorming Initiatives <input type="checkbox"/> Module 9: Developing Action Plans <input type="checkbox"/> Module 10: Monitoring Implementation
<b>Evaluation</b> What results did we get	<input type="checkbox"/> Module 11: Preparing for Evaluation



# Wrap Up: Next Steps

---

1. Using the Identifying Root Cause Data Template, collect and display additional data needed to test your root cause hypothesis.



# Using Data for Improving School and Student Performance

## Module 7: Analysing Root Cause Data



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# Agenda

---

- Introduction
- Review root cause
- Analyse additional data
- Problem statement
- Plan to consult the literature
- Plan to consult colleagues
- Wrap Up
  - Evaluation Survey



# What have we accomplished?

---

1. You collected additional data needed to test your root cause hypothesis.
2. You displayed the data in preparation for analysis.

# Effective Team Meeting Checklist

---

- We clearly communicated the meeting time and place to everyone.
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- A moderator led the meeting.
- We appointed a note-taker and he/she took notes.
- Notes were published to all team members.
- We made it through all the agenda items
- We captured action items, the people responsible and timelines.
- We published our notes to all team members.
- We ended on time.
- All team members were present.

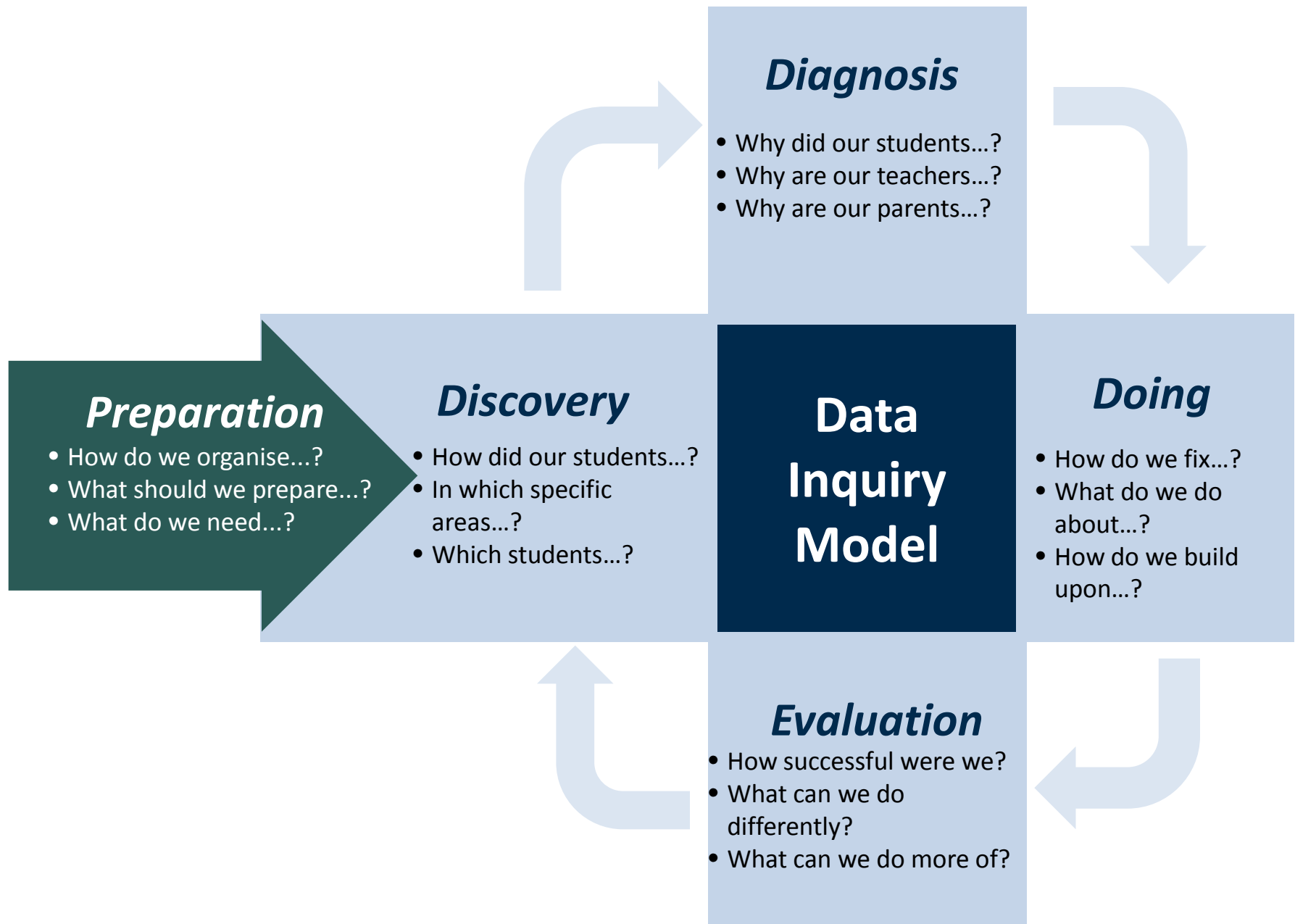
**Number of ticks:** \_\_\_\_\_

# Module 7 Objectives

---

1. Confirm the root cause of the identified problem.
2. Collect research and best practice examples on ways to address the root cause of the problem.
3. Identify staff, outside the PLC data team, who may provide insight into ways to address the root cause of the problem.

# The Big Picture: Diagnosis



## Objective 1:

# Confirm Root Cause of the Problem

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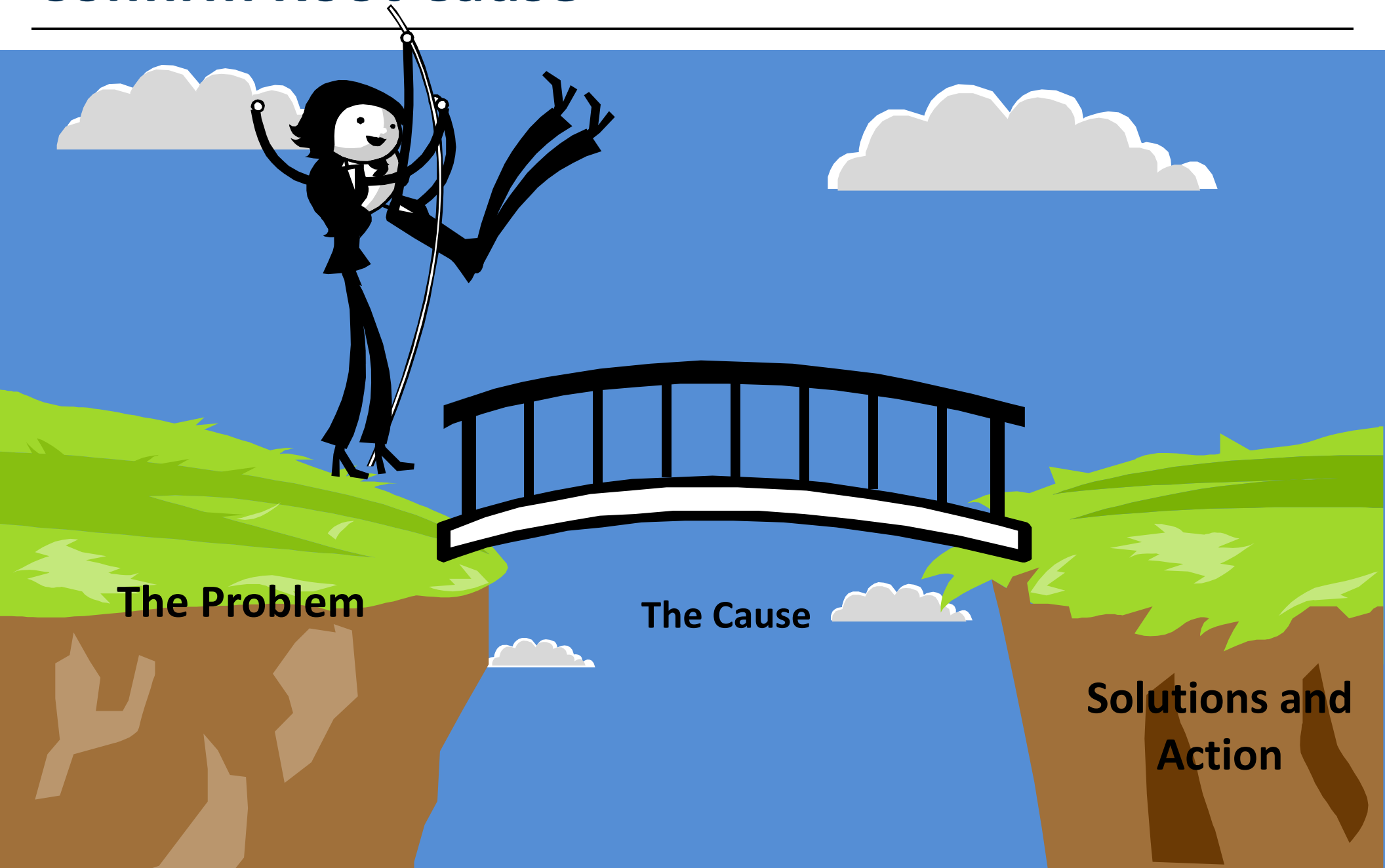
**Learner-centred problems** are expressed in terms of what the student is having difficulty with (e.g. “Our students are having difficulty solving multi-step problems”).



**Problems of practice** are expressed in terms of the **teaching** practice related to the learner-centred problem (e.g. “We don’t give our students enough practice with multi-step problems”).

