



# IM Certified™ Math Professional Learning Catalog



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

## IM Algebra 1, Geometry, Algebra 2

Spring 2019 IM Certified Math Professional Learning Catalog

For more information on arranging offerings from this catalog contact an

[IM Certified™ Professional Learning Partner](#)



## IM Certified Algebra 1, Geometry, and Algebra 2: Professional Learning Catalog Index

FOUNDATION

### Teach & Learn

ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

**Teaching and Learning with IM Algebra 1, Geometry, and Algebra 2 Math Curriculum**

#### Agenda:

Day 1:

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

DURATION/FORMAT



12 hours, onsite

PREREQUISITES

None

Day 2:

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

**Description:** During this two-day implementation onsite event, teachers and coaches will join an IM Certified facilitator for an overview of the IM curricula.

#### Participants will understand:

- the structure of a lesson and the purpose of each component, as well as 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 role of modeling in Unit 1 and modeling prompts in the curriculum
- the importance of norms in a problem-based classroom and considerations for establishing norms in the classroom



## IM Certified Algebra 1, Geometry, and Algebra 2: Professional Learning Catalog Index

FOUNDATION

### Teach & Learn

ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

#### Unit Overviews per Course

DURATION/FORMAT



2 hours each (23 total), onsite or virtual  
 1 per unit per course + mathematical modeling  
 overview per course

PREREQUISITES

Teaching and Learning with IM Algebra 1, Geometry,  
 and Algebra 2 Math Curriculum

#### Agenda:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• Overview of the unit</li> <li>• Focal lesson 1</li> <li>• Collaborative planning</li> </ul> | <ul style="list-style-type: none"> <li>• Before and after the unit</li> <li>• The End-of-Unit Assessment</li> </ul> |
|--|---|

**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
- next steps to prepare for teaching Week 1 of the unit



## IM Certified Algebra 1, Geometry, and Algebra 2: Professional Learning Catalog Index

FOUNDATION

### Teach & Learn

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ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

#### Math Modeling Overview: Algebra 1

**Description:** Understand what it means to model with mathematics and the role of modeling in high school. Experience one of the course level modeling prompts, and discuss the attributes of different versions of the prompt along with the next steps for using a modeling prompt with students.

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FOUNDATION

### Teach & Learn

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ATTENDEES

Teachers

NAME

#### Math Modeling Overview: Geometry

**Description:** Understand what it means to model with mathematics and the role of modeling in high school. Experience one of the course level modeling prompts, and discuss the attributes of different versions of the prompt along with the next steps for using a modeling prompt with students.

## IM Certified Algebra 1, Geometry, and Algebra 2: Professional Learning Catalog Index

DURATION/FORMAT



2 hours, onsite or virtual

PREREQUISITES

Teaching and Learning with IM Algebra 1, Geometry, and Algebra 2 Math Curriculum

DURATION/FORMAT



2 hours, onsite or virtual

PREREQUISITES

Teaching and Learning with IM Algebra 1, Geometry, and Algebra 2 Math Curriculum



## IM Certified Algebra 1, Geometry, and Algebra 2: Professional Learning Catalog Index

FOUNDATION

### Teach & Learn

ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

### Math Modeling Overview: Algebra 2

DURATION/FORMAT



2 hours, onsite or virtual

PREREQUISITES

Teaching and Learning with IM Algebra 1, Geometry, and Algebra 2 Math Curriculum

**Description:** Understand what it means to model with mathematics and the role of modeling in high school. Experience one of the course level modeling prompts, and discuss the attributes of different versions of the prompt along with the next steps for using a modeling prompt with students.



## IM Certified Algebra 1, Geometry, and Algebra 2: Professional Learning Catalog Index

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

### FOUNDATION

## Teach & Learn

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

### 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 Algebra 1, Geometry, and Algebra 2: 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
- Math Talk
- Which One Doesn't Belong?
- Info Gap
- Planning a Math Routine

**Description:** Understand the purpose and important structures of the Info Gap math language routine and three mathematical content routines used in the IM curriculum: Notice and Wonder, Math Talk, and Which One Doesn't Belong?

#### Participants will understand:

- the structure and purpose of:
  - Notice and Wonder
  - Math Talk
  - Which One Doesn't Belong?
  - Info Gap
- 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 Algebra 1, Geometry, and Algebra 2: 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 Algebra 1, Geometry, and Algebra 2: 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 Algebra 1, Geometry, and Algebra 2: 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, admin curriculum overview, 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:** Understand important student actions observed in a problem-based classroom, how these actions are supported by curriculum lesson plans, and a process for observing a curriculum lesson.

#### 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 Algebra 1, Geometry, and Algebra 2: Professional Learning Catalog Index

EXTENSION

### Teach & Respond

ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

#### Teaching and Responding with IM Algebra 1, Geometry, and Algebra 2 Math Curriculum

**Description:** Select any 2 of these three hour modules:

- 5 Practices: Looking at a Case Study
- 5 Practices: Looking at Student Work
- Instructional Routines
- Facilitated Unit and Lesson Planning
- Using Pre-Unit Diagnostic Assessment to Plan Instruction
- Using Cool-downs to Plan Instruction

DURATION/FORMAT



6 hours, onsite

PREREQUISITES

Teaching and Learning with IM Algebra 1, Geometry, and Algebra 2 Math Curriculum



## IM Certified Algebra 1, Geometry, and Algebra 2: 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

None

#### 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 Algebra 1, Geometry, and Algebra 2: 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 Algebra 1, Geometry, and Algebra 2 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 Algebra 1, Geometry, and Algebra 2: Professional Learning Catalog Index

EXTENSION

### Teach & Respond

ATTENDEES

Teachers, Coaches, School, and District Administration

NAME

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

DURATION/FORMAT



3 hours, onsite

PREREQUISITES

Teaching and Learning with IM Algebra 1, Geometry, and Algebra 2 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 Algebra 1, Geometry, and Algebra 2: 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. Adapting 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

