

SECTION SIX

Mathematics Teacher Questionnaire
Mathematics Teacher Questionnaire Tables

2018 NSSME+ Mathematics Teacher Questionnaire

Teacher Background and Opinions

1. How many years have you taught prior to this school year: [Enter each response as a whole number (for example: 15).]

a.	any subject at the K–12 level?	
b.	mathematics at the K–12 level?	
c.	at this school, any subject?	

2. At what grade levels do you currently teach mathematics? [Select all that apply.]

<input type="checkbox"/>	K–5
<input type="checkbox"/>	6–8
<input type="checkbox"/>	9–12
<input type="checkbox"/>	I do not currently teach mathematics.

3. *[Presented to self-contained teachers only]*

Which best describes the mathematics instruction provided to the entire class?

- Do not consider pull-out instruction that some students may receive for remediation or enrichment.
- Do not consider instruction provided to individual or small groups of students, for example by an English-language specialist, special educator, or teacher assistant.

<input type="radio"/>	This class receives mathematics instruction only from you. <i>[Presented only to teachers who answered in Q2 that they teach mathematics]</i>
<input type="radio"/>	This class receives mathematics instruction from you and other teachers (for example: a mathematics specialist or a teacher you team with). <i>[Presented only to teachers who answered in Q2 that they teach mathematics]</i>
<input type="radio"/>	This class receives mathematics instruction only from another teacher (for example: a mathematics specialist or a teacher you team with). <i>[Presented only to teachers who answered in Q2 that they do not currently teach mathematics]</i> [Teacher ineligible, exit survey]
<input type="radio"/>	This class does not receive mathematics instruction this year. <i>[Presented only to teachers who answered in Q2 that they do not currently teach mathematics]</i> [Teacher ineligible, exit survey]

4. Omitted – Used only for survey routing.

5. *[Presented to self-contained teachers only]*

Which best describes your mathematics teaching?

<input type="radio"/>	I teach mathematics all or most days, every week of the year.
<input type="radio"/>	I teach mathematics every week, but typically three or fewer days each week.
<input type="radio"/>	I teach mathematics some weeks, but typically not every week.

6. *[Presented to self-contained teachers only]*
Which best describes your science teaching?

<input type="radio"/>	I teach science all or most days, every week of the year.
<input type="radio"/>	I teach science every week, but typically three or fewer days each week.
<input type="radio"/>	I teach science some weeks, but typically not every week. <i>[Skip to Q8]</i>
<input type="radio"/>	I do not teach science.

7. *[Presented to self-contained teachers only]*
In a typical week, how many days do you teach lessons on each of the following subjects and how many minutes per week are spent on each subject? [Enter each response as a whole number (for example: 5, 150).]

	NUMBER OF DAYS PER WEEK	TOTAL NUMBER OF MINUTES PER WEEK
a. Mathematics		
b. Science		
c. Social Studies		
d. Reading/Language Arts		

8. *[Presented to self-contained teachers who skipped Q7 only]*
In a typical year, how many weeks do you teach lessons on each of the following subjects and how many minutes per week are spent on each subject? [Enter each response as a whole number (for example: 36, 150).]

	NUMBER OF WEEKS PER YEAR	AVERAGE NUMBER OF MINUTES PER WEEK WHEN TAUGHT
a. Mathematics		
b. Science		
c. Social Studies		
d. Reading/Language Arts		

9. *[Presented to non-self-contained teachers only]*
In a typical week, how many different mathematics classes (sections) are you currently teaching?

- If you meet with the *same class of students* multiple times per week, count that class only once.
- If you teach the *same mathematics course* to multiple classes of students, count each class separately.

1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. *[Presented to non-self-contained teachers only]*

For each mathematics class you currently teach, select the course type and enter the number of students enrolled. Enter the classes in the order that you teach them. For teachers on an alternating day block schedule, please order your classes starting with the first class you teach this week. Select one course type on each row and enter the number of students as a whole number (for example: 25).]

GRADES 9–12 COURSE TYPE	EXAMPLE COURSES
Non-college prep mathematics courses	Developmental Math; High School Arithmetic; Remedial Math; General Math; Vocational Math; Consumer Math; Basic Math; Business Math; Career Math; Practical Math; Essential Math; Pre-Algebra; Introductory Algebra; Algebra 1 Part 1; Algebra 1A; Math A; Basic Geometry; Informal Geometry; Practical Geometry
Formal/College prep mathematics level 1 courses	Algebra 1; Math 1; Integrated/Unified Math I; Algebra 1 Part 2; Algebra 1B; Math B
Formal/College prep mathematics level 2 courses	Geometry; Plane Geometry; Solid Geometry; Math 2; Integrated/Unified Math II; Math C
Formal/College prep mathematics level 3 courses	Algebra 2; Intermediate Algebra; Algebra and Trigonometry; Advanced Algebra; Math 3; Integrated/Unified Math III
Formal/College prep mathematics level 4 courses	Algebra 3; Trigonometry; Pre-Calculus; Analytic/Advanced Geometry; Elementary Functions; Integrated Math 4; Unified Math IV; Calculus (not including college level/AP); any other college prep senior math with Algebra 2/Math 3 as a prerequisite
Mathematics courses that might qualify for college credit	Advanced Placement Calculus (AB, BC); Advanced Placement Statistics; IB Mathematics Standard Level; IB Mathematics Higher Level; concurrent college and high school credit/dual enrollment

CLASS	COURSE TYPE	NUMBER OF STUDENTS ENROLLED
Your 1 st mathematics class:		
Your 2 nd mathematics class:		
...		
Your 10 th mathematics class:		

COURSE TYPE LIST	
1	Mathematics (Grades K-5)
2	Remedial Mathematics 6
3	Regular Mathematics 6
4	Accelerated/Pre-Algebra Mathematics 6
5	Remedial Mathematics 7
6	Regular Mathematics 7
7	Accelerated Mathematics 7
8	Remedial Mathematics 8
9	Regular Mathematics 8
10	Accelerated Mathematics 8
11	Algebra 1, Grade 7 or 8
12	Non-college prep mathematics course (Grades 9-12)
13	Formal/College prep mathematics level 1 course (Grades 9-12)
14	Formal/College prep mathematics level 2 course (Grades 9-12)
15	Formal/College prep mathematics level 3 course (Grades 9-12)
16	Formal/College prep mathematics level 4 course (Grades 9-12)
17	Mathematics course that might qualify for college credit (Grades 9-12)

11. *[Presented to non-self-contained teachers only]*

Later in this questionnaire, we will ask you questions about your $[[x^{th}]]$ mathematics class, which you indicated was *[[type indicated in Q10]]*. What is your school's title for this course? _____

12. Have you been awarded one or more bachelor's and/or graduate degrees in the following fields? (With regard to bachelor's degrees, count only areas in which you majored. Do not include endorsements or certificates.) [Select one on each row.]

	YES	NO
a. Education (general or subject specific such as mathematics education)	<input type="radio"/>	<input type="radio"/>
b. Mathematics	<input type="radio"/>	<input type="radio"/>
c. Statistics	<input type="radio"/>	<input type="radio"/>
d. Computer Science	<input type="radio"/>	<input type="radio"/>
e. Engineering	<input type="radio"/>	<input type="radio"/>
f. Other, please specify. _____	<input type="radio"/>	<input type="radio"/>

13. *[Presented only to teachers that selected "Yes" for Q12a]*

What type of education degree do you have? (With regard to bachelor's degrees, count only areas in which you majored.) [Select all that apply.]

<input type="checkbox"/>	Elementary Education
<input type="checkbox"/>	Mathematics Education
<input type="checkbox"/>	Science Education
<input type="checkbox"/>	Other education, please specify. _____

14. Did you complete any of the following mathematics courses at the undergraduate or graduate level? [Select one on each row.]

	YES	NO
a. Mathematics content for elementary school teachers	<input type="radio"/>	<input type="radio"/>
b. Mathematics content for middle school teachers	<input type="radio"/>	<input type="radio"/>
c. Mathematics content for high school teachers	<input type="radio"/>	<input type="radio"/>
d. Integrated mathematics (a single course that addresses content across multiple mathematics subjects, such as algebra and geometry)	<input type="radio"/>	<input type="radio"/>
e. College algebra/trigonometry/functions	<input type="radio"/>	<input type="radio"/>
f. Abstract algebra (for example: groups, rings, ideals, fields) <i>[Presented to grades 6–12 teachers only]</i>	<input type="radio"/>	<input type="radio"/>
g. Linear algebra (for example: vectors, matrices, eigenvalues) <i>[Presented to grades 6–12 teachers only]</i>	<input type="radio"/>	<input type="radio"/>
h. Calculus	<input type="radio"/>	<input type="radio"/>
i. Advanced calculus <i>[Presented to grades 6–12 teachers only]</i>	<input type="radio"/>	<input type="radio"/>
j. Real analysis <i>[Presented to grades 6–12 teachers only]</i>	<input type="radio"/>	<input type="radio"/>
k. Differential equations <i>[Presented to grades 6–12 teachers only]</i>	<input type="radio"/>	<input type="radio"/>
l. Analytic/Coordinate Geometry (for example: transformations or isometries, conic sections) <i>[Presented to grades 6–12 teachers only]</i>	<input type="radio"/>	<input type="radio"/>
m. Axiomatic Geometry (Euclidean or non-Euclidean) <i>[Presented to grades 6–12 teachers only]</i>	<input type="radio"/>	<input type="radio"/>
n. College geometry <i>[Presented to grades K–5 teachers only]</i>	<input type="radio"/>	<input type="radio"/>
o. Probability	<input type="radio"/>	<input type="radio"/>
p. Statistics	<input type="radio"/>	<input type="radio"/>
q. Number theory (for example: divisibility theorems, properties of prime numbers) <i>[Presented to grades 6–12 teachers only]</i>	<input type="radio"/>	<input type="radio"/>
r. Discrete mathematics (for example: combinatorics, graph theory, game theory)	<input type="radio"/>	<input type="radio"/>
s. Other upper division mathematics	<input type="radio"/>	<input type="radio"/>

15. Did you complete one or more courses in each of the following areas at the undergraduate or graduate level? [Select one on each row.]

	YES	NO
a. Computer science	<input type="radio"/>	<input type="radio"/>
b. Engineering	<input type="radio"/>	<input type="radio"/>

16. Which of the following best describes the program you completed to earn your teaching credential (sometimes called certification or license)?

<input type="radio"/>	An undergraduate program leading to a bachelor's degree and a teaching credential
<input type="radio"/>	A post-baccalaureate credentialing program (no master's degree awarded)
<input type="radio"/>	A master's program that also led to a teaching credential
<input type="radio"/>	I have not completed a program to earn a teaching credential.

17. After completing your undergraduate degree and prior to becoming a teacher, did you have a full-time job in a mathematics-related field (for example: accounting, engineering, computer programming)?

<input type="radio"/>	Yes
<input type="radio"/>	No

Professional Development

The questions in this section ask about your participation in professional development focused on mathematics or mathematics teaching. When answering these questions, please include:

- face-to-face and/or online courses;
- professional meetings/conferences;
- workshops;
- professional learning communities/lesson studies/teacher study groups; and
- coaching and mentoring.

Do not include:

- courses you took prior to becoming a teacher; and
- time spent providing professional development (including coaching and mentoring) for other teachers.

18. When did you **last participate** in professional development focused on mathematics or mathematics teaching?

<input type="radio"/>	In the last 12 months
<input type="radio"/>	1–3 years ago
<input type="radio"/>	4–6 years ago
<input type="radio"/>	7–10 years ago
<input type="radio"/>	More than 10 years ago
<input type="radio"/>	Never

} Skip to Q23

19. **In the last 3 years**, which of the following types of professional development related to mathematics or mathematics teaching have you had? [Select one on each row.]

	YES	NO
a. I attended a professional development program/workshop.	<input type="radio"/>	<input type="radio"/>
b. I attended a national, state, or regional mathematics teacher association meeting.	<input type="radio"/>	<input type="radio"/>
c. I completed an online course/webinar.	<input type="radio"/>	<input type="radio"/>
d. I participated in a professional learning community/lesson study/teacher study group.	<input type="radio"/>	<input type="radio"/>
e. I received assistance or feedback from a formally designated coach/mentor.	<input type="radio"/>	<input type="radio"/>
f. I took a formal course for college credit.	<input type="radio"/>	<input type="radio"/>

20. What is the **total** amount of time you have spent on professional development related to mathematics or mathematics teaching **in the last 3 years**?

<input type="radio"/>	Less than 6 hours
<input type="radio"/>	6–15 hours
<input type="radio"/>	16–35 hours
<input type="radio"/>	36–80 hours
<input type="radio"/>	More than 80 hours

21. Considering all of your mathematics-related professional development **in the last 3 years**, to what extent does each of the following describe your experiences? [Select one on each row.]

	NOT AT ALL		SOMEWHAT		TO A GREAT EXTENT
a. I had opportunities to engage in mathematics investigations.	①	②	③	④	⑤
b. I had opportunities to experience lessons, as my students would, from the textbook/units I use in my classroom.	①	②	③	④	⑤
c. I had opportunities to examine classroom artifacts (for example: student work samples, videos of classroom instruction).	①	②	③	④	⑤
d. I had opportunities to rehearse instructional practices during the professional development (meaning: try out, receive feedback, and reflect on those practices).	①	②	③	④	⑤
e. I had opportunities to apply what I learned to my classroom and then come back and talk about it as part of the professional development.	①	②	③	④	⑤
f. I worked closely with other teachers from my school.	①	②	③	④	⑤
g. I worked closely with other teachers who taught the same grade and/or subject whether or not they were from my school.	①	②	③	④	⑤

22. Thinking about all of your mathematics-related professional development **in the last 3 years**, to what extent was each of the following emphasized? [Select one on each row.]