Objective 1:

# Confirm Root Cause



## Objective 1:

# Confirm Root Cause

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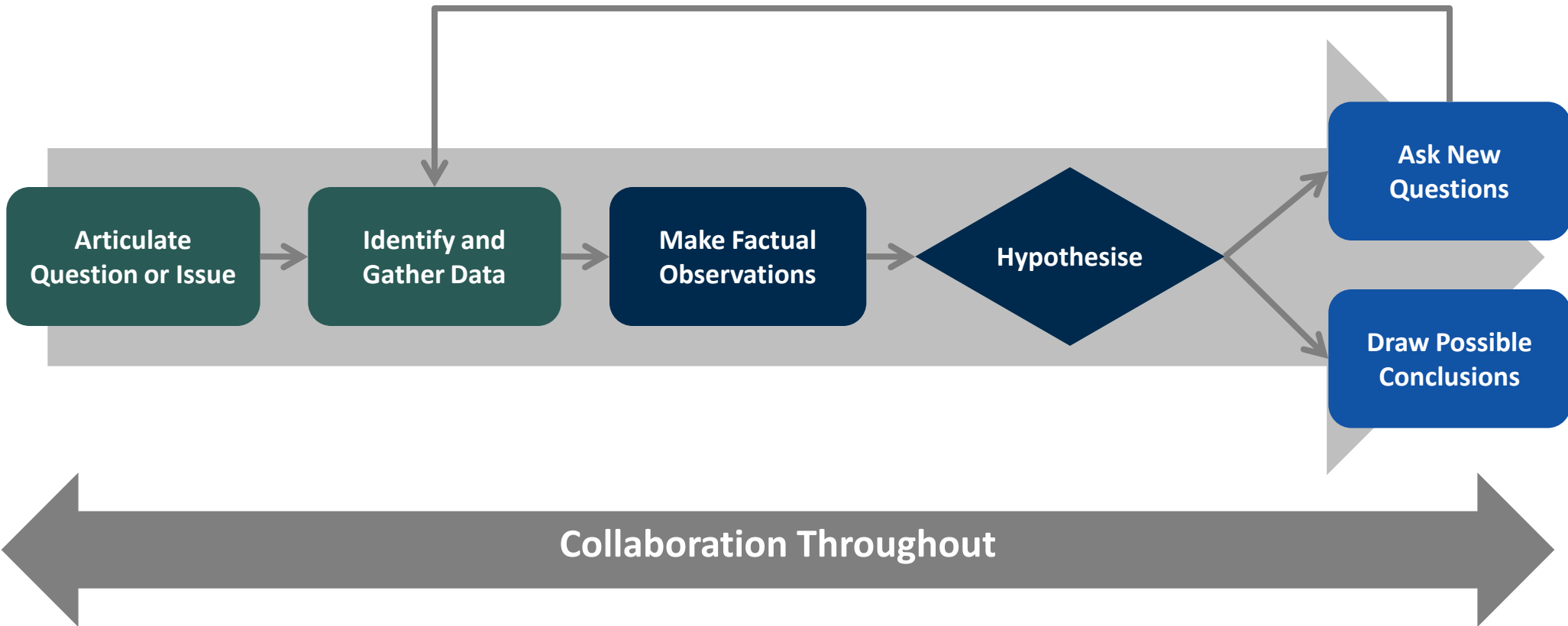
- Logic model:

IF a problem can be influenced by the school, THEN the root cause is related to school practices. School practices can include:

- Curriculum
- Teaching and learning
- Assessment
- Organisation
- Staffing
- Resources
- Environment
- Staff development

Objective 1:

# Confirm Root Cause



## Objective 1:

# Confirm Root Cause

## 7.1 Root Cause Data Analysis

### Purpose

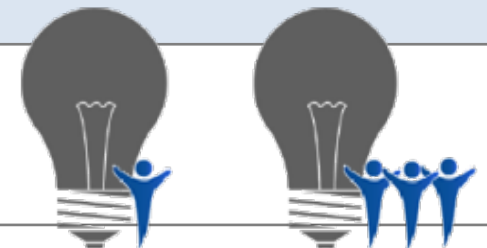
To make factual observations about what the data “says” regarding the hypothesised root cause.

### Description

Each PLC data team member will spend several minutes reviewing the data set/data displays and making observations about what the data says. After recording each person’s observations on chart paper, the team will reach consensus on valid, objective observations that arise from the data set. The team will then determine if the root cause hypothesis is supported and will craft the final root cause statement.

### Time

30 minutes



## Objective 2:

# Confirm Root Cause and Problem of Practice

## 7.2 Identifying Problems of Practice

### Purpose

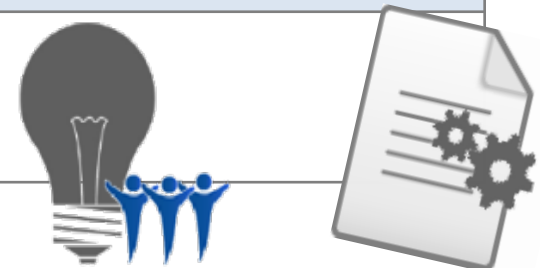
To reach consensus on school-based practices that contribute to the root cause.

### Description

The PLC data team will collaboratively complete the Problem of Practice Worksheet. As the worksheet guides your team through the process, you will gain a deeper understanding of the problem of practice as it relates to the root cause.

### Time

30 minutes



## Objective 2:

# Collect Research and Best Practice Examples

## 7.3 Building Your Knowledge Base

### Purpose

To provide resources that the PLC data team may use to gain knowledge about the root cause.

### Description

This section provides resources and a structure to help your PLC data team locate information that will build your knowledge base. The project site can serve as a starting place for gathering research reports related to the problem your PLC data team is addressing and the interventions your team may consider.

### Time

Prior to Session 8

## Objective 3:

# Identify Additional Staff

## 7.4 Consult Your Colleagues Worksheet

### Purpose

To take advantage of the local knowledge and build networks among colleagues related to the problem under investigation.

### Description

Your PLC data team will use the Consult Your Colleagues Worksheet to help you identify staff who are familiar with the problems and who may be able to suggest ways to address them. They will then plan and assign responsibilities for gathering information from their colleagues to share with the team.

### Time


Prior to Session 8



# Wrap Up: In Session 7, we...

- You confirmed the root cause related to the evidence-based, problem.
- You obtained resources for the collection of research and best practice examples on ways to address the root cause of the problem.
- You identified staff, outside the PLC data team, who may provide insight into ways to address the root cause.

<b>Preparation</b> How do we organise for data use?	<input checked="" type="checkbox"/> Module 1: Getting Started <input checked="" type="checkbox"/> Module 2: Data Literacy
<b>Discovery</b> What's the issue or problem?	<input checked="" type="checkbox"/> Module 3: Identifying a Problem <input checked="" type="checkbox"/> Module 4: Evaluating Data
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<b>Doing</b> What are we going to do about it?	<input type="checkbox"/> Module 8: Brainstorming Initiatives <input type="checkbox"/> Module 9: Developing Action Plans <input type="checkbox"/> Module 10: Monitoring Implementation
<b>Evaluation</b> What results did we get?	<input type="checkbox"/> Module 11: Preparing for Evaluation



# Wrap Up: Next Steps

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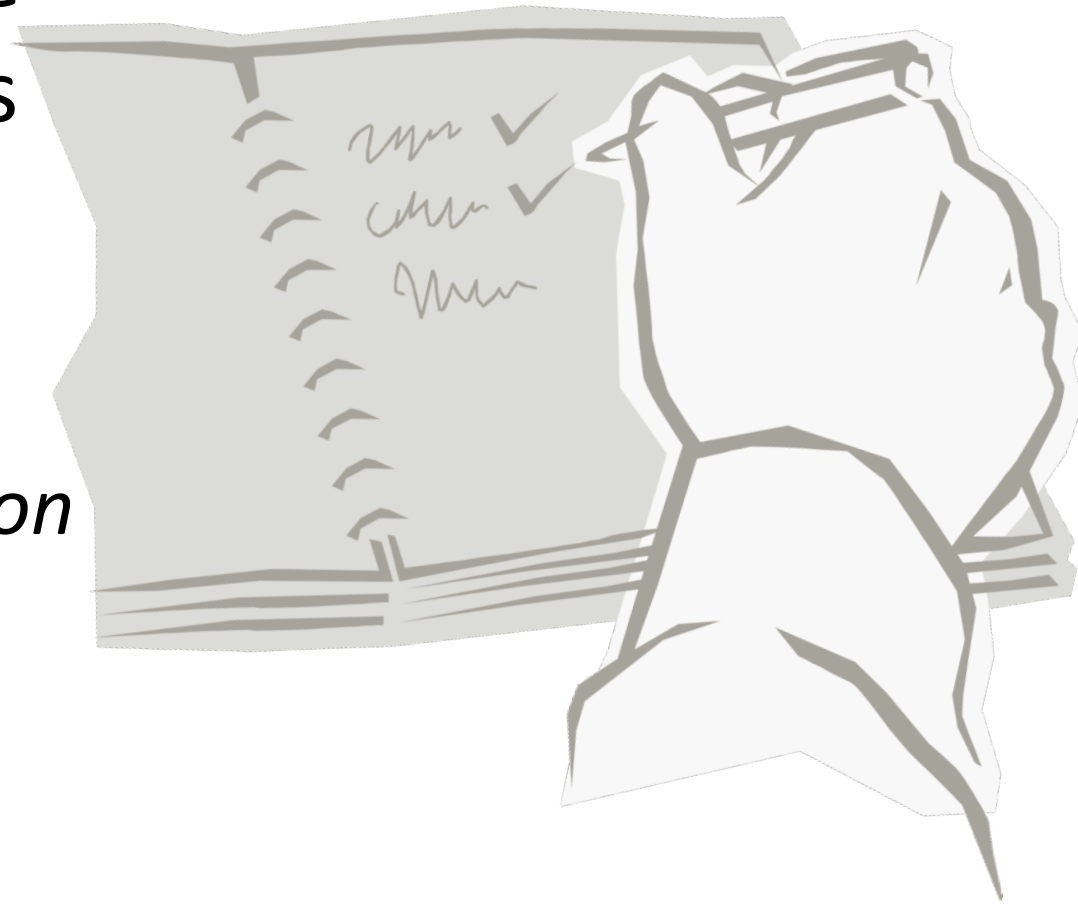
1. Investigate the practice and research literature to gain more knowledge about the identified problem.
2. As appropriate, engage other staff members in the investigation to gain further insight into the problem.
3. Discuss and summarise, in writing, what the team has collectively learned about the root cause in preparation for work in Module 8.

# Evaluation

---

Please complete an evaluation of this course and your work up to this point.

*For this evaluation, reflect on your experiences from **Modules 5 to 7.***





# Using Data for Improving School and Student Performance

## Module 8: Brainstorming Strategies

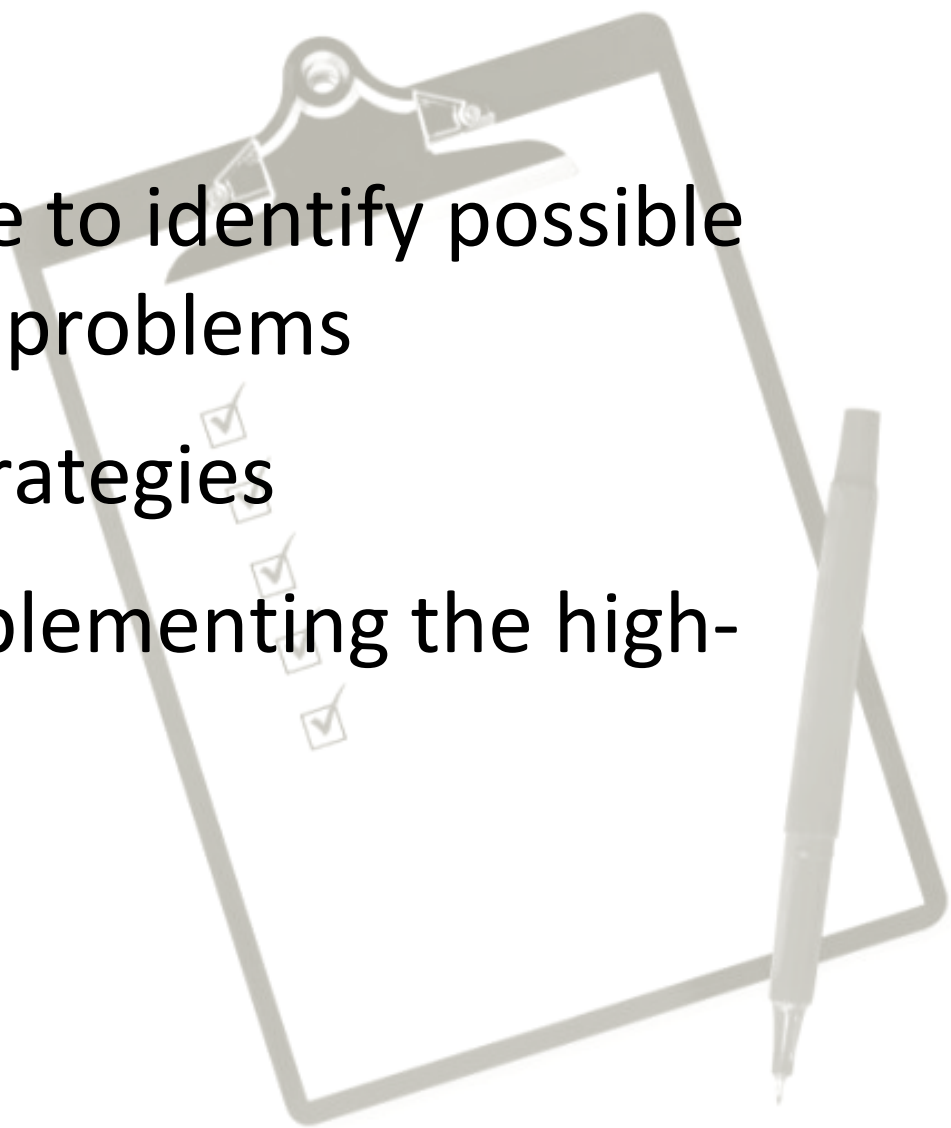


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# Agenda

---

- Introduction
  - Use your knowledge-base to identify possible strategies to address the problems
  - Identify “high-impact” strategies
  - Rate the feasibility of implementing the high-impact strategies
  - Wrap up
- 

# What have we accomplished?

---

1. You investigated practice and research literature to gain more knowledge about the identified problem.
2. You engaged other staff members in the investigation to gain further insight into the problem.
3. You discussed and summarised, in writing, what the team has collectively learned about the root cause and the problem of practice.

# Effective Team Meeting Checklist

---

- We clearly communicated the meeting time and place to everyone.
- I know where our meeting norms are published.
- We started on time.
- We used an agenda for the meeting.
- A moderator led the meeting.
- We appointed a note-taker and he/she took notes.
- Notes were published to all team members.
- We made it through all the agenda items
- We captured action items, the people responsible and timelines.
- We published our notes to all team members.
- We ended on time.
- All team members were present.

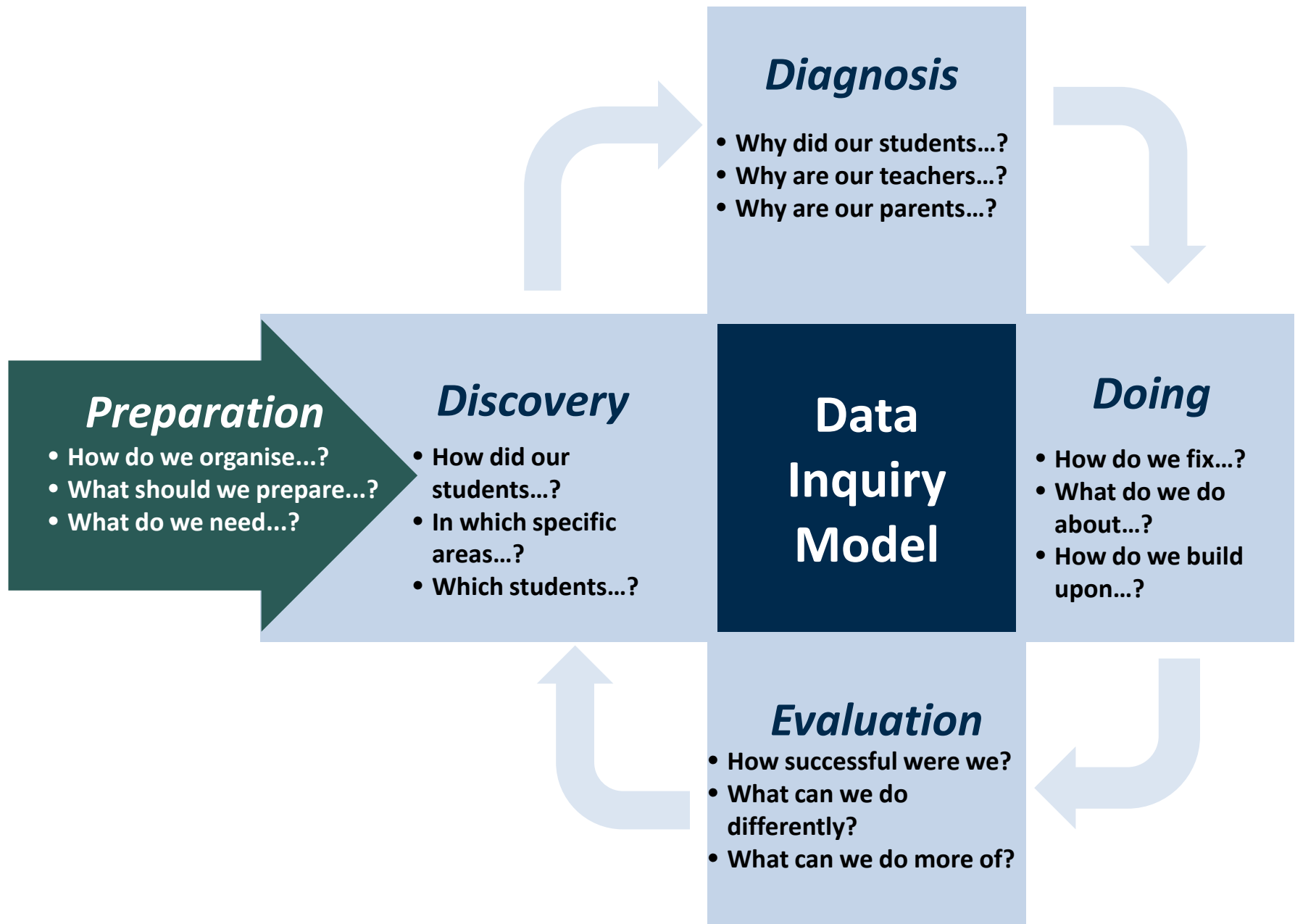
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# Module 8 Objectives

---

- Use their personal knowledge and experience to identify strategies to address the root cause.
- Identify high-impact strategies to implement in their school.
- Rate the feasibility of implementing these high-impact strategies.

