



# IM Certified™ Math Professional Learning Catalog



[www.illustrativemathematics.org](http://www.illustrativemathematics.org)

## IM 6–8 Math

Spring 2019 IM Certified Math Professional Learning Catalog  
For more information on arranging offerings from this catalog contact an  
[IM Certified™ Professional Learning Partner](#)

## PROFESSIONAL LEARNING CATALOG STAGE DESCRIPTIONS

Our catalog is informed by the Concerns-Based Adoption Model, and so we have grouped our offerings roughly around stages of concern that teachers may experience in implementing a new curriculum. Every offering focuses on the knowledge and skills teachers need to teach IM effectively but they are further grouped into:

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## FOUNDATION

**Teach & Learn**

Designed for schools in their first implementation year, offerings that support teachers to understand the mathematical progressions in the curriculum, the instructional routines, and other embedded supports for understanding and managing teaching with IM.

## EXTENSION

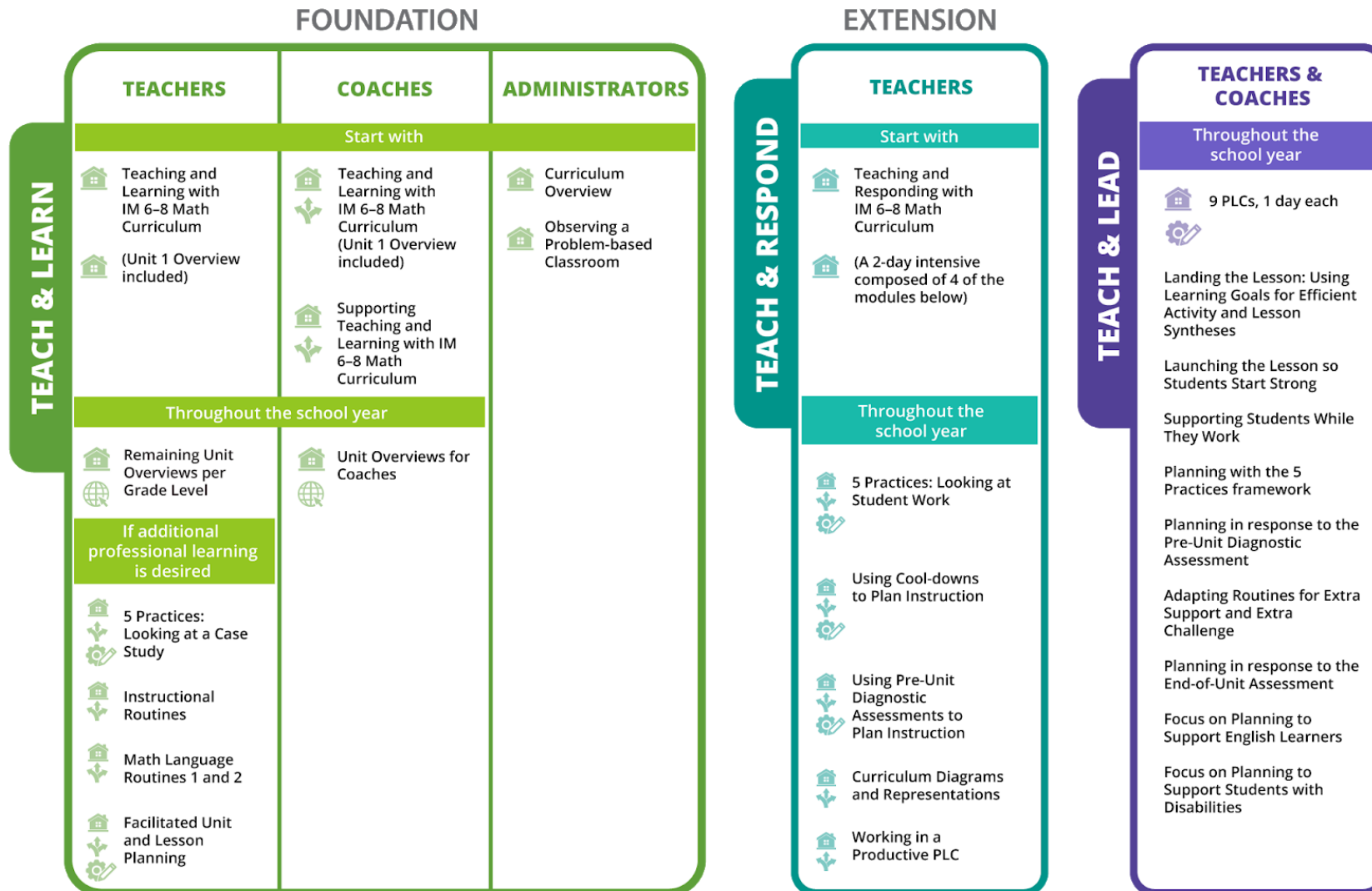
**Teach & Respond**

Designed for schools with experience teaching IM, offerings that support teachers to anticipate, make sense of, and respond to student thinking using tools in the IM curriculum, such as understanding trajectories across grade levels to support students with unfinished learning, how to adapt instruction based on formative assessment, etc.

**Teach & Lead**

Designed for schools with experience teaching IM that are ready to teach and lead collaboratively, offerings that focus on building local capacity through teacher collaboration routines and tools for planning, looking at student work, and reflecting on practice.

## IM Certified 6–8 Math: High Level Implementation Paths and School Year Timeline (PL Index to follow)



(footnote) IM Coaching is available to support implementation of the IM curriculum focusing on new teaching practices to support student learning.

## IM Certified 6–8 Math: Professional Learning Catalog Index

FOUNDATION

### Teach & Learn

ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

**Teaching and Learning with IM 6–8 Math Curriculum**

DURATION/FORMAT



12 hours, onsite

PREREQUISITES

None

**Agenda:**

## Day 1:

- Problem-based lesson structure
- Assessment
- Math content routines

## Day 2:

- 5 Practices
- Math language routines
- Teaching Unit 1
- Classroom norms

**Description:** During this two-day implementation onsite event, teachers and coaches will be guided by an IM Certified facilitator to gain first-hand experience and fluency with the IM curricula.

**Participants will understand:**

- the structure of a lesson and the purpose of each component
- where to find teacher and student resources in the curriculum
- the purposes of different curriculum assessments and where to find opportunities for assessment
- how instructional supports and extensions are used throughout the curriculum
- the purpose of math content routines
- the 5 Practices framework for productive discussion and how the framework supports teachers in their planning
- the purpose of math language routines and how the routines support mathematical language development
- a process for planning to teach a lesson in Unit 1 and how the activities in a lesson are connected to the learning goal
- the importance of norms in a problem-based classroom and considerations for establishing norms in the classroom



## IM Certified 6–8 Math: Professional Learning Catalog Index

FOUNDATION

### Teach & Learn

ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

### Unit Overviews per Grade Level

DURATION/FORMAT



2 hours each (24 total, 8 per grade level), onsite or virtual

PREREQUISITES

Teaching and Learning with IM 6–8 Math Curriculum

#### Agenda:

- Overview of the unit
- Focal lesson 1
- Focal lesson 2
- Before and after the unit
- The End-of-Unit Assessment
- Collaborative planning

**Description:** Unit overviews support teachers to make effective instructional decisions such as engaging students, effective questioning, pacing, formative assessment, and differentiation, through making visible the big ideas and coherence within a unit, and how understanding the trajectory of learning goals across lesson supports effective planning.

#### Participants will understand:

- a big mathematical idea in the unit
- the lesson structure used throughout the unit
- the progression of the big mathematical idea in the unit and how the big mathematical idea connects to the End-of-Unit Assessment
- the next steps to prepare for teaching Week 1 of the unit



## IM Certified 6–8 Math: Professional Learning Catalog Index

FOUNDATION

### Teach & Learn

ATTENDEES

Coaches, School, and District Administration

NAME

### Supporting Teaching and Learning with IM 6–8 Math Curriculum

DURATION/FORMAT



6 hours, onsite

PREREQUISITES

Teaching and Learning with IM 6–8 Math Curriculum

#### Agenda:

- Curriculum-centered Professional Learning Community (PLC) modules
- Supporting teachers in Unit 1 (Using pre-assessments and cool-downs to plan instruction)
- Facilitating days 1 and 2

**Description:** This session for coaches supports participants to plan professional learning experiences for their teachers, including curriculum-focused Professional Learning Community (PLC) sessions as well as Teaching and Learning with IM 6–8 Math Curriculum. Participants also learn strategies for supporting teachers to use curriculum tools in planning for Unit 1.

#### Participants will understand:

- how to plan for a curriculum-centered PLC
- the structure and facilitation of a 5 Practices PLC and a Math Routines PLC
- how to use the Pre-Unit Diagnostic Assessment with teachers to prepare for Unit 1
- how to use cool-downs to inform the teaching and planning of Unit 1
- Where to locate the Teaching and Learning with IM 6-8 Math Curriculum materials, and how to facilitate Teaching and Learning with IM 6-8 Math Curriculum and PLCs



## IM Certified 6–8 Math: Professional Learning Catalog Index

FOUNDATION

### Teach & Learn

ATTENDEES

Coaches, School, and District Administration

NAME

### Unit Overviews for Coaches

DURATION/FORMAT



2 hours per session  
(covering all 3 grade levels), onsite or virtual

PREREQUISITES

Teaching and Learning with IM 6–8 Math Curriculum

#### Agenda:

- Experience focal lessons from several of Unit Overviews
- Plan for facilitating the Unit Overviews with teachers

**Description:** Work with the IM facilitator to review the highlights of the three grade-level overviews for the unit, and the key ideas to bring out when facilitating overviews with teachers.

This is especially valuable for districts who will not be sending their teachers through the IM Certified Unit Overviews and will be leading their teachers on their own.

#### Participants will understand:

- big mathematical ideas in each grade level for the unit
- opportunities to make connections within and across grade levels
- important points to share with teachers when facilitating the Unit Overviews in each grade level



## IM Certified 6–8 Math: Professional Learning Catalog Index

Select two of these 3 hour modules for a full 6 hour day of Professional Learning

FOUNDATION

### Teach & Learn

ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

**5 Practices: Looking at a Case Study**

DURATION/FORMAT



3 hours, onsite

PREREQUISITES

None

#### Agenda:

- Understanding the 5 Practices
- A case study
- 5 Practices in a lesson plan

**Description:** Gain an understanding of the 5 Practices for Orchestrating Mathematical Discussions, and how the curriculum embeds this planning structure in the materials to support both teacher planning and student learning.

#### Participants will understand:

- the 5 Practices framework for productive discussion
- how the framework supports teachers in their planning
- how the framework supports student understanding through discourse





## IM Certified 6–8 Math: Professional Learning Catalog Index

FOUNDATION

### Teach & Learn

ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

### Instructional Routines

DURATION/FORMAT



3 hours, onsite

PREREQUISITES

None

#### Agenda:

- Notice and Wonder
- Number Talk
- Which One Doesn't Belong
- Planning a Math Routine

**Description:** Explore the three important mathematical routines used in the IM curriculum: Notice and Wonder, Number Talk, and Which One Doesn't Belong. Plus, gain effective guidance on how these routines are used in IM.

#### Participants will understand:

- the structure and purpose of:
  - Notice and Wonder
  - Math Talk
  - Which One Doesn't Belong
- how to use the structure of an instructional routine for implementation
- how an instructional routine connects to the learning goals of the lesson



## IM Certified 6–8 Math: Professional Learning Catalog Index

FOUNDATION

### Teach & Learn

ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

### Math Language Routines 1

DURATION/FORMAT



3 hours, onsite

PREREQUISITES

None (the two math language routines sessions can be done in either order)

#### Agenda:

- Introduction
- Knowing language demands and design principles
- Engaging in three mathematical language routines
- Rehearsing one mathematical language routine
- Planning and reflecting

**Description:** Explore four mathematical language routines (MLRs) that support the learning of mathematics and English language development: Stronger and Clearer Each Time, Co-craft Questions and Problems, Collect and Display, and Three Reads.

#### Participants will understand:

- how learning mathematics is a language-demanding activity for all students
- how mathematical language routines (MLRs):
  - foster mathematical understanding
  - promote mathematical and English language use
  - provide access to the problem
  - support collaborative work
- how to use the structure of an MLR for implementation



## IM Certified 6–8 Math: Professional Learning Catalog Index

FOUNDATION

### Teach & Learn

ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

### Math Language Routines 2

DURATION/FORMAT



3 hours, onsite

PREREQUISITES

None (the two math language routines sessions can be done in either order)

#### Agenda:

- Introduction
- Knowing language demands and design principles
- Engaging in three mathematical language routines
- Rehearsing one mathematical language routine
- Planning and reflecting

**Description:** Explore four more mathematical language routines (MLRs) that support the learning of mathematics and English language development: Compare and Connect, Critique, Collect, and Clarify, Discussion Supports, and Info Gap.

#### Participants will understand:

- how learning mathematics is a language-demanding activity for all students
- how mathematical language routines (MLRs):
  - foster mathematical understanding
  - promote mathematical and English language use
  - provide access to the problem
  - support collaborative work
- how to use the structure of an MLR for implementation



## IM Certified 6–8 Math: Professional Learning Catalog Index

FOUNDATION

### Teach & Learn

ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

### Facilitated Unit and Lesson Planning

DURATION/FORMAT



3 hours, onsite

PREREQUISITES

None

#### Agenda:

- Planning a unit
- Planning a week
- Planning a lesson

**Description:** Collaborate with the IM Certified facilitator on an effective unit and lesson planning structure that focuses the learning across the unit.

#### Participants will understand:

- the importance of planning at the unit and the lesson level
- the components of the curriculum that are helpful for planning
- a process for planning a unit and a lesson that helps make visible the key mathematical ideas in order to better facilitate lessons



## IM Certified 6–8 Math: Professional Learning Catalog Index

FOUNDATION

### Teach & Learn

ATTENDEES

School and District Administration

NAME

**Curriculum Overview**

DURATION/FORMAT



3 hours, onsite

PREREQUISITES

None

**Agenda:**

- Problem-based lesson structure
- Assessment
- Math content and language routines

**Description:** Survey the IM curriculum with a focus on the philosophy and instructional shifts and the resources available in the curriculum for supporting teachers around student understanding and discourse, planning, assessment, and instructional routines.

**Participants will understand:**

- the structure of a lesson and the purpose of each component to support teacher planning and implementation
- where to find teacher, student, and family resources in the curriculum
- the purposes of different curriculum assessments to consider how the IM curriculum supports policies and practices around assessment
- where to find additional opportunities for assessment to support effective implementation
- how instructional supports and extensions are used throughout the curriculum to support effective differentiation
- the purpose of math content and math language routines in a lesson to support effective implementation, observation, collaboration, and planning



## IM Certified 6–8 Math: Professional Learning Catalog Index

FOUNDATION

### Teach & Learn

ATTENDEES

School and District Administration

NAME

### Observing a Problem-based Classroom

DURATION/FORMAT



3 hours, onsite

PREREQUISITES

Ideally, Curriculum Overview for Administrators, but not required

#### Agenda:

- What does a classroom look like where students are doing math?
- How does the curriculum support students doing math?
- How does looking for students doing math inform observations?

**Description:** Examine the philosophy of a problem-based classroom and learn how to effectively observe teachers' instruction of the IM curriculum.

#### Participants will understand:

- a process for observing a problem-based classroom
- student actions observed in a problem-based classroom
- teacher actions that impact student work in problem-based classroom
- how these actions are supported by curriculum lesson plans



## IM Certified 6–8 Math: Professional Learning Catalog Index

EXTENSION

### Teach & Respond

ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

**Teaching and Responding with IM 6–8 Math Curriculum**

DURATION/FORMAT



12 hours, onsite

PREREQUISITES

Teaching and Learning with IM 6–8 Math Curriculum

#### Agenda:

Day 1:

- 5 Practices: Looking at student work
- Using cool-downs to plan instruction

Day 2:

- Curriculum diagrams and representations
- Working in a productive PLC

**Description:** This advanced two-day onsite event brings teachers and coaches together with an IM Certified facilitator for a series of sessions in which they'll gain resources and strategies for responding to student thinking using tools from the IM curriculum.

#### Participants will understand:

- the connections between a 5 Practices activity as enacted and the supports in the curriculum lesson plan
- the purposes of Anticipate, Monitor, Select, Sequence, and Connect, and use student work to apply those practices to plan an activity
- how to address common classroom scenarios involving the 5 Practices framework
- how cool-downs formatively assess lesson learning goals and how cool-downs connect to current and upcoming lessons
- a protocol for making sense of student work on a cool-down and how to adapt instruction based on what is learned
- the progression of representations in the curriculum and the different purposes of each representation
- how representations are used to help students understand concepts, algorithms, and mathematical structure
- how to establish norms for working in a productive PLC and a process for planning a lesson and rehearsing an activity
- how to use learning goals and syntheses to support the planning and teaching of curriculum lessons
- how working in a productive PLC supports my own growth as a teacher and learner



## IM Certified 6–8 Math: Professional Learning Catalog Index

Select two of these 3 hour modules for a full 6 hour day of Professional Learning

EXTENSION

### Teach & Respond

ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

**5 Practices: Looking at Student Work**

DURATION/FORMAT



3 hours, onsite

PREREQUISITES

Teaching and Learning with IM 6–8 Math Curriculum

#### Agenda:

- Revisit the 5 Practices framework
- Plan a 5 Practices activity
- Think through classroom scenarios

**Description:** Gain a deeper understanding of the 5 Practices by selecting and sequencing student work from curriculum lessons, and discussing classroom scenarios that could arise and impact instruction.

#### Participants will understand:

- the connections between a 5 Practices activity as enacted and the supports in the curriculum lesson plan
- the purposes of Anticipate, Monitor, Select, Sequence, and Connect, and use student work to apply those practices to plan an activity
- how to address common classroom scenarios involving the 5 Practices framework



## IM Certified 6–8 Math: Professional Learning Catalog Index

EXTENSION

### Teach & Respond

ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

#### Using Cool-downs to Plan Instruction

DURATION/FORMAT



3 hours, onsite

PREREQUISITES

Teaching and Learning with IM 6–8 Math Curriculum

#### Agenda:

- Connect cool-downs to learning goals
- Look at student work from a cool-down
- Adapt instruction based on student work

**Description:** Use student cool-downs as a formative assessment for identifying how to address student misconceptions or misunderstandings in future lessons, and purposefully differentiate instruction.

#### Participants will understand:

- how cool-downs formatively assess lesson learning goals
- how cool-downs connect to current and upcoming lessons
- a protocol for making sense of student work on a cool-down
- how to adapt instruction based on what is learned about student thinking on a cool-down



## IM Certified 6–8 Math: Professional Learning Catalog Index

EXTENSION

### Teach & Respond

ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

#### Using Pre-Unit Diagnostic Assessments to Plan Instruction

DURATION/FORMAT



3 hours, onsite

PREREQUISITES

Teaching and Learning with IM 6–8 Math Curriculum

#### Agenda:

- Purpose of Pre-Unit Diagnostic Assessments
- Using Pre-Unit Diagnostic Assessments to analyze student thinking
- Using Pre-Unit Diagnostic Assessments to adapt instruction

**Description:** Discover how the Pre-Unit Diagnostic Assessment can help uncover student misconceptions or misunderstandings, and illuminate opportunities to address them in future lessons through purposefully differentiated instruction.

#### Participants will understand:

- the purpose of the Pre-Unit Diagnostic Assessment
- what we can learn about student thinking from student responses
- how we can adapt warm-ups and activity launches based on Pre-Unit Diagnostic Assessments



## IM Certified 6–8 Math: Professional Learning Catalog Index

EXTENSION

### Teach & Respond

ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

**Curriculum Diagrams and Representations**

DURATION/FORMAT



3 hours, onsite

PREREQUISITES

Teaching and Learning with IM 6–8 Math Curriculum

#### Agenda:

- Using representations to understand concepts
- Using representations to understand structure in equations
- Using representations to understand algorithms

**Description:** Understand the progression of important mathematical diagrams and representations in the curriculum, and how they help students understand concepts and algorithms.

#### Participants will understand:

- the progression of representations in the curriculum
- the different purposes of each representation
- how representations are used to help students understand concepts, algorithms, and mathematical structure



## IM Certified 6–8 Math: Professional Learning Catalog Index

EXTENSION

### Teach & Respond

ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

**Working in a Productive PLC**

DURATION/FORMAT



3 hours, onsite

PREREQUISITES

Teaching and Learning with IM 6–8 Math Curriculum

#### Agenda:

- Establish collaborative Professional Learning Community (PLC) norms
- Use PLC planning protocols
- Reflect on our teaching

**Description:** Teachers will learn to collaboratively use Professional Learning Community (PLC) protocols to plan, observe, and reflect on lessons while monitoring self-progress throughout the year. They'll learn to establish processes for working together to more productively use their PLC time for lesson planning based on their students' unique needs.

#### Participants will understand:

- how to establish norms for working in a productive PLC
- a process for planning a lesson and rehearsing an activity
- how to use learning goals and syntheses to support the planning and teaching of curriculum lessons
- how working in a productive PLC supports my own growth as a teacher and learner



## IM Certified 6–8 Math: Professional Learning Catalog Index

### Teach & Lead

#### ATTENDEES

Teachers, Coaches, School, and District Administration

#### NAME

**9 Professional Learning Community (PLC) topics, 1 day each**

#### DURATION/FORMAT



6 hours, onsite

Breakdown: 1.5 hours per grade level group (1 session per grade level, for a total of 3 per facilitator per day) + 1.5 hours for structured meetings with designated onsite contact who will do follow-up work with teachers

#### PREREQUISITES

None

**Description:** In this advanced learning series, teachers choose the topics they'd like to master. These Professional Learning Community topics can be repeated as many times as desired.

The three in bold are recommended to do first for all sites.

- 1. Landing the Lesson: Using Learning Goals for Efficient Activity and Lesson Syntheses**
- 2. Launching the Lesson so Students Start Strong**
- 3. Supporting Students While They Work**
4. Planning with the 5 Practices framework
5. Planning in response to the Pre-Unit Diagnostic Assessment
6. Using Routines for Extra Support and Extra Challenge
7. Planning in response to the End-of-Unit Assessment
8. Focus on Planning to Support English Learners
9. Focus on Planning to Support Students with Disabilities