	NOT AT ALL		SOMEWHAT		TO A GREAT EXTENT
a. Deepening your own mathematics content knowledge	①	②	③	④	⑤
b. Deepening your understanding of how mathematics is done (for example: considering how to approach a problem, explaining and justifying solutions, creating and using mathematical models)	①	②	③	④	⑤
c. Implementing the mathematics textbook to be used in your classroom	①	②	③	④	⑤
d. Learning how to use hands-on activities/manipulatives for mathematics instruction	①	②	③	④	⑤
e. Learning about difficulties that students may have with particular mathematical ideas and procedures	①	②	③	④	⑤
f. Finding out what students think or already know prior to instruction on a topic	①	②	③	④	⑤
g. Monitoring student understanding during mathematics instruction	①	②	③	④	⑤
h. Differentiating mathematics instruction to meet the needs of diverse learners	①	②	③	④	⑤
i. Incorporating students' cultural backgrounds into mathematics instruction	①	②	③	④	⑤
j. Learning how to provide mathematics instruction that integrates engineering, science, and/or computer science	①	②	③	④	⑤

Preparedness to Teach Mathematics

23. *[Presented to self-contained teachers only]*

Many teachers feel better prepared to teach some subject areas than others. How well prepared do you feel to teach each of the following subjects **at the grade level(s) you teach**, whether or not they are currently included in your teaching responsibilities? [Select one on each row.]

	NOT ADEQUATELY PREPARED	SOMEWHAT PREPARED	FAIRLY WELL PREPARED	VERY WELL PREPARED
a. Number and Operations	①	②	③	④
b. Early Algebra	①	②	③	④
c. Geometry	①	②	③	④
d. Measurement and Data Representation	①	②	③	④
e. Science	①	②	③	④
f. Computer science/Programming	①	②	③	④
g. Reading/Language Arts	①	②	③	④
h. Social Studies	①	②	③	④

24. *[Presented to non-self-contained teachers only]*

Within mathematics, many teachers feel better prepared to teach some topics than others. How prepared do you feel to teach each of the following topics **at the grade level(s) you teach**, whether or not they are currently included in your teaching responsibilities? [Select one on each row.]

	NOT ADEQUATELY PREPARED	SOMEWHAT PREPARED	FAIRLY WELL PREPARED	VERY WELL PREPARED
a. The number system and operations	①	②	③	④
b. Algebraic thinking	①	②	③	④
c. Functions	①	②	③	④
d. Modeling	①	②	③	④
e. Measurement	①	②	③	④
f. Geometry	①	②	③	④
g. Statistics and probability	①	②	③	④
h. Discrete mathematics	①	②	③	④
i. Computer science/Programming	①	②	③	④

25. How well prepared do you feel to do each of the following in your mathematics instruction?
 [Select one on each row.]

	NOT ADEQUATELY PREPARED	SOMEWHAT PREPARED	FAIRLY WELL PREPARED	VERY WELL PREPARED
a. Develop students' conceptual understanding of the mathematical ideas you teach	①	②	③	④
b. Develop students' abilities to do mathematics (for example: consider how to approach a problem, explain and justify solutions, create and use mathematical models)	①	②	③	④
c. Develop students' awareness of STEM careers	①	②	③	④
d. Provide mathematics instruction that is based on students' ideas (whether completely correct or not) about the topics you teach	①	②	③	④
e. Use formative assessment to monitor student learning	①	②	③	④
f. Differentiate mathematics instruction to meet the needs of diverse learners	①	②	③	④
g. Incorporate students' cultural backgrounds into mathematics instruction	①	②	③	④
h. Encourage students' interest in mathematics	①	②	③	④
i. Encourage participation of all students in mathematics	①	②	③	④

Opinions about Mathematics Instruction

26. Please provide your opinion about each of the following statements. [Select one on each row.]

	STRONGLY DISAGREE	DISAGREE	NO OPINION	AGREE	STRONGLY AGREE
a. Students learn mathematics best in classes with students of similar abilities.	①	②	③	④	⑤
b. It is better for mathematics instruction to focus on ideas in depth, even if that means covering fewer topics.	①	②	③	④	⑤
c. At the beginning of instruction on a mathematical idea, students should be provided with definitions for new mathematics vocabulary that will be used.	①	②	③	④	⑤
d. Teachers should explain an idea to students before having them investigate the idea.	①	②	③	④	⑤
e. Most class periods should provide opportunities for students to share their thinking and reasoning.	①	②	③	④	⑤
f. Hands-on activities/manipulatives should be used primarily to reinforce a mathematical idea that the students have already learned.	①	②	③	④	⑤
g. Teachers should ask students to justify their mathematical thinking.	①	②	③	④	⑤
h. Students learn best when instruction is connected to their everyday lives.	①	②	③	④	⑤
i. Most class periods should provide opportunities for students to apply mathematical ideas to real-world contexts.	①	②	③	④	⑤
j. Students should learn mathematics by doing mathematics (for example: considering how to approach a problem, explaining and justifying solutions, creating and using mathematical models).	①	②	③	④	⑤

Leadership Experiences

27. In the last 3 years have you... [Select one on each row.]

	YES	NO
a. Served as a lead teacher or department chair in mathematics?	<input type="radio"/>	<input type="radio"/>
b. Served as a formal mentor or coach for a mathematics teacher? (Do not include supervision of student teachers.)	<input type="radio"/>	<input type="radio"/>
c. Supervised a student teacher in your classroom?	<input type="radio"/>	<input type="radio"/>
d. Served on a school or district/diocese-wide mathematics committee (for example: developing curriculum, developing pacing guides, selecting instructional materials)?	<input type="radio"/>	<input type="radio"/>
e. Led or co-led a workshop or professional learning community (for example: teacher study group, lesson study) for other teachers focused on mathematics or mathematics teaching?	<input type="radio"/>	<input type="radio"/>
f. Taught a mathematics lesson for other teachers in your school to observe?	<input type="radio"/>	<input type="radio"/>
g. Observed another teacher's mathematics lesson for the purpose of giving him/her feedback?	<input type="radio"/>	<input type="radio"/>

Your Mathematics Instruction

The rest of this questionnaire is about your $[[x^{th}]]$ mathematics class, which you indicated was *[[type indicated in Q10]]* and is titled *[[title provided in Q11]]*. *[Instructions presented to non-self-contained teachers only]*

The rest of this questionnaire is about your mathematics instruction in this class. *[Instructions presented to self-contained teachers only]*

28. *[Presented to non-self-contained teachers only]*

On average, how many minutes per week does this class meet? [Enter your response as a whole number (for example: 300).] _____

29. Enter the number of students for each grade represented in this class. [Enter each response as a whole number (for example: 15).]

Kindergarten	
1 st grade	
2 nd grade	
3 rd grade	
4 th grade	
5 th grade	
6 th grade	
7 th grade	
8 th grade	
9 th grade	
10 th grade	
11 th grade	
12 th grade	

30. For the *[[sum of Q29]]* students in this class, indicate the number of males and females in each of the following categories of race/ethnicity. [Enter each response as a whole number (for example: 15).]

	MALES	FEMALES
a. American Indian or Alaskan Native		
b. Asian		
c. Black or African American		
d. Hispanic or Latino		
e. Native Hawaiian or Other Pacific Islander		
f. White		
g. Two or more races		

31. Which of the following best describes the prior mathematics achievement levels of the students in this class relative to other students in this school?

<input type="radio"/>	Mostly low achievers
<input type="radio"/>	Mostly average achievers
<input type="radio"/>	Mostly high achievers
<input type="radio"/>	A mixture of levels

32. How much control do you have over each of the following for mathematics instruction in this class? [Select one on each row.]

	NO CONTROL		MODERATE CONTROL		STRONG CONTROL
a. Determining course goals and objectives	①	②	③	④	⑤
b. Selecting curriculum materials (for example: textbooks)	①	②	③	④	⑤
c. Selecting content, topics, and skills to be taught	①	②	③	④	⑤
d. Selecting the sequence in which topics are covered	①	②	③	④	⑤
e. Determining the amount of instructional time to spend on each topic	①	②	③	④	⑤
f. Selecting teaching techniques	①	②	③	④	⑤
g. Determining the amount of homework to be assigned	①	②	③	④	⑤
h. Choosing criteria for grading student performance	①	②	③	④	⑤

33. Think about your plans for this class for the entire course/year. By the end of the course/year, how much emphasis will each of the following student objectives receive? [Select one on each row.]

	NONE	MINIMAL EMPHASIS	MODERATE EMPHASIS	HEAVY EMPHASIS
a. Learning mathematics vocabulary	①	②	③	④
b. Learning mathematical procedures and/or algorithms	①	②	③	④
c. Learning to perform computations with speed and accuracy	①	②	③	④
d. Understanding mathematical ideas	①	②	③	④
e. Learning how to do mathematics (for example: consider how to approach a problem, explain and justify solutions, create and use mathematical models)	①	②	③	④
f. Learning about real-life applications of mathematics	①	②	③	④
g. Increasing students' interest in mathematics	①	②	③	④
h. Developing students' confidence that they can successfully pursue careers in mathematics	①	②	③	④
i. Learning test-taking skills/strategies	①	②	③	④

34. How often do **you** do each of the following in your mathematics instruction in this class?
 [Select one on each row.]

	NEVER	RARELY (FOR EXAMPLE: A FEW TIMES A YEAR)	SOMETIMES (FOR EXAMPLE: ONCE OR TWICE A MONTH)	OFTEN (FOR EXAMPLE: ONCE OR TWICE A WEEK)	ALL OR ALMOST ALL MATHEMATICS LESSONS
a. Explain mathematical ideas to the whole class	①	②	③	④	⑤
b. Engage the whole class in discussions	①	②	③	④	⑤
c. Have students work in small groups	①	②	③	④	⑤
d. Provide manipulatives for students to use in problem-solving/investigations	①	②	③	④	⑤
e. Use flipped instruction (have students watch lectures/demonstrations outside of class to prepare for in-class activities)	①	②	③	④	⑤
f. Have students read from a textbook or other material in class, either aloud or to themselves	①	②	③	④	⑤
g. Have students write their reflections (for example: in their journals, on exit tickets) in class or for homework	①	②	③	④	⑤
h. Focus on literacy skills (for example: informational reading or writing strategies)	①	②	③	④	⑤
i. Have students practice for standardized tests	①	②	③	④	⑤

35. How often do you have **students** do each of the following during mathematics instruction in this class? [Select one on each row.]

	NEVER	RARELY (FOR EXAMPLE: A FEW TIMES A YEAR)	SOMETIMES (FOR EXAMPLE: ONCE OR TWICE A MONTH)	OFTEN (FOR EXAMPLE: ONCE OR TWICE A WEEK)	ALL OR ALMOST ALL MATHEMATICS LESSONS
a. Work on challenging problems that require thinking beyond just applying rules, algorithms, or procedures	①	②	③	④	⑤
b. Figure out what a challenging problem is asking (by talking with their classmates and/or using manipulatives, pictures, diagrams, tables, or equations)	①	②	③	④	⑤
c. Reflect on their solution strategies as they work through a mathematics problem and revise as needed	①	②	③	④	⑤
d. Continue working through a mathematics problem when they reach points of difficulty, challenge, or error	①	②	③	④	⑤
e. Determine whether their answer makes sense (for example: the answer has reasonable magnitude or sign, uses appropriate units, fits the context of the problem)	①	②	③	④	⑤
f. Represent aspects of a problem using mathematical symbols, pictures, diagrams, tables, or objects in order to solve it	①	②	③	④	⑤
g. Provide mathematical reasoning to explain, justify, or prove their thinking	①	②	③	④	⑤
h. Compare and contrast different solution strategies for a mathematics problem in terms of their strengths and limitations (for example: their efficiency, generalizability, interpretability by others)	①	②	③	④	⑤
i. Analyze the mathematical reasoning of others (for example: decide if their reasoning makes sense, identify correct ideas or flaws in their thinking)	①	②	③	④	⑤
j. Pose questions to clarify, challenge, or improve the mathematical reasoning of others	①	②	③	④	⑤

k. Identify relevant information and relationships that could be used to solve a mathematics problem (for example: quantities and relationships needed to develop an equation that illustrates a situation or determines an outcome)	①	②	③	④	⑤
l. Develop a mathematical model (meaning, a representation of relevant information and relationships such as an equation, tape diagram, algorithm, or function) to solve a mathematics problem	①	②	③	④	⑤
m. Determine what tools (for example: pencil and paper, manipulatives, ruler, protractor, calculator, spreadsheet) are appropriate for solving a mathematics problem	①	②	③	④	⑤
n. Determine what units are appropriate for expressing numerical answers, data, and/or measurements	①	②	③	④	⑤
o. Discuss how certain terms or phrases may have specific meanings in mathematics that are different from their meaning in everyday language	①	②	③	④	⑤
p. Identify patterns or characteristics of numbers, diagrams, or graphs that may be helpful in solving a mathematics problem	①	②	③	④	⑤
q. Work on generating a rule or formula (for example: based on multiple problems, patterns, or repeated calculations)	①	②	③	④	⑤

36. Thinking about your instruction in this class over the entire year, about how often do you have students use coding to develop or revise computer programs as part of your mathematics instruction (for example: use Scratch or Python as part of doing mathematics)?

<input type="radio"/>	Never
<input type="radio"/>	Rarely (for example: A few times per year)
<input type="radio"/>	Sometimes (for example: Once or twice a month)
<input type="radio"/>	Often (for example: Once or twice a week)
<input type="radio"/>	All or almost all mathematics lessons

37. In a typical week, how much time outside of this class are students expected to spend on mathematics assignments?

<input type="radio"/>	None
<input type="radio"/>	1–15 minutes per week
<input type="radio"/>	16–30 minutes per week
<input type="radio"/>	31–60 minutes per week
<input type="radio"/>	61–90 minutes per week
<input type="radio"/>	91–120 minutes per week
<input type="radio"/>	More than 2 hours per week

38. How often are students in this class required to take mathematics tests that you did not choose to administer, for example state assessments or district benchmarks? Do not include Advanced Placement or International Baccalaureate exams or students retaking a test because of failure.

<input type="radio"/>	Never
<input type="radio"/>	Once a year
<input type="radio"/>	Twice a year
<input type="radio"/>	Three or four times a year
<input type="radio"/>	Five or more times a year

39. Please indicate the availability of projection devices (for example: Smartboard, document camera, LCD projector) for your mathematics instruction in this class.

<input type="radio"/>	Always available in your classroom
<input type="radio"/>	Available upon request
<input type="radio"/>	Not available

40. Mathematics courses may benefit from the availability of particular resources. Considering what you have available, how adequate is each of the following for teaching this mathematics class? [Select one on each row.]

	NOT ADEQUATE		SOMEWHAT ADEQUATE		ADEQUATE
a. Instructional technology (for example: calculators, computers, probes/sensors)	①	②	③	④	⑤
b. Measurement tools (for example: protractors, rulers)	①	②	③	④	⑤
c. Manipulatives (for example: pattern blocks, algebra tiles)	①	②	③	④	⑤
d. Consumable supplies (for example: graphing paper, batteries)	①	②	③	④	⑤

This item asks about different types of instructional materials; please read the entire list of materials before answering

41. Thinking about your instruction in this class over the entire year, about how often is instruction based on materials from each of the following sources? [Select one on each row.]

	NEVER	RARELY (FOR EXAMPLE: A FEW TIMES A YEAR)	SOMETIMES (FOR EXAMPLE: ONCE OR TWICE A MONTH)	OFTEN (FOR EXAMPLE: ONCE OR TWICE A WEEK)	ALL OR ALMOST ALL MATHEMATICS LESSONS
a. Commercially published textbooks (printed or electronic), including the supplementary materials (for example: worksheets) that accompany the textbooks	①	②	③	④	⑤
b. State, county, or district/diocese-developed units or lessons	①	②	③	④	⑤
c. Online units or courses that students work through at their own pace (for example: i-Ready, Edgenuity)	①	②	③	④	⑤
d. Lessons or resources from websites that have a subscription fee or per lesson cost (for example: BrainPOP, Discovery Ed, Teachers Pay Teachers)	①	②	③	④	⑤
e. Lessons or resources from websites that are free (for example: Khan Academy, Illustrative Math)	①	②	③	④	⑤
f. Units or lessons you created (either by yourself or with others)	①	②	③	④	⑤
g. Units or lessons you collected from any other source (for example: conferences, journals, colleagues, university or museum partners)	①	②	③	④	⑤

42. Does your school/district/diocese designate instructional materials (textbooks, units, or lessons) to be used in this class?

- Yes
- No [\[Skip to Q44\]](#)

43. Which of the following types of instructional materials does your school/district/diocese designate to be used in this class? [Select all that apply.]

- Commercially published textbooks (printed or electronic), including the supplementary materials (for example: worksheets) that accompany the textbooks
- State, county, or district/diocese-developed instructional materials
- Online units or courses that students work through at their own pace (for example: i-Ready, Edgenuity)
- Lessons or resources from websites that have a subscription fee or per lesson cost (for example: BrainPOP, Discovery Ed, Teachers Pay Teachers)
- Lessons or resources from websites that are free (for example: Khan Academy, Illustrative Math)

44. Omitted – Used only for survey routing.

45. *[Presented only to teachers who selected "Sometimes" "Often" or "All" for Q41a or c]*
[Version for teachers who indicate using a commercial textbook most often] Please indicate the title, author, most recent copyright year, and ISBN code of the commercially published textbook (printed or electronic) used most often by the students in this class.

- The 10- or 13-character ISBN code can be found on the copyright page and/or the back cover of the textbook.
- Do not include the dashes when entering the ISBN.

Example ISBN:



[Version for teachers who indicate using an online course most often] Please indicate the title and URL of the online units or courses used most often by the students in this class.

Title:	
First Author: <i>[for teachers who indicate using a commercial textbook most often]</i>	
Year: <i>[for teachers who indicate using a commercial textbook most often]</i>	
ISBN: <i>[for teachers who indicate using a commercial textbook most often]</i>	
URL: <i>[for teachers who indicate using an online program most often]</i>	

46. Please rate how each of the following affects your mathematics instruction in this class.
[Select one on each row.]

	INHIBITS EFFECTIVE INSTRUCTION		NEUTRAL OR MIXED		PROMOTES EFFECTIVE INSTRUCTION	N/A
a. Current state standards	①	②	③	④	⑤	<input type="radio"/>
b. District/Diocese and/or school pacing guides	①	②	③	④	⑤	<input type="radio"/>
c. State/district/diocese testing/accountability policies <i>[Not presented to non-Catholic private schools]</i>	①	②	③	④	⑤	<input type="radio"/>
d. Textbook selection policies	①	②	③	④	⑤	<input type="radio"/>
e. Teacher evaluation policies	①	②	③	④	⑤	<input type="radio"/>
f. College entrance requirements <i>[Presented to grades 9–12 teachers only]</i>	①	②	③	④	⑤	<input type="radio"/>
g. Students' prior knowledge and skills	①	②	③	④	⑤	<input type="radio"/>
h. Students' motivation, interest, and effort in mathematics	①	②	③	④	⑤	<input type="radio"/>
i. Parent/guardian expectations and involvement	①	②	③	④	⑤	<input type="radio"/>
j. Principal support	①	②	③	④	⑤	<input type="radio"/>
k. Amount of time for you to plan, individually and with colleagues	①	②	③	④	⑤	<input type="radio"/>
l. Amount of time available for your professional development	①	②	③	④	⑤	<input type="radio"/>
m. Amount of instructional time devoted to mathematics <i>[Presented to grades K–5 teachers only]</i>	①	②	③	④	⑤	<input type="radio"/>

Your Most Recently Completed Mathematics Unit in this Class

The questions in this section are about the most recently completed mathematics unit in this class which you indicated is *[type indicated in Q10]* and is titled *[title provided in Q11]*.

- Depending on the structure of your class and the instructional materials you use, a unit may range from a few to many class periods.
- Do not be concerned if this unit was not typical of your instruction.

47. Which one of the following best describes the content focus of this unit?

<input type="radio"/>	Number and operations
<input type="radio"/>	Measurement and data representation
<input type="radio"/>	Algebra
<input type="radio"/>	Geometry
<input type="radio"/>	Probability
<input type="radio"/>	Statistics
<input type="radio"/>	Trigonometry
<input type="radio"/>	Calculus

48. *[Presented only to teachers who selected “Sometimes” “Often” or “All” for Q41 a or b]*
 Was this unit based primarily on a commercially published textbook or state, county, or district/diocese-developed materials?

<input type="radio"/>	Yes
<input type="radio"/>	No <i>[Skip to Q53]</i>

This next set of items is about the textbook or state, county, or district/diocese-developed lessons you used in this unit.

49. Please indicate the extent to which you did each of the following while teaching this unit.
 [Select one on each row.]

	NOT AT ALL		SOMEWHAT		TO A GREAT EXTENT
a. I used these materials to guide the structure and content emphasis of the unit.	①	②	③	④	⑤
b. I picked what is important from these materials and skipped the rest.	①	②	③	④	⑤
c. I incorporated activities (for example: problems, investigations, readings) from other sources to supplement what these materials were lacking.	①	②	③	④	⑤
d. I modified activities from these materials.	①	②	③	④	⑤

50. *[Presented only to teachers who did not select “Not at all” for Q49b]*
 During this unit, when you skipped activities (for example: problems, investigations, readings) in these materials, how much was each of the following a factor in your decisions?
 [Select one on each row.]

	NOT A FACTOR	A MINOR FACTOR	A MAJOR FACTOR
a. The mathematical ideas addressed in the activities I skipped are not included in my pacing guide/standards.	①	②	③
b. I did not have the materials needed to implement the activities I skipped.	①	②	③
c. I did not have the knowledge needed to implement the activities I skipped.	①	②	③
d. The activities I skipped were too difficult for my students.	①	②	③
e. My students already knew the mathematical ideas or were able to learn them without the activities I skipped.	①	②	③
f. I have different activities for those mathematical ideas that work better than the ones I skipped.	①	②	③
g. I did not have enough instructional time for the activities I skipped.	①	②	③

51. *[Presented only to teachers who did not select “Not at all” for Q49c]*

During this unit, when you supplemented these materials with additional activities, how much was each of the following a factor in your decisions? [Select one on each row.]

	NOT A FACTOR	A MINOR FACTOR	A MAJOR FACTOR
a. My pacing guide indicated that I should use supplemental activities.	①	②	③
b. Supplemental activities were needed to prepare students for standardized tests.	①	②	③
c. Supplemental activities were needed to provide students with additional practice.	①	②	③
d. Supplemental activities were needed so students at different levels of achievement could increase their understanding of the ideas targeted in each activity.	①	②	③
e. I had additional activities that I liked.	①	②	③

52. *[Presented only to teachers who did not select “Not at all” in Q49d]*

During this unit, when you modified activities from these materials, how much was each of the following a factor in your decisions? [Select one on each row.]

	NOT A FACTOR	A MINOR FACTOR	A MAJOR FACTOR
a. I did not have the necessary materials/supplies for the original activities.	①	②	③
b. The original activities were too difficult conceptually for my students.	①	②	③
c. The original activities were too easy conceptually for my students.	①	②	③
d. I did not have enough instructional time to implement the activities as designed.	①	②	③
e. The original activities were too structured for my students.	①	②	③
f. The original activities were not structured enough for my students.	①	②	③

53. How well prepared did you feel to do each of the following as part of your instruction on this particular unit? [Select one on each row.]

	NOT ADEQUATELY PREPARED	SOMEWHAT PREPARED	FAIRLY WELL PREPARED	VERY WELL PREPARED
a. Anticipate difficulties that students may have with particular mathematical ideas and procedures in this unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Find out what students thought or already knew about the key mathematical ideas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Implement the instructional materials (for example: mathematics textbook) to be used during this unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Monitor student understanding during this unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Assess student understanding at the conclusion of this unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Your Most Recent Mathematics Lesson in this Class

The next three questions refer to the most recent mathematics lesson in this class, which you indicated is *[type indicated in Q10]* and is titled *[title provided in Q11]*, even if it included activities and/or interruptions that are not typical (for example: a test, students working on projects, a fire drill). If the lesson spanned multiple days, please answer for the most recent day.

54. How many minutes was that day's mathematics lesson? Answer for the entire length of the class period, even if there were interruptions. [Enter your response as a non-zero whole number (for example: 50).] _____

55. Of these *[answer to Q54]* minutes, how many were spent on the following: [Enter each response as a whole number (for example: 15).]

a.	Non-instructional activities (for example: attendance taking, interruptions)	
b.	Whole class activities (for example: lectures, explanations, discussions)	
c.	Small group work	
d.	Students working individually (for example: reading textbooks, completing worksheets, taking a test or quiz)	

56. Which of the following activities took place during that day's mathematics lesson? [Select all that apply.]

<input type="checkbox"/>	Teacher explaining a mathematical idea to the whole class
<input type="checkbox"/>	Teacher conducting a demonstration while students watched
<input type="checkbox"/>	Whole class discussion
<input type="checkbox"/>	Students working in small groups
<input type="checkbox"/>	Students completing textbook/worksheet problems
<input type="checkbox"/>	Students doing hands-on/manipulative activities
<input type="checkbox"/>	Students reading about mathematics
<input type="checkbox"/>	Students writing about mathematics (do not include students taking notes)
<input type="checkbox"/>	Practicing for standardized tests
<input type="checkbox"/>	Test or quiz
<input type="checkbox"/>	None of the above

Demographic Information

57. Are you:

<input type="radio"/>	Female
<input type="radio"/>	Male
<input type="radio"/>	Other

58. Are you of Hispanic or Latino origin?

<input type="radio"/>	Yes
<input type="radio"/>	No

59. What is your race? [Select all that apply.]

<input type="checkbox"/>	American Indian or Alaskan Native
<input type="checkbox"/>	Asian
<input type="checkbox"/>	Black or African American
<input type="checkbox"/>	Native Hawaiian or Other Pacific Islander
<input type="checkbox"/>	White

60. In what year were you born? [Enter your response as a whole number (for example: 1969).]

Thank you!

Mathematics Teacher Questionnaire Tables

Table MTQ 1
Number of Years Mathematics Teachers Spent Teaching Prior to This School Year, by Grade Range

	MEAN NUMBER OF YEARS		
	ELEMENTARY	MIDDLE	HIGH
Any subject at the K–12 level	13 (0.4)	12 (0.4)	13 (0.3)
Mathematics at the K–12 level	12 (0.4)	10 (0.4)	13 (0.3)
At this school, any subject	8 (0.3)	7 (0.3)	8 (0.2)

Table MTQ 2
Grade Levels Taught by Mathematics Teachers

	PERCENT OF TEACHERS
Grades K–5	77 (1.0)
Grades 6–8	14 (0.8)
Grades 9–12	12 (0.6)

Table MTQ 3
Instructional Arrangements for Mathematics in Self-Contained Elementary School Classes

	PERCENT OF TEACHERS
This class receives mathematics instruction only from you.	80 (2.0)
This class receives mathematics instruction from you and other teachers (e.g., a mathematics specialist or a teacher you team with).	20 (2.0)

There is no table for MTQ 4.

Table MTQ 5
Frequency With Which Self-Contained Elementary School Teachers Provide Mathematics Instruction

	PERCENT OF TEACHERS
I teach mathematics all or most days, every week of the year.	99 (0.2)
I teach mathematics every week, but typically three or fewer days each week.	1 (0.2)
I teach mathematics some weeks, but typically not every week.	0 (0.1)

Table MTQ 6
Frequency With Which Self-Contained
Elementary School Teachers Provide Science Instruction

	PERCENT OF TEACHERS
I teach science all or most days, every week of the year.	23 (2.1)
I teach science every week, but typically three or fewer days each week.	33 (2.0)
I teach science some weeks, but typically not every week.	37 (2.2)
I do not teach science.	6 (0.9)

Table MTQ 7 and 8
Average Number of Minutes Per Day Spent Teaching
Each Subject in Self-Contained Elementary School Classes[†]

	AVERAGE NUMBER OF MINUTES
Mathematics	60 (1.2)
Science	19 (0.7)
Social Studies	16 (0.5)
Reading/Language Arts	85 (1.9)

[†] Includes only self-contained elementary teachers who indicated they teach reading/language arts, mathematics, science, and social studies to one class of students.

Table MTQ 9
Number of Sections of Mathematics
Classes Taught Per Week, by Grade Range

	PERCENT OF TEACHERS [†]		
	ELEMENTARY	MIDDLE	HIGH
1 Section	10 (4.3)	4 (0.9)	5 (0.9)
2 Sections	52 (6.5)	14 (1.8)	10 (1.3)
3 Sections	27 (5.5)	20 (1.9)	19 (1.4)
4 Sections	7 (2.4)	23 (2.0)	13 (1.3)
5 Sections	1 (0.6)	23 (2.0)	28 (1.7)
6 Sections	1 (0.6)	13 (1.5)	21 (1.3)
7 Sections	0 ---‡	1 (0.4)	4 (0.6)
8 Sections	0 (0.2)	0 (0.1)	0 (0.1)
9 Sections	0 ---‡	0 (0.2)	0 ---‡
10 Sections	2 (1.5)	0 (0.2)	0 (0.1)

[†] Includes only teachers of non-self-contained classes.

[‡] No mathematics teachers at this grade range in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

There is no table for MTQ 10.

There is no table for MTQ 11.

Table MTQ 12
Subjects of Mathematics Teachers' Degrees, by Grade Range

	PERCENT OF TEACHERS		
	ELEMENTARY	MIDDLE	HIGH
Education (general or subject specific such as mathematics education)	93 (1.2)	82 (1.6)	73 (1.6)
Mathematics	1 (0.4)	26 (2.0)	55 (1.6)
Statistics	0 ---†	1 (0.7)	1 (0.2)
Computer Science	1 (0.3)	3 (0.9)	3 (0.5)
Engineering	0 (0.0)	2 (0.5)	6 (0.8)
Other Subject	36 (2.2)	38 (2.4)	30 (1.5)

† No elementary school mathematics teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

Table MTQ 13
Mathematics Teachers With Education Degrees, by Grade Range

	PERCENT OF TEACHERS†		
	ELEMENTARY	MIDDLE	HIGH
Elementary Education	88 (1.5)	44 (3.1)	5 (1.2)
Mathematics Education	2 (0.7)	28 (2.4)	53 (2.0)
Science Education	1 (0.5)	4 (1.5)	3 (0.9)
Other Education	20 (1.9)	31 (2.5)	22 (1.9)

† Teachers indicating in Q12 that they do not have an education degree are treated as not having a degree in these areas.

Table MTQ 14
Mathematics College Courses
Completed by Mathematics Teachers, by Grade Range

	PERCENT OF TEACHERS		
	ELEMENTARY	MIDDLE	HIGH
Mathematics content for elementary school teachers	92 (1.1)	58 (2.2)	17 (1.4)
Mathematics content for middle school teachers	17 (1.6)	62 (2.6)	46 (1.8)
Mathematics content for high school teachers	1 (0.4)	27 (2.0)	69 (1.9)
Integrated mathematics (a single course that addresses content across multiple mathematics subjects, such as algebra and geometry)	34 (1.6)	50 (2.5)	47 (1.8)
College algebra/trigonometry/functions	49 (2.1)	72 (2.1)	73 (1.4)
Abstract algebra (e.g., groups, rings, ideals, fields) †	n/a	31 (1.7)	73 (1.5)
Linear algebra (e.g., vectors, matrices, eigenvalues) †	n/a	42 (2.0)	84 (1.5)
Calculus	18 (1.4)	65 (2.3)	92 (1.4)
Advanced calculus†	n/a	47 (2.0)	85 (1.4)
Real analysis‡	n/a	19 (1.7)	49 (1.6)
Differential equations†	n/a	36 (1.9)	68 (1.6)
Analytic/Coordinate Geometry (e.g., transformations or isometries, conic sections)†	n/a	33 (2.0)	66 (1.8)
Axiomatic Geometry (Euclidean or non-Euclidean) †	n/a	24 (1.9)	59 (1.9)
College geometry‡	32 (2.1)	n/a	n/a
Probability	25 (1.6)	52 (2.5)	75 (1.3)
Statistics	47 (1.9)	74 (1.9)	89 (1.1)
Number theory (e.g., divisibility theorems, properties of prime numbers) †	n/a	41 (2.4)	58 (1.7)
Discrete mathematics (e.g., combinatorics, graph theory, game theory)	6 (0.8)	31 (2.4)	61 (1.6)
Other upper division mathematics	14 (1.3)	28 (2.2)	58 (1.9)

† This item was presented only to middle and/or high school teachers.

‡ This item was presented only to elementary school teachers.

Table MTQ 15
Mathematics Teachers Having Completed One or More
College Courses in Computer Science or Engineering, by Grade Range

	PERCENT OF TEACHERS		
	ELEMENTARY	MIDDLE	HIGH
Computer science	27 (1.7)	42 (2.2)	62 (1.7)
Engineering	2 (0.5)	9 (1.1)	18 (1.3)

Table MTQ 16
Mathematics Teachers' Paths to Certification, by Grade Range

	PERCENT OF TEACHERS		
	ELEMENTARY	MIDDLE	HIGH
An undergraduate program leading to a bachelor's degree and a teaching credential	65 (2.2)	61 (2.6)	57 (2.3)
A post-baccalaureate credentialing program (no master's degree awarded)	10 (1.5)	14 (1.9)	16 (1.2)
A master's program that also led to a teaching credential	23 (2.1)	20 (1.6)	21 (1.6)
I have not completed a program to earn a teaching credential.	2 (0.6)	4 (1.1)	7 (1.5)

Table MTQ 17
Mathematics Teachers With Full-Time Job Experience in a Mathematics-Related Field Prior to Teaching

	PERCENT OF TEACHERS
Elementary	7 (1.1)
Middle	12 (1.4)
High	19 (1.4)

Table MTQ 18
Mathematics Teachers' Most Recent Participation in Mathematics-Focused[†] Professional Development, by Grade Range

	PERCENT OF TEACHERS		
	ELEMENTARY	MIDDLE	HIGH
In the last 12 months	59 (2.1)	71 (2.5)	68 (1.7)
1–3 years ago	24 (2.0)	19 (2.0)	21 (1.8)
4–6 years ago	7 (1.1)	5 (1.1)	5 (0.9)
7–10 years ago	1 (0.4)	2 (0.6)	1 (0.3)
More than 10 years ago	2 (0.5)	1 (0.3)	2 (0.7)
Never	5 (1.0)	4 (0.8)	3 (0.5)

Table MTQ 19
Mathematics Teachers Participating in Various Mathematics-Focused Professional Development Activities in the Last Three Years, by Grade Range

	PERCENT OF TEACHERS†		
	ELEMENTARY	MIDDLE	HIGH
I attended a professional development program/workshop.	94 (1.1)	93 (1.4)	91 (1.4)
I attended a national, state, or regional mathematics teacher association meeting.	13 (1.7)	26 (2.4)	34 (2.4)
I completed an online course/webinar.	19 (1.5)	35 (2.9)	32 (2.0)
I participated in a professional learning community/lesson study/teacher study group.	53 (2.6)	68 (3.1)	64 (2.1)
I received assistance or feedback from a formally designated coach/mentor.	47 (2.4)	56 (3.2)	44 (2.4)
I took a formal course for college credit.	5 (1.1)	15 (2.1)	19 (1.7)

† Includes only teachers indicating in Q18 that they participated in mathematics-focused professional development in the last three years.

Table MTQ 20
Time Spent by Mathematics Teachers on Mathematics-Focused Professional Development in the Last Three Years, by Grade Range

	PERCENT OF TEACHERS†		
	ELEMENTARY	MIDDLE	HIGH
Less than 6 hours	21 (1.6)	9 (1.8)	8 (1.0)
6–15 hours	37 (2.0)	22 (2.5)	22 (1.6)
16–35 hours	26 (1.9)	27 (1.9)	25 (1.3)
36–80 hours	12 (1.3)	25 (2.0)	27 (1.7)
More than 80 hours	4 (0.7)	16 (1.3)	18 (1.4)

† Includes only teachers indicating in Q18 that they participated in mathematics-focused professional development in the last three years.

Table MTQ 21.1
Elementary School Mathematics Teachers' Descriptions of
Mathematics-Focused Professional Development in the Last Three Years

	PERCENT OF TEACHERS [†]				
	NOT AT ALL		SOMEWHAT		TO A GREAT EXTENT
	1	2	3	4	5
I had opportunities to engage in mathematics investigations.	10 (1.5)	9 (1.4)	35 (2.5)	34 (2.5)	13 (2.0)
I had opportunities to experience lessons, as my students would, from the textbook/units I use in my classroom.	13 (1.6)	12 (1.5)	27 (2.4)	32 (2.3)	16 (1.8)
I had opportunities to examine classroom artifacts (e.g., student work samples, videos of classroom instruction).	11 (1.5)	14 (1.9)	28 (2.2)	31 (2.4)	14 (2.1)
I had opportunities to rehearse instructional practices during the professional development (i.e., try out, receive feedback, and reflect on those practices).	22 (2.1)	18 (1.6)	25 (2.1)	26 (1.9)	9 (1.5)
I had opportunities to apply what I learned to my classroom and then come back and talk about it as part of the professional development.	17 (1.9)	14 (1.9)	25 (2.4)	29 (2.0)	15 (2.0)
I worked closely with other teachers from my school.	5 (1.0)	7 (1.3)	19 (2.0)	32 (2.1)	36 (2.6)
I worked closely with other teachers who taught the same grade and/or subject whether or not they were from my school.	9 (1.4)	13 (1.5)	21 (1.8)	33 (2.2)	23 (2.3)

[†] Includes only elementary school mathematics teachers indicating in Q18 that they participated in mathematics-focused professional development in the last three years.

Table MTQ 21.2
Middle School Mathematics Teachers' Descriptions of
Mathematics-Focused Professional Development in the Last Three Years

	PERCENT OF TEACHERS [†]				
	NOT AT ALL		SOMEWHAT		TO A GREAT EXTENT
	1	2	3	4	5
I had opportunities to engage in mathematics investigations.	13 (2.9)	5 (0.7)	35 (3.0)	32 (2.4)	15 (1.5)
I had opportunities to experience lessons, as my students would, from the textbook/units I use in my classroom.	16 (2.4)	12 (1.6)	27 (2.9)	31 (3.5)	14 (1.7)
I had opportunities to examine classroom artifacts (e.g., student work samples, videos of classroom instruction).	7 (1.4)	12 (1.9)	32 (2.9)	32 (3.3)	16 (2.3)
I had opportunities to rehearse instructional practices during the professional development (i.e., try out, receive feedback, and reflect on those practices).	21 (2.8)	19 (2.2)	26 (2.5)	25 (3.0)	9 (1.5)
I had opportunities to apply what I learned to my classroom and then come back and talk about it as part of the professional development.	16 (2.6)	13 (1.9)	25 (2.7)	31 (3.2)	15 (1.6)
I worked closely with other teachers from my school.	3 (1.4)	7 (1.6)	18 (2.4)	29 (3.3)	43 (3.1)
I worked closely with other teachers who taught the same grade and/or subject whether or not they were from my school.	8 (2.1)	10 (2.1)	23 (2.4)	28 (3.1)	31 (2.7)

[†] Includes only middle school mathematics teachers indicating in Q18 that they participated in mathematics-focused professional development in the last three years.

Table MTQ 21.3
High School Mathematics Teