Chapter 7: Establish Routines and Solve Problems

Questions from Diagnostic Tool

- Have we established regular performance dialogues to monitor our progress toward achieving our goals and the likelihood that we will achieve them in the future?
- Is there clear ownership of each of the policy elements related to the NGSS?
- Do these routines rely on a broad evidence base, including the feedback loops in the implementation plan, to arrive at a regular and shared view of progress?
- Do these routines help leaders identify and solve the most challenging problems as they arise?
- Do these routines build on established processes and mechanisms for management that are already in place?
- Do we regularly communicate our progress/decisions internally to the state education agency and externally to those interested and/or affected (e.g., districts, state board, key legislators)?

The final thing to consider in planning for NGSS implementation is establishing or refining routines for monitoring progress and solving problems. This work will occur as you transition to implementation of the NGSS.

Routines are regular opportunities for key leaders to discuss progress, identify challenges and develop solutions to drive implementation forward. At their heart, routines are intended to answer questions such as "Are we on track to achieve our promised results? And if not, what are we going to do about it?" They make your implementation planning real. As opportunities to regularly review progress against what is laid out in your plan, routines will make your adoption and implementation plan a true living document that drives your work. Routines may take a number of forms, from in-person meetings to written notes, but should all include a discussion of performance in which the chief or other key system leader holds other leaders accountable for implementation progress and student outcomes.

Routines will allow your strategic leadership team to identify and address challenges early, before they become major stumbling points. Managed well, they will allow state leaders time to focus on the work that is expected to have the greatest impact on student outcomes and avoid getting distracted by the loudest problem of the day. Your state likely has some form of performance management routines in place already. In this case, you should consider how to leverage your existing routines to monitor progress on the implementation of the NGSS. This could mean adding NGSS implementation as a focus at regular intervals for the senior leadership team. It could mean adjusting an existing science-focused routine to include NGSS implementation. Or it could mean integrating the NGSS into routines for CCSS implementation. It will be up to the leadership of the agency to decide how routines for NGSS implementation best fit into the existing structure.

This chapter is broken into two parts. The first will allow you to reflect on existing performance management routines and consider how they can be adapted to allow you to monitor the progress of NGSS implementation. The second part provides more concrete tips and tools for organizing, preparing for and conducting routines.

Action Steps
Step 1: Reflect on existing performance management routines and consider how they can be adapted to monitor the progress of NGSS implementation.
Step 2: Organize, prepare for and conduct routines.

Step 1: Reflect on Existing Performance Management Routines and Consider How They Can Be Adapted To Monitor the Progress of NGSS Implementation

Most state agencies have some sort of routine meetings, but true performance management routines may look different from what is already in place. To engage the full strategic leadership team, it may be necessary to either create new routines or modify existing ones so that all of the relevant stakeholders are able to participate. Strong routines should include each of the following characteristics:

Agreeing on a common purpose: Do all people participating in the routine clearly understand and agree on its purpose — to discuss performance against priorities, identify and solve problems, and identify and commit to clear next steps?

Arriving at a shared view of performance and progress: Is the discussion structured to help participants discuss and agree on current progress against priority goals? What range of evidence is used to support this discussion?

Identifying and solving problems: Does the routine help participants identify and agree on the most critical barriers to achieving priority goals? Does it create space for creative problem-solving that empowers participants to address these challenges?

Encouraging learning and collaboration: Does the routine encourage participants to identify challenges that are common among their peers and learn from each other's best and most promising practices?

Identifying and committing to clear next steps: Does every routine produce a clear and actionable list of next steps for all relevant participants that can be tracked through future routines?

To be clear, the goal is not to add routines for routines' sake but to make sure that the routines that exist include these key characteristics. Exercise 24 will help you reflect on the quality of an existing routine and consider how you can leverage it to monitor progress on NGSS implementation.

EXERCISE 24: Reflect on the Quality of Existing Routines

Objective(s) for participants:
- Evaluate whether existing performance management routines meet the criteria for a strong routine.
- Identify recommendations for strengthening an existing routine.