# The Big Picture: Doing



Objective 1:

# Identify Strategies

---

- What do we know about the root cause?

# Identify Strategies

## 8.1 Brainstorming Possible Strategies

### Purpose

To identify strategies that could feasibly address the root cause to solve the identified problem

### Description

Your PLC data team will use their personal knowledge and experience and the information that they may have gained from consulting literature and colleagues to suggest strategies that could solve the problem.

### Time

20 minutes



# Identify High Impact strategies

## 8.2 Rating Strategies' Potential for Success

### Purpose

To determine which strategies are most likely to have a high impact on the root cause of the problem.

### Description

Your PLC data team will identify important qualities that a strategy must have to effectively solve the problem. You will add these qualities to the Strategy Rating Checklist as criteria against which the potential strategy can be rated. The team will then rank order the strategies based on their potential impact.

### Time

30 minutes



# Rate the Feasibility of Implementation

## 8.3 Feasibility of Implementation Checklist

### Purpose

To determine the feasibility of implementing each of the high impact strategies.

### Description

Using the Feasibility of Implementation Checklist, the PLC data team will rate and then rank order the high impact strategies based on the relative feasibility of their implementation.

### Time

20 minutes



# Wrap Up: In Session 8, we...

- Identified possible strategies to address the problem.
- Determined which strategies were most likely to have a high-impact.
- Rank ordered the high-impact strategies based on their feasibility of implementation.

<b>Preparation</b>	<input checked="" type="checkbox"/> Module 1: Getting Started <input checked="" type="checkbox"/> Module 2: Data Literacy
<b>Discovery</b> What's the issue or problem?	<input checked="" type="checkbox"/> Module 3: Identifying a Problem <input checked="" type="checkbox"/> Module 4: Evaluating Data
<b>Diagnosis</b> What's the root cause?	<input checked="" type="checkbox"/> Module 5: Analysing Discovery Data <input checked="" type="checkbox"/> Module 6: Hypothesising Root Causes <input checked="" type="checkbox"/> Module 7: Analysing Root Cause Data
<b>Doing</b> What are we going to do about it?	<input checked="" type="checkbox"/> Module 8: Brainstorming Strategies <input type="checkbox"/> Module 9: Developing Action Plans <input type="checkbox"/> Module 10: Monitoring Implementation
<b>Continuing</b>	<input type="checkbox"/> Module 11: Building a Data Use Improvement Plan <input type="checkbox"/> Module 12: Discovering, Diagnosing, and Doing Continued <input type="checkbox"/> Module 13 :Wrapping-Up



# Wrap Up: Next Steps

---

1. Using the rank ordered listing of feasible strategies, consult with appropriate staff, beyond the PLC data team, to gather feedback on the impact and feasibility of implementing each strategy.
2. Meet as a PLC data team to share the feedback that you received and to select the strategy that the team will implement.

## Wrap Up: Next Steps (continued)

---

3. Using the Communications Organiser introduced in Module 1, craft a memo describing the proposed strategy and the rationale for its selection. Distribute the memo about the selected strategy and ask for any last minute feedback from stakeholders.



# Using Data for Improving School and Student Performance

## Module 9: Developing Action Plans



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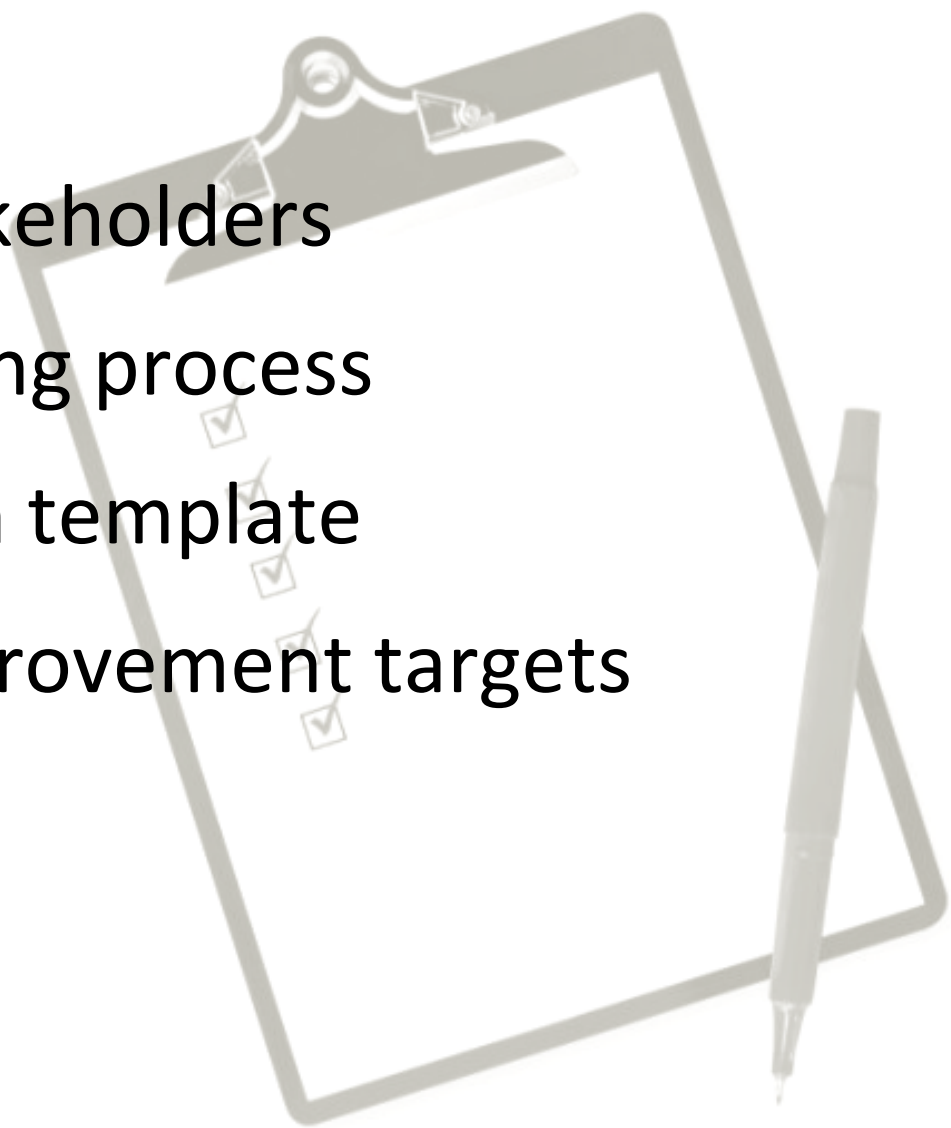
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# Agenda

---

- Introduction
  - Share feedback from stakeholders
  - Review the action planning process
  - Introduce the action plan template
  - Develop measurable improvement targets
  - Action Plan Example
  - Wrap up
- 

# What have we accomplished?

---

1. You gathered feedback from stakeholders on the most feasible high impact initiative.
2. You discussed, as a PLC data team, the feedback on the proposed initiative.
3. You crafted and distributed a memo describing the proposed strategy and the rationale for its selection.
4. You asked for last minute feedback from the stakeholders.

# Effective Team Meeting Checklist

---

- We clearly communicated the meeting time and place to everyone.
- I know where our meeting norms are published.
- We started on time.
- We used an agenda for the meeting.
- A moderator led the meeting.
- We appointed a note-taker and he/she took notes.
- Notes were published to all team members.
- We made it through all the agenda items
- We captured action items, the people responsible and timelines.
- We published our notes to all team members.
- We ended on time.
- All team members were present.

**Number of ticks:** \_\_\_\_\_

# Module 9 Objectives

---

1. Understand the action planning process
2. Write measurable improvement targets
3. Develop an action plan for implementing the initiative

# Feedback from Stakeholders: What did we learn?

---

## ■ Positives:

- 
- 
- 

## ■ Negatives:

- 
- 
- 

How will the feedback impact our plans?

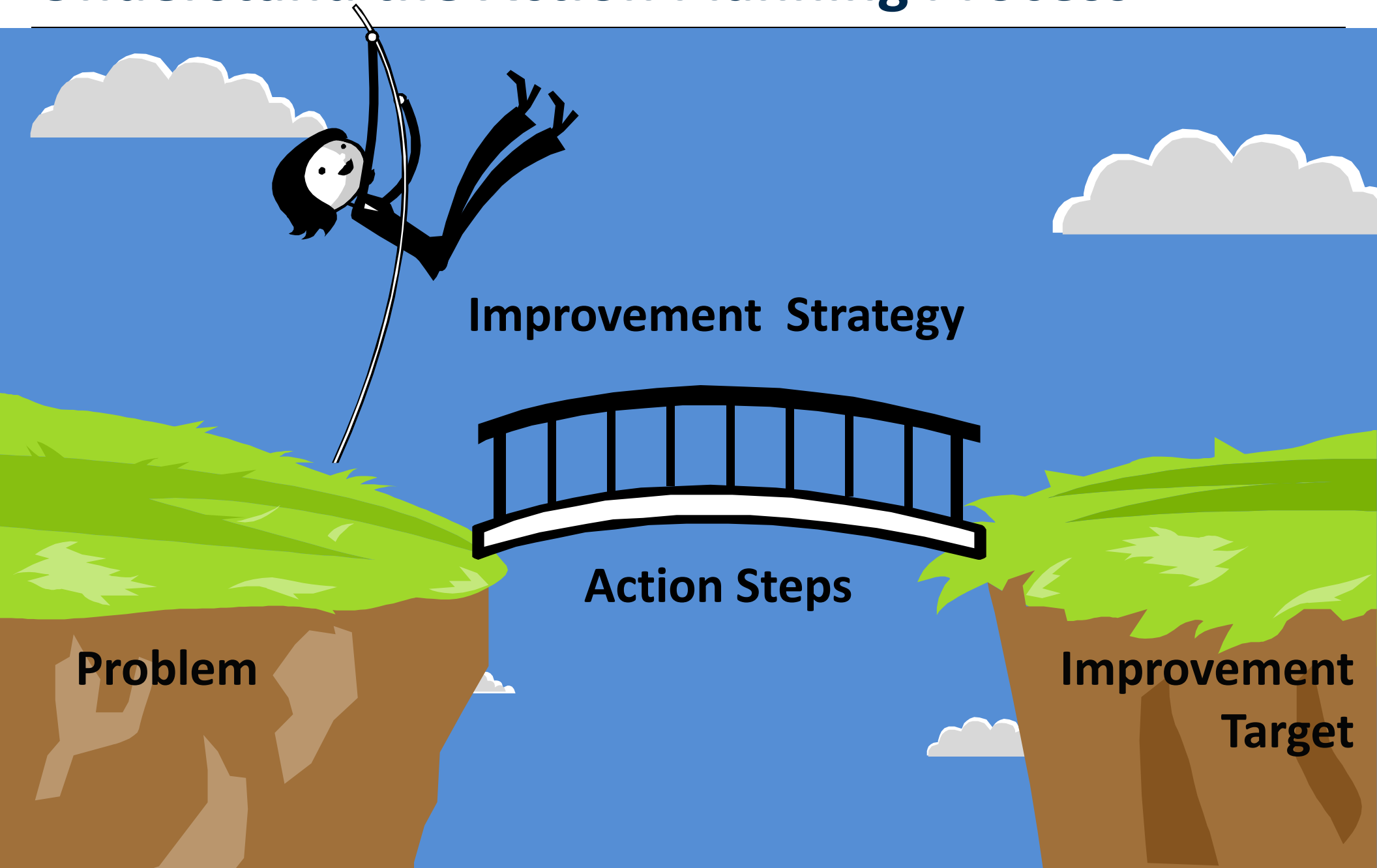
# What Have We Done So Far? We've...

---

1. Identified a critical issue and crafted a focusing question to initiate the inquiry
2. Analysed data on the focusing question, hypothesised and developed clarifying questions, and collected additional data that helped us to identify the problem and root cause of the problem
3. Identified a high impact initiative that is feasible to implement
  - What's next?
    - Now we need to develop an action plan for the implementation of the initiative

Objective 1:

# Understand the Action Planning Process



## Objective 1:

# Understand the Action Planning Process

---



### Common Pitfalls to Overcome

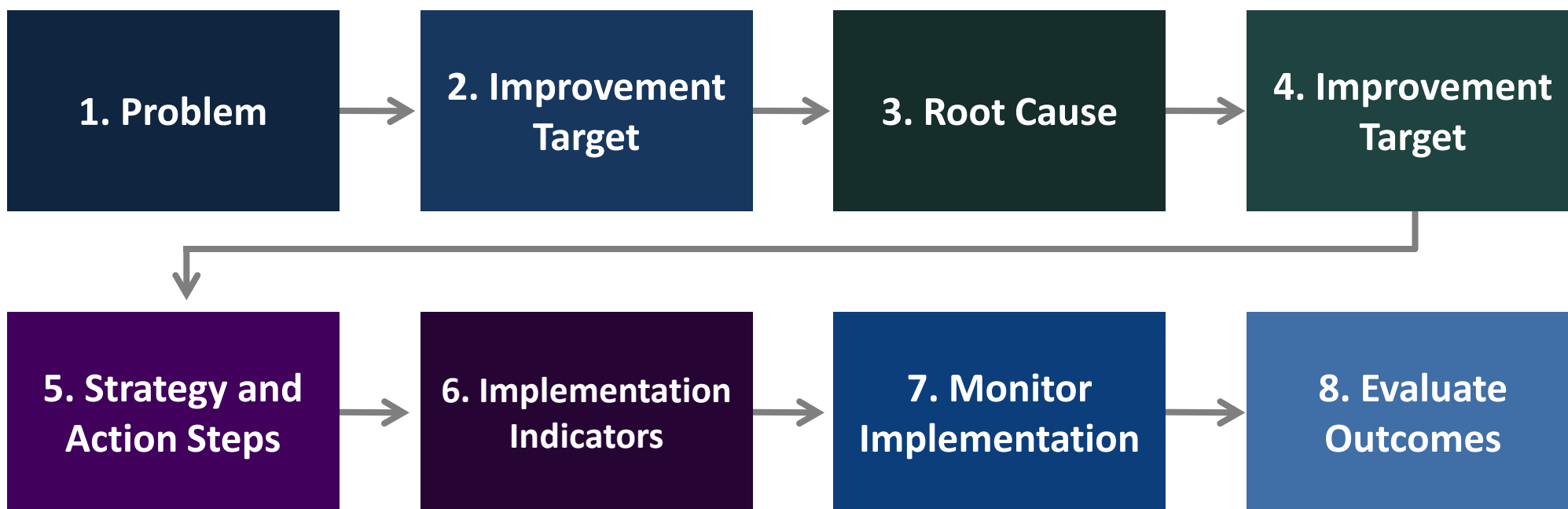
- Lack of clarity in defining the problem
- Vague goals
- Unmeasurable objectives
- Large and unmanageable implementation plans
- Lack of support for implementation
- Lack of understanding of the initiative to be implemented
- Confusing the initiative as the objective
- Lack of focus on the improvement target and desired outcome
- Lack of flexibility to modify the strategy based on feedback and data
- Inadequate progress monitoring

# Understand the Action Planning Process

## Our task:

Create an action plan that addresses the problem and its root cause.

## Action plan development sequence:



## Objective 1:

# Understand the Action Planning Process

---

## 9.1 – Action Planning Template

### Purpose

To introduce the action planning process

### Description

This template provides prompts that will help the PLC data team frame their action plan.

### Time

10 minutes in session with additional work required before the next session



# Understand the Action Planning Process

## Action Plan Template

Problem	Improvement Target

Root Cause (Problem of Practice)	Improvement Target

Strategy:

Action Steps	Deadline	Owner(s)	Resources	Implementation Indicators	Interim Outcomes/ Benchmarks

# Understand the Action Planning Process

## Problems and Improvement Targets

Problem	Improvement Target
Students entering secondary school with below expected reading skills have difficulty solving word problems in mathematics.	Increase the percentage of new students with below expected reading skills who demonstrate mastery in solving mathematical word problems on the termly assessment from 45% in 2010-11 to 55% by the end of the 2011-12 school year.

Root Cause (Problem of Practice)	Improvement Target
Our maths teachers do not teach mathematical concepts and associated reading skills in the context of word problems.	For each mathematical concept, all maths teachers will teach how to use that concept and associated reading skills in the context of multiple word problems during the 2011-12 school year.

# Develop Measurable Improvement Targets

---

- Elements of a well-written improvement target:
  - What will improve?
  - For whom?
  - By how much?
  - By when?

# Develop Measurable Improvement Targets

## 9.2 Creating Measureable Improvement Targets

### Purpose

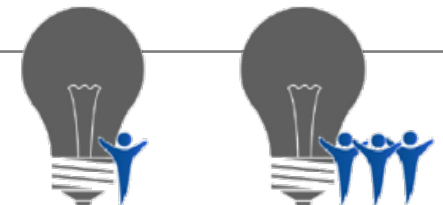
To learn how to create measurable improvement targets through practice and discussion.

### Description

As individuals, the members of your PLC data team will use the “elements of a well-written target” to practise creating measurable improvement targets from sample scenarios. Your team will also work to reach consensus on the “best target” for each scenario.

### Time

20 minutes to do several examples



# Develop Measurable Improvement Targets

## 9.3 Crafting Improvement Targets for Action Plan

### Purpose

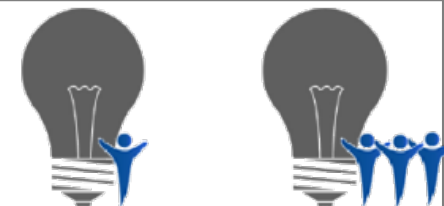
To reach consensus on the desired improvement target for the identified problem and the root cause of that problem.

### Description

Your PLC data team will brainstorm what the desired “end state” would be if the problem and its root cause (problem of practice) were effectively addressed. You will record potential “end states”, discuss the various options, and reach consensus on the “end state” that will be expressed as a measurable improvement target. The team will then craft improvement targets for the identified problem and the root cause of that problem to guide the creation of the Action Plan.

### Time

40 minutes



# Develop an Action Plan

## Action Plan Example

Problem	Improvement Target
Students entering secondary school with below expected reading skills have difficulty solving word problems in math.	Increase the percentage of new students with below expected reading skills who demonstrate mastery in solving mathematical word problems in the termly assessment from 45% in 2010-11 to 55% by the end of the 2011-12 school year.

Root Cause (Problem of Practice)	Improvement Target
Our maths teachers do not teach mathematical concepts and associated reading skills in the context of word problems.	For each mathematical concept ,all maths teachers will teach how to use that concept and associated reading skills in the context of multiple word problems during the 2011-12 school year.

# Develop an Action Plan

## Action Plan Example (Cont.)

Strategy: Teach new mathematical concepts and associated reading skills in the context of word problems.					
Action Steps:	Deadline	Owner(s)	Resources	Implementation Indicators	Interim Outcomes / Benchmarks
Meet with maths teachers who will implement the strategy. Explain the strategy and the teachers' role to gain their support.	30/9/11	PLC data team	Description of strategy with research base	<ul style="list-style-type: none"> <li>▪ Meeting held by early Sept.</li> <li>▪ Team explained the strategy</li> </ul>	<ul style="list-style-type: none"> <li>▪ 90% of maths teachers endorse the initiative</li> </ul>
Collaborate with maths teachers to develop termly assessments to measure mastery of word problems.	15/10/11	Director of assessment	Computer-based test item generator	<ul style="list-style-type: none"> <li>▪ At least 2 collaboration meetings held</li> <li>▪ Assessments reviewed by director of assessment</li> </ul>	<ul style="list-style-type: none"> <li>▪ Development of 3 termly assessments</li> <li>▪ Validity and reliability established by director of assessment</li> <li>▪ Teachers commit to administering the assessments</li> </ul>

# Develop an Action Plan

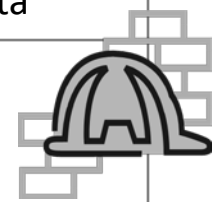


**“To survive in the new global economy will require massive consistent effort and immediate bold action! Without further delay, I am putting together a 10 year plan to study the problem further.”**

# Wrap Up: In Session 9, we...

- Gained an understanding of the action planning process .
- Identified and crafted improvement targets.
- Prepared to craft a plan to address our identified problem and its root cause.

<b>Preparation</b> What's the issue or problem?	<input checked="" type="checkbox"/> Module 1: Getting Started <input checked="" type="checkbox"/> Module 2: Data Literacy
<b>Discovery</b> What's the issue or problem?	<input checked="" type="checkbox"/> Module 3: Identifying a Problem <input checked="" type="checkbox"/> Module 4: Evaluating Data
<b>Diagnosis</b> What's the root cause?	<input checked="" type="checkbox"/> Module 5: Analysing Discovery Data <input checked="" type="checkbox"/> Module 6: Hypothesising Root Causes <input checked="" type="checkbox"/> Module 7: Analysing Root Cause Data
<b>Doing</b> What are we going to do about it?	<input checked="" type="checkbox"/> Module 8: Brainstorming Initiatives <input checked="" type="checkbox"/> Module 9: Developing Action Plans <input type="checkbox"/> Module 10: Monitoring Implementation
<b>Evaluating</b> What results did we get?	<input type="checkbox"/> Module 11: Preparing for Evaluation



# Wrap Up: Next Steps

---

1. Use the action plan template to construct an action plan that addresses the problem and its root cause.
2. Prepare to review your completed action plan in Session 10.



# Using Data for Improving School and Student Performance

## Module 10: Monitoring Implementation



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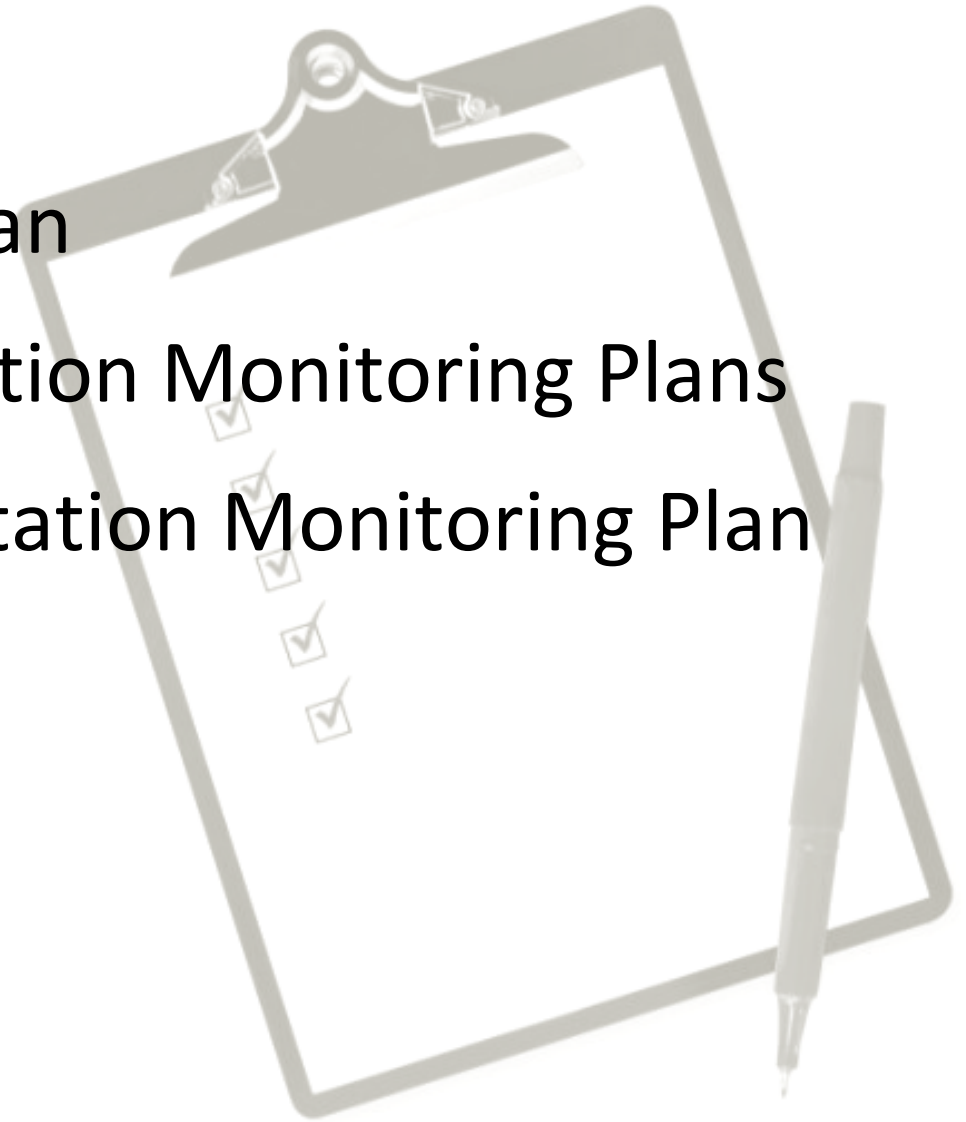


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# Agenda

---

- Introduction
- Review of draft action plan
- Overview of Implementation Monitoring Plans
- Begin to draft Implementation Monitoring Plan
- Wrap up
  - Evaluation survey



# What have we accomplished?

---

1. Completed the first draft of the action plan.

# Effective Team Meeting Checklist

---

- We clearly communicated the meeting time and place to everyone.
- I know where our meeting norms are published.
- We started on time.
- We used an agenda for the meeting.
- A moderator led the meeting.
- We appointed a note-taker and he/she took notes.
- Notes were published to all team members.
- We made it through all the agenda items
- We captured action items, the people responsible and timelines.
- We published our notes to all team members.
- We ended on time.
- All team members were present.

**Number of ticks:** \_\_\_\_\_

# Module 10 Objectives

---

1. Finalise the action plan for implementing your initiative.
2. Develop an Implementation Monitoring Plan.

# Finalise the Action Plan

## 10.1 Team Review of Draft Action Plan

### Purpose

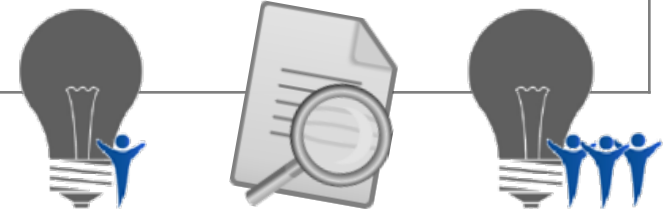
To review and revise the draft action plan to a final state that is ready for implementation.

### Description

Your PLC data team will conduct a final review of the draft action plan using the Action Plan Review Checklist. If necessary, members will suggest revisions for incorporation into the final plan.

### Time

30 minutes



## Objective 1:

# Finalise the Action Plan

Problem	Y/N	Problem Improvement Targets	Y/N
Is the problem expressed in terms of student outcomes?		Is the target clearly tied to the problem?	
Is there consensus that the problem represents a critical issue in your school?		Is the target expressed in terms of student outcomes?	
Is the problem based on an analysis of multiple sources of data?		Is the target specific and measurable in terms of what will change, for whom, by how much, and by when?	
Root Cause	Y/N	Root Cause Improvement Target	Y/N
Is the root cause something that is within your control to change?		Does the improvement target directly address the root cause?	
Will the root cause, if addressed, resolve the problem?		Is the target specific and measurable in terms of what will change, for whom, by how much, and by when?	
Was the root cause identified through research of best practices?		Has the team identified the data that needs to be collected to assess progress toward the improvement target?	

**Objective 1:**

# Finalise the Action Plan

Action Steps	Y/N	Implementation Indicators	Y/N
Are the action steps logically sequenced?		Are indicators expressed in terms of what you will see differently in the school and classroom?	
Are the action steps discrete and specific?		Are indicators clearly tied to the action step?	
Does each action step have a deadline and an owner?		Can the indicators be measured?	
Do the listed resources adequately support the action step?			

# Develop an Implementation Monitoring Plan

---

- Why monitor implementation?
  - If we look at only summative outcome data, we lose the opportunity to improve the initiative.
  - Formative data gathered along the way can help us determine if the initiative is being implemented effectively and if not, take steps to improve implementation.
  - Monitoring progress enables us to keep stakeholders informed of the initiative's progress.

# Develop an Implementation Monitoring Plan

---

- The action plan identified specific:
  - Indicators that would let us know if the initiative is being implemented effectively and as planned
  - Benchmarks or interim outcomes

# Develop an Implementation Monitoring Plan

---

- An effective monitoring plan:
  - Includes components from the action plan.
  - Provides a focused look at action plan elements that are needed to gauge the success of implementation and attainment of desired outcomes.
  - Identifies data that need to be collected, a time frame for collection, and assigns responsibility for data collection, analysis, and reporting.

# Develop an Implementation Monitoring Plan

*Turn to page 11 in your Guidebook to review the components of an Implementation Monitoring Plan.*

Implementation Monitoring Plan Template

Original Problem/Issue:				
Problem Improvement Target:				
Root Cause Improvement Target:				
Strategy:				
Action Steps	Implementation Indicators	Data Needed/ Date	Interim Outcomes/ Benchmarks	Data Needed/ Date
Strategy Status Report				
Person(s) Responsible:				Report Date

# Develop an Implementation Monitoring Plan

## 10.2 First Steps in Creating the Implementation Monitoring Plan

### Purpose

To begin to create your Implementation Monitoring Plan.

### Description

Using your final action plan, your PLC data team will begin to collaboratively develop the Implementation Monitoring Plan. Through the use of the provided Implementation Monitoring Plan Template, the team will complete all the required information for the first two action steps as noted in the first two rows of the action plan. Your PLC data team will complete the rest of your Implementation Monitoring Plan in subsequent team meetings.

### Time

45 minutes in session, with rest of work completed prior to next session.



# Wrap Up: In Session 10, we...

- Completed the final draft of the action plan
- Began developing an Implementation Monitoring Plan

<p><b>Preparation</b> How do we organize for data use?</p>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Module 1: Getting Started</li> <li><input checked="" type="checkbox"/> Module 2: Data Literacy</li> </ul>
<p><b>Discovery</b> What the issue or problem?</p>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Module 3: Identifying a Problem</li> <li><input checked="" type="checkbox"/> Module 4: Evaluating Data</li> </ul>
<p><b>Diagnosis</b> What's the root cause?</p>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Module 5: Analysing Discovery Data</li> <li><input checked="" type="checkbox"/> Module 6: Hypothesising Root Causes</li> <li><input checked="" type="checkbox"/> Module 7: Analysing Root Cause Data</li> </ul>
<p><b>Doing</b> What are we going to do about it?</p>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Module 8: Brainstorming Initiatives</li> <li><input checked="" type="checkbox"/> Module 9: Developing Action Plans</li> <li><input checked="" type="checkbox"/> Module 10: Monitoring Implementation</li> </ul>
<p><b>Evaluation</b> What results did we get?</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Module 11: Preparing for Evaluation</li> </ul>



# Wrap Up: Next Steps

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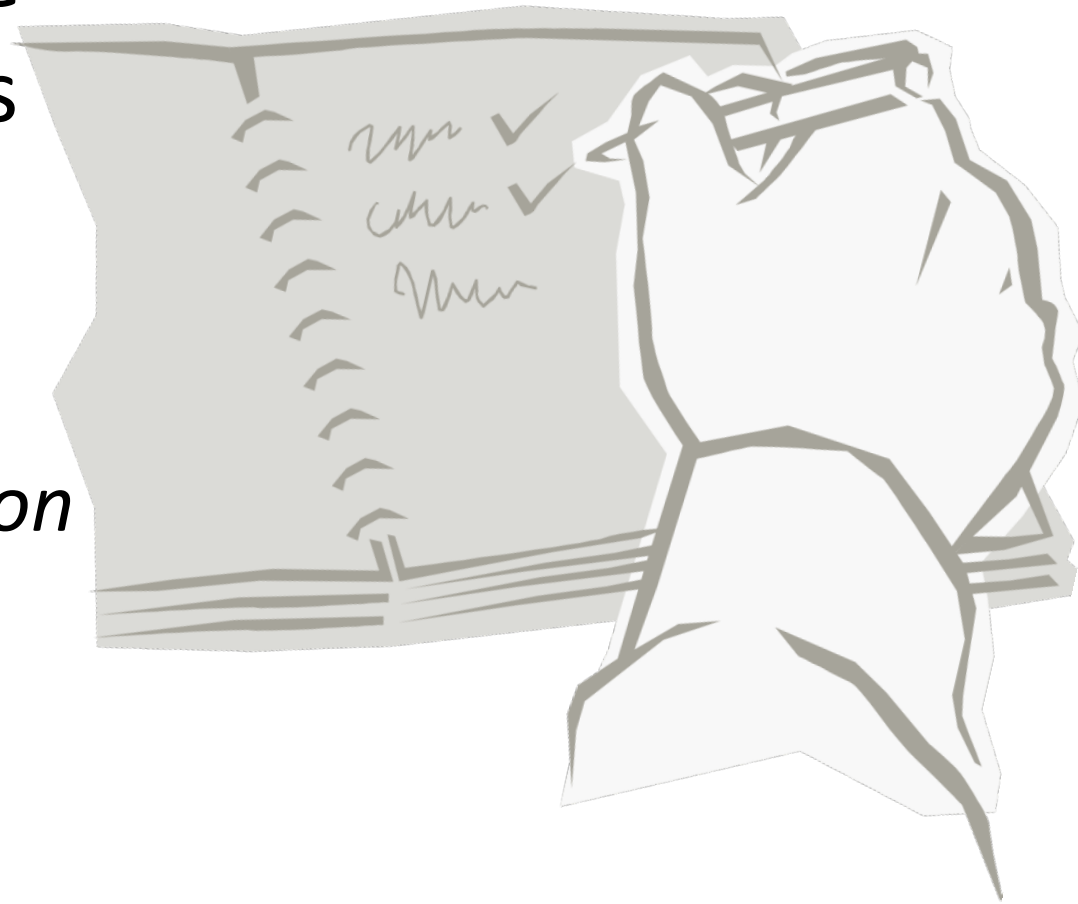
1. Implement the action plan.
2. Complete the Implementation Monitoring Plan.
3. Begin to monitor implementation.
4. Collect formative data as required by the Implementation Monitoring Plan.

# Evaluation

---

Please complete an evaluation of this course and your work up to this point.

*For this evaluation, reflect on your experiences from **Modules 8 to 10.***





# Using Data for Improving School and Student Performance

## Module 11: Preparing for Evaluation



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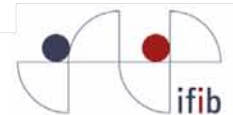


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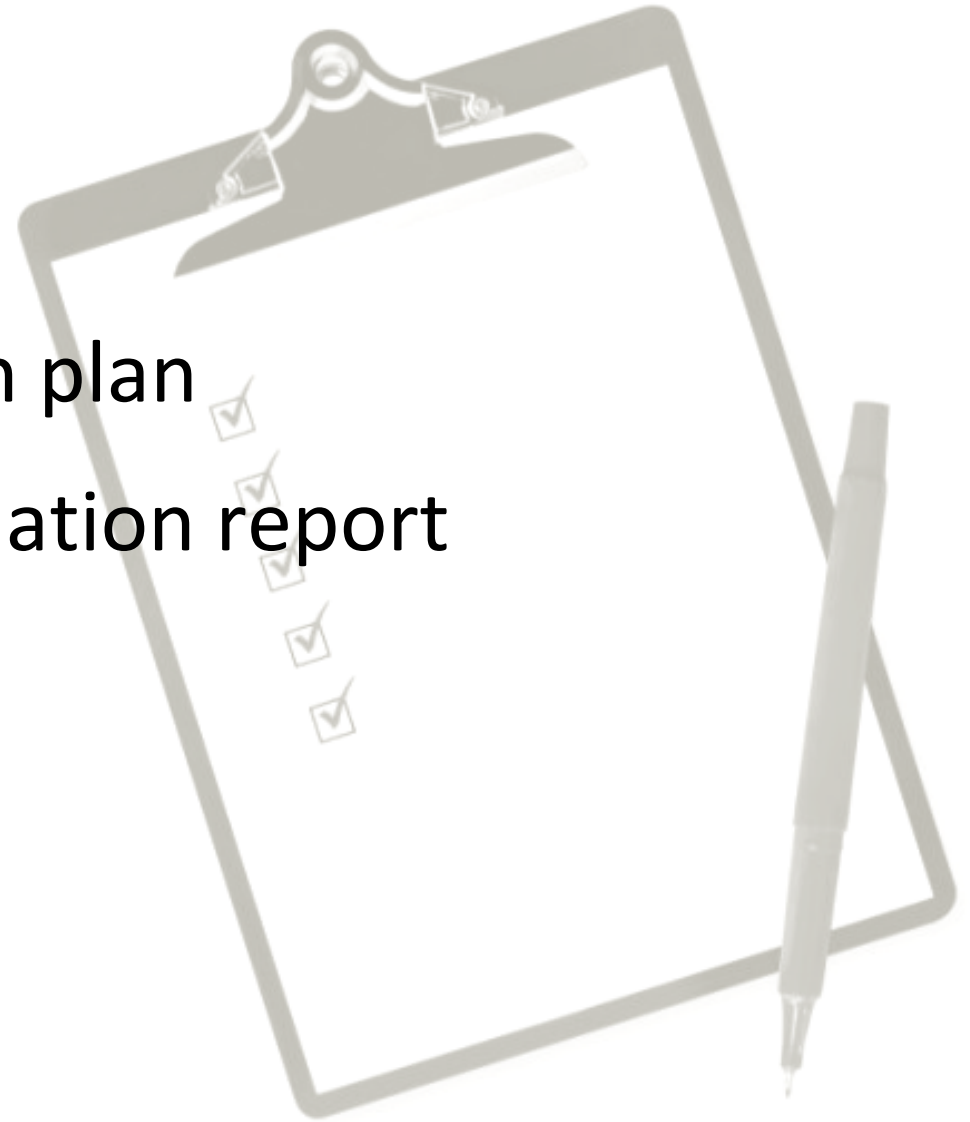


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# Agenda

---

- Introduction
- What is evaluation?
- Developing an evaluation plan
- Introduction to the evaluation report
- Wrap up
  - Evaluation survey



# What have we accomplished?

---

- Began to implement the action plan
- Completed the Implementation Monitoring Plan

# Effective Team Meeting Checklist

---

- We clearly communicated the meeting time and place to everyone.
- I know where our meeting norms are published.
- We started on time.
- We used an agenda for the meeting.
- A moderator led the meeting.
- We appointed a note-taker and he/she took notes.
- Notes were published to all team members.
- We made it through all the agenda items
- We captured action items, the people responsible and timelines.
- We published our notes to all team members.
- We ended on time.
- All team members were present.

**Number of ticks:** \_\_\_\_\_



# Module 11 Objectives

---

1. Understand programme evaluation.
2. Develop an evaluation plan.
3. Conduct a summative evaluation.
4. Publish an evaluation report.

# What is Evaluation?

---

“...the systematic assessment of the operation and/or outcomes of a programme compared with a set of explicit or implicit standards as a means of contributing to the improvement of the programme.”

For more information, see Carol Weiss: Introduction to Program Evaluation  
[http://www.cdc.gov/tb/programs/Evaluation/Guide/Webinar/Eval\\_101\\_1\\_AP22.ppt](http://www.cdc.gov/tb/programs/Evaluation/Guide/Webinar/Eval_101_1_AP22.ppt)

# What is Evaluation?

---

- Evaluations can be very complex or quite simple.
- It is better to conduct a simple evaluation than no evaluation at all.



# What is evaluation?

---

## Why evaluate the strategy?



# What is evaluation?

---

## Types of Evaluation:

- Process Evaluation
- Outcomes Evaluation
- Formative Evaluation
- Summative Evaluation

# The Evaluation Plan

---

Evaluation is a systematic assessment based on an explicit **evaluation plan** which includes:

- **The goal of the evaluation:** what does the evaluation aim to find out (the evaluation question)?
- How the **evaluation question** will be answered (methods/design)?
- How the **results will be reported** so that they are useful?

# The Evaluation Plan

---

## **Step 1: Describe the strategy to be evaluated.**

- Population (students/schools/LA)
- Goals/outcomes/improvement targets
- Strategy/intervention to be used
- Research-base (best practices) for the strategy

# The Evaluation Plan

---

## Step 2: Define the measurable improvement target.

- What do we want to find out through evaluation (evaluation questions)?
- Did the programme have the desired impact?  
Were the pre-defined outcomes attained (outcome evaluation)?
- How did the programme achieve the desired outcomes (process evaluation)?

# The Evaluation Plan

---

## Step 3: Select an appropriate evaluation design

Evaluation Designs vary from informal to very complex.

- As mentioned earlier, the complexity of the evaluation should be dictated by the type and amount of information needed to make decisions.
- Remember, a simple evaluation is better than no evaluation at all!

# The Evaluation Plan

---

***To compare or not compare,  
that is the question!***



# The Evaluation Plan

---

## Evaluation designs

- **Experimental design**

True randomised control group; pre- and post-tests

- **Quasi-experimental design**

Non-equivalent comparison group; pre- and post-tests

# The Evaluation Plan

---

## Identifying, collecting, and storing data

- Pre- and post-tests
- Progress indicators/benchmarks
- Student characteristics

*It is critical to identify, collect, and store data from the outset of the strategy in an MIS, data warehouse, Excel workbook, or other electronic medium.*

# The Evaluation Plan

---

## Step 4: Form inferences, findings, and conclusions from the results.

Make factual observations and form inferences, findings, conclusions from the results.

- Have the improvement targets been met?
- Why was the strategy successful? ...not successful?
- How can the strategy be improved?

# The Evaluation Plan

---

## **Step 5: Provide a method to communicate results.**

- Document the implementation of the strategy
- Provide both formative and summative data
- Prompt consideration of findings and next steps
- Communicate the strategy's structure and outcomes to stakeholders and others who may want to implement a similar strategy

# Creating an Evaluation Plan

## 11.1 The Evaluation Plan

**Purpose:**

To develop a plan that will guide the evaluation process.

**Description:**

Using your action plan, Implementation Monitoring Plan, and what you have learned in Module 11, PLC data team members will begin to construct an evaluation plan to guide the summative evaluation of the strategy’s success in achieving the improvement targets.

**Time:**

45 minutes



# Creating an Evaluation Plan

---

## A Review of the process

- **Step 1:** Describe the strategy to be evaluated.
- **Step 2:** Define the measurable improvement targets.
- **Step 3:** Select an appropriate evaluation design.
- **Step 4:** Form inferences, findings, and conclusions from the results.
- **Step 5:** Provide a method to communicate results.

# Creating an Evaluation Report

## 11.2 The Evaluation Report

### **Purpose:**

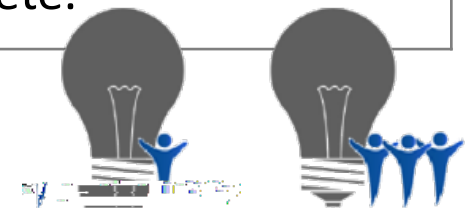
To develop a report that will summarize the initiative, present findings and next steps and communicate the results to stakeholders.

### **Description:**

Using the Action Plan, the Implementation Monitoring Plan, and what you have learned from implementing the Evaluation Plan, the PLC data team members will construct an Evaluation Report that will communicate the results of the summative evaluation of the strategy's success against the improvement targets to stakeholders.

### **Time:**

15 minutes to introduce. Multiple PLC data team meetings to complete.



# Evaluation Report: Outline

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- Overview
- Implementation description
- Evaluation results
- Recommendations and next steps

# Evaluation Report Template

Section I: Overview	
Original issues/focusing question	
Summary of initial findings	
Identified problem	
Root cause	
Improvement targets	Identified problem:
	Root cause:

Section II: Implementation Description	
Description of major actions taken	

# Evaluation Report Template

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Detailed Action Step Results			
Action step	Implementation indicator	Date completed	Results

# Evaluation Report Template

## Section III: Results

*Use this section to summarise your results with data displays and written descriptions of your findings. Attach pages as necessary.*

## Section VI: Recommendations and Next Steps

New focusing  
questions

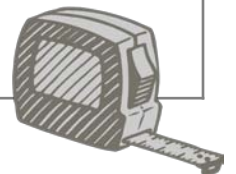
Next steps

*New team formulation, creation of new data displays,  
identification of audiences for communication...*

# Wrap Up: In Session 11, we...

- Learned about programme evaluation.
- Introduced the evaluation plan.
- Introduced the evaluation report.
- Prepared to evaluate the strategy.

<b>Preparation</b> How do we organize for data use?	<input checked="" type="checkbox"/> Module 1: Getting Started <input checked="" type="checkbox"/> Module 2: Data Literacy
<b>Discovery</b> What's the issue or problem?	<input checked="" type="checkbox"/> Module 3: Identifying a Problem <input checked="" type="checkbox"/> Module 4: Evaluating Data
<b>Diagnosis</b> What's the root cause?	<input checked="" type="checkbox"/> Module 5: Analysing Discovery Data <input checked="" type="checkbox"/> Module 6: Hypothesising Root Causes <input checked="" type="checkbox"/> Module 7: Analysing Root Cause Data
<b>Doing</b> What are we going to do about it?	<input checked="" type="checkbox"/> Module 8: Brainstorming Initiatives <input checked="" type="checkbox"/> Module 9: Developing Action Plans <input checked="" type="checkbox"/> Module 10: Monitoring Implementation
<b>Evaluation</b> What results did we get?	<input checked="" type="checkbox"/> Module 11: Preparing for Evaluation



# Wrap Up: Next Steps

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- Continue to implement the action plan.
- Use the Implementation Monitoring Plan.
- Complete the evaluation plan.
- Collect formative data as required by the Implementation Monitoring Plan.
- Collect data consistent with the evaluation plan.

## Wrap Up: Next Steps (continued)

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- Upon full implementation of the strategy, complete the evaluation and publish the evaluation report.
- Coordinate the administration of the Data Use Survey by your school staff. Analyse the results as you did in Module 1. Publish your findings as you did with the initial Data Use Survey.

# Evaluation

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Please complete an evaluation of this course and your work up to this point.

*For this evaluation, reflect on your experiences from **Module 11.***