Instructions:
- Choose an existing performance management routine that could be used to monitor progress on NGSS implementation. This could be an existing routine for science or a related initiative such as implementation of the CCSS.
- For that performance management routine, review each characteristic of a strong routine and record the existing strengths on the flipchart.
- Again referring to the characteristics, record the things that might be missing from the routine.
- Using the identified strengths and challenges of the existing routine, create key recommendations for strengthening the existing routine and integrating NGSS implementation.

Materials needed:
- Flipchart
- Markers

Template for Exercise 24

Existing routine:		
Characteristics/Questions To Consider	**Strengths of Existing Routine**	**Existing Challenges or Things Missing from Existing Routine**
Agreeing on a common purpose: Do all people participating in the routine clearly understand and agree on its purpose — to discuss performance against priorities, identify and solve problems, and identify and commit to clear next steps?		
Arriving at a shared view of performance and progress: Is the discussion structured to help participants discuss and agree on current progress against priority goals? What range of evidence is used to support this discussion?		
Identifying and solving problems: Does the routine help participants identify and agree on the most critical barriers to achieving priority goals? Does it create space for creative problem-solving that empowers participants to address these challenges?		
Encouraging learning and collaboration: Does the routine encourage participants to identify challenges that are common among their peers and learn from each other's best and most promising practices?		
Identifying and committing to clear next steps: Does every routine produce a clear and actionable list of next steps for all relevant participants that can be tracked through future routines?		
Recommendations:		

The recommendations you develop for improving your routine will vary based on what already exists in your state. Step 2 in this chapter is designed to help you put the recommendations you developed in Exercise 24 into practice. Step 2 provides concrete tools and tips for preparing for and conducting routines. Note that these tools are quite specific, so you can choose to use or adapt them as necessary to fit your own state's context.

Step 2: Organize, Prepare for and Conduct Routines (Optional)

There are a number of things to consider when organizing, preparing for and conducting routines. The tools laid out here may be of use to your state team when designing new routines or making substantial refinements to existing ones.

First, consider who is and who should be involved in your routines. At minimum, routines should include:

- A top system leader, likely the chief, who is receiving the report. In some cases, this will be the chief state science supervisor or the governor's education policy adviser. The leader of the routine will vary according to where the responsibility for your goals and strategies lies.
- The person responsible for implementation of the particular target, strategy or district you are reviewing progress for or the person responsible for NGSS implementation more generally.
- The person responsible for organizing the routines and gathering relevant data.
- Other key leaders within your agency or key stakeholders involved in the implementation work, as appropriate.

Finally, you will also want to structure routines so their format and frequency fit the needs of those involved. Routines should occur frequently enough that major challenges will not go unnoticed but not so frequently that preparation becomes an overwhelming burden. When scheduling, consider the existing schedule of routines, use existing meetings when possible and work to ensure coherence with routines around related priorities such as the CCSS.

As you saw in Step 1, it is important for routines to be focused on a clear, common purpose. While the purpose may sometimes seem evident, clearly articulating what your routine will measure can help create this common focus. Note that if you completed the exercises in the previous chapters, much of this has already been determined. The goals you established in Chapter 2, the strategies you identified in Chapter 4, and the associated targets and trajectories that you established in Chapter 5 should form the basis of routines as often as new data are available on those particular metrics. You will likely have routines more often than new data are available, however, so consider what other data you will use to measure progress. It will be up to you to choose the level of detail that is appropriate for your context. You might explore progress on specific strategies or targets or even specific districts that require additional assistance, as they relate to your overall goals.

Note that routines do not always require quantitative data. While the data you use in routines will often be quantitative leading indicators of your larger target metrics, you should also consider what qualitative data you might use to inform progress. The feedback loops you established in Chapter 4 are important qualitative evidence indicating implementation progress.

Exercise 25 will help you identify the data you will use to monitor progress. Again, bear in mind that if you completed the exercises in previous chapters — particularly those related to defining your aspiration and planning implementation — this exercise should mostly be about revisiting that material and filling in any additional blanks.

EXERCISE 25: Define the Data Used for Measuring Progress

Objective(s) for participants:
- Identify the data to use for measuring progress in the NGSS implementation routines.

Instructions:
- For each goal identified previously, answer each of the following questions and record responses on the flipchart:
  - What measure (or measures) will we use to show progress on this goal?
  - How will we know we are successful?
  - How will we collect the necessary information ahead of each routine?
  - Who will be responsible for the success of this goal?

Materials needed:
- Flipchart
- Markers
- Responses from previous exercises, if applicable

Template for Exercise 25

Goal	What Measure(s) Will We Use?	How Will We Know We Are Successful?	How Will We Collect the Information?	Who Will Be Responsible for Success?

With so many data points to collect and review, putting it all together to provide a clear view of progress often can be difficult. To address this difficulty, you may choose to use the assessment framework tool to measure progress. The assessment framework, detailed in Figure 15, allows for (1) the comparison of different kinds of data and (2) the incorporation of a qualitative component of evidence (in the form of calibrated judgments) beyond the data alone. In short, this tool will help you bring together existing qualitative and quantitative evidence to answer the question: Given what we know about progress on relevant activities, what is the likelihood that we will be successful?

FIGURE 15: Assessment Framework

The assessment framework[9] is a qualitative rubric that asks several rigorous questions about the stages of implementation to determine the likelihood of success of a given component. The qualitative judgments are combined with the data that are available to render an overall judgment. The framework can be applied at any level — to a particular goal (what is the likelihood we will reach our target?) or to a strategy within that goal (what is the likelihood the strategy will deliver its estimated contribution to the goal?).

Participants will use the assessment framework rubric with the key available data to render a judgment for three components of the goal or strategy:

- Quality of planning;
- Capacity; and
- Evidence of progress.

Rating	Definition
Green	On track; very high likelihood of success
Yellow	Mixed results; mid to high likelihood of success
Orange	Problematic; low to mid likelihood of success
Red	Highly problematic; very low likelihood of success

Each component should be given a rating on a scale of green to red: Participants should then combine the three components and examine the overall picture to come to an overall judgment regarding likelihood of success for that goal or strategy. This judgment should follow the same green to red scale.

Finally, participants should calibrate the results by sharing and comparing their findings. They should reflect deliberately about whether a green judgment looks the same within and across goals and strategies and adjust findings as necessary to ensure valid, shared results. These data enable the strategic leadership team to have regular conversations about whether the implementation activities are having the expected impact. By applying a similar type of routine and assessment framework to each of the components of the goal or strategy, the strategic leadership team can establish a monitoring system to help drive results. Ultimately, the purpose is to identify implementation barriers and problem solve.

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[9] The assessment rubric is a deliverology term used by the U.S. Education Delivery Institute; it is not to be confused with a state education agency's assessment system and blueprint.

Assessment Framework Rubric			
Element of Framework	**Key Questions**	**Ratings**	
		Very Low Likelihood (Red)	Very High Likelihood (Green)
Quality of planning	Have we identified a key person and team responsible for leading the strategy or goal and ensuring success? Does our strategy or goal have a plan (possibly as part of a larger plan) that sets out clear milestones for implementation and measures of progress, with an estimate of how (and how much) the work will affect the target(s)?	We have no clear accountability for this strategy or goal. We have no plan, or we have a plan that falls short in several ways: • Includes no milestones or measures; • Does not reflect current reality of work; and • Makes no connections to the target(s).	We have a clear plan that makes a plausible case for how this work will affect our target(s). The plan's milestones and measures provide a clear basis for monitoring and accountability. The plan has a leader and team that uses it to drive ongoing work and monitor progress.
Capacity	Have we specified the roles that everyone will need to play — at the state, district, school and classroom levels — for implementation to have a real impact on the target(s)? How well are we engaging with these people to build capacity? How willing and able are they to play their roles right now?	We do not have a clear sense of who will need to do what for the strategy to be successful. We do not have a clear sense of what it will take to reach our schools and classrooms at scale. Our engagement with schools and classrooms is sporadic and based on the hope that we will somehow reach a critical mass of people.	We have identified the specific individuals at every level who are critical to the strategy's success and the role each will have to play to implement the strategy at scale. Most of these critical individuals are aligned with the work and have sufficient capacity.
Evidence of progress	What evidence do we have that shows whether implementation is working as intended to have an impact on the target(s)? What do the latest data say about our progress on this strategy or goal? What do the latest data say about our progress on the target(s) itself?	We do not consistently monitor progress on this strategy or goal. We do not use evidence of progress, or our evidence is limited to the data on the target. To the extent that we have any kind of evidence, the data are stagnant or moving in the wrong direction.	We collect and review relevant evidence as soon as it is available, ranging from outcome metrics to leading indicators and process measures. Feedback loops result in mid-course corrections. Process and leading indicator data are improving.

Figure 16 illustrates the assessment framework in use. Exercise 26 will allow you the opportunity to practice using the assessment framework with a goal or strategy you have identified as critical to your NGSS implementation.

FIGURE 16. Sample Assessment Framework

Goal:	Increasing course-taking and passage rates for rigorous science courses at the high school level	
	Rating	Rationale
Quality of planning		We have identified the strategies we expect to help us achieve this goal and responsible leaders for each. But more could be done to articulate specific milestones for those strategies so we can more clearly monitor progress.
Capacity		We understand who is doing what at the state level and have begun to think about how we'll interact with schools and teachers, but we have not yet begun to connect with the field and therefore do not have a clear idea of capacity and challenges at that level.
Evidence of progress		Because we are still in the early stages of implementation, we have little evidence at this point. We are working to establish milestones to monitor our progress. We are also working to create a pipeline with districts so we can have up-to-date data on course-taking and grades from schools.

Overall likelihood of success		While we are still in the early stages, we have a clear idea of where we want to go with this work, and we know what we need to do to make it happen. The challenges that lie ahead involve finding the time and capacity to implement our strategies and provide support to districts and schools, as they are the key players in this work.

EXERCISE 26: Use the Assessment Framework To Make a Judgment on the Likelihood of Success for a Given Strategy or Goal

Objective(s) for participants:
- Evaluate current likelihood of success for a strategy or goal.
- Identify the challenges, next steps and help needed to improve the likelihood of success.

Instructions:
- Select a goal or strategy identified in a previous exercise to evaluate; record it on the flipchart.
- For that goal, answer the following, using the assessment framework rubric, on the flipchart:
  - What is the quality of planning on a green to red scale? Why?
  - What is the capacity on a green to red scale? Why?
  - What is the evidence of progress on a green to red scale? Why?
- Taking into account the judgments made for quality of planning, capacity and evidence, plus any additional data that may be available, make a green to red judgment on overall likelihood of success for the goal or strategy. Record it, as well as the rationale, on the flipchart.
- Using the notes in the rationale sections of the template, compile the potential challenges for successful implementation of this goal or strategy and record them on the flipchart.
- Based on those challenges, decide on next steps and identify any areas where additional help or resources are needed. Record them on the flipchart.

Materials needed:
- Flipchart
- Markers
- Assessment framework rubric
- Responses from previous exercises, if applicable

Exercise notes:
- It may be helpful to have individuals use the rubric on their own and then share answers in the group to come to consensus.
- You could also ask individuals or small teams to each evaluate separate goals or strategies and then come together and calibrate color judgments across goals or strategies.

Template for Exercise 26

Goal or Strategy		
	Rating	Rationale
Quality of Planning		
Capacity		
Evidence of Progress		

Overall Likelihood of Success		

Potential Challenges	
Potential Next Steps	
Potential Help Needed	

To ensure that routines are able to meet the key characteristics — particularly arriving at a shared view of performance and progress — a good bit of preparation is required. You may want to identify a person responsible for preparing for and running routines to ensure that they happen. This implementation coordinator will not be the chief or the person directly responsible for implementation and outcomes. Instead, this person will be responsible for gathering evidence on progress, using that evidence to prepare an initial view of progress, setting agendas and preparing for discussions, and briefing the chief and the person responsible for implementation ahead of time. This person is responsible for ensuring that routines happen and that they are structured and managed effectively to achieve the necessary outcomes.

The implementation coordinator should gather the evidence identified in Exercise 25, use it to make a judgment on the progress so far and then develop the agenda. Generally, agendas will follow the same objectives, based on the key characteristics of a strong routine:

* Arrive at a shared view of progress;
* Identify specific challenges and the root causes behind those challenges;
* Identify strategies for getting back on track; and
* Identify and commit to next steps and discuss areas of need or assistance.

The implementation coordinator should be deliberate in shaping an agenda, developing the necessary materials and briefing the key participants ahead of time so that the routine is set up to meet those objectives. This includes structuring activities — such as discussions, presentations, Q&A, brainstorming, and problem-solving — so they meet the intended objectives. He or she can also prepare guiding questions to help drive the conversation and ensure that participants arrive at a shared view of progress and next steps. Figure 17 includes examples of some typical guiding questions that might be useful for this purpose. Finally, the implementation coordinator should identify the necessary data and prepare or gather the necessary analyses to use in the routine.

FIGURE 17: Guiding Questions To Drive Conversation

Type of Guiding Question	Examples
Hold others to their own standards	"How do you know that what you're focusing on will improve student performance in science?" "Your commitment to narrowing gaps is inspiring; how do you intend to address the special education student gap?"
Test assertions	"You mentioned that you thought your leadership team was strong. How do you know that?"
Follow premises to the logical conclusion	"If you have a goal, why wouldn't you have a plan that shows how you intend to deliver on that goal?" "If you are trying to focus on performance, wouldn't it be important to collect this information?"

Type of Guiding Question	Examples
Use comparisons to provide challenge and to take excuses off the table	1: "I don't see how 75 percent proficiency is possible, given our level of disadvantage." 2: "Well, the school down the road is getting 90 percent, and it has the same level of disadvantage as you — so what's stopping you?"
Encourage prioritization and focus on root causes	"What are the top three barriers that you face to making this work?" "What are the top three messages that you'd want to send to the chief?" "Where is the biggest issue and why?"
Put participants in the shoes of the front-line or end user	"If you had a group of your students here right now, what would they say are the reasons they do not take upper-level science courses?" "That's a really great articulation of the issue. If I spoke to teachers in these schools, would they give a similar message?"
Use "what-if" questions to test the possibilities	"How much would we improve if we got the bottom quartile to perform at the level of the current average?" "How much would we improve if every teacher in every classroom got just one more student to score proficient this year?"
Use comparisons to find solutions	"Are there other schools that have the same issue as you but aren't struggling in the same way? What do they do about it?"
Suspend disbelief	"What would it take to get 20 more students to take upper-level science courses at a given school next year? If there were no constraints, what would it take?"

Exercise 27 will help the implementation coordinator take the outputs out of the previous exercise to prepare an agenda for a routine focused on that goal, including key objectives, necessary data and guiding questions.

EXERCISE 27: Develop an Agenda for a Routine

Objective(s) for participants:
- Create an agenda, including key data and questions, to meet the objectives of a strong routine.

Instructions:
- Using the goal or strategy evaluated in Exercise 25, identify any additional objectives for this routine and record them on the flipchart.
- For each objective, answer the following and record responses on the flipchart:
  - How will I ensure that the objective is met in the meeting? That is, how will I structure that time to meet that objective? What balance of presentation, data exploration, questioning, discussion and problem-solving will I use?
  - How long will this portion take?
  - What materials will I need to prepare or bring to move the conversation forward and help participants reach the intended objective?
  - What key facts or data will I bring?
  - What key questions will help move the discussion forward?

Materials needed:
- Flipchart
- Markers

Exercise notes:
- While this agenda might seem quite detailed (perhaps even overly detailed), deliberately considering each of these elements ahead of time will help prepare a more effective conversation, ensure that each part of the agenda is addressed and result in an all-around better routine. You may choose to adapt the agenda for your needs, but keep these elements in mind.

Template for Exercise 27

Goal or Strategy To Be Reviewed	

Objectives	Arrive at a shared view of overall progress
	Identify and commit to next steps

What (Objective)	How	Time	Materials	Key Facts	Key Questions
Arrive at a shared view of overall progress					
Identify and commit to next steps					

Conclusion

In this chapter, you connected the work done in previous chapters to real implementation. The routines discussed here will help turn your adoption and implementation plans into reality by making them usable documents that drive the work.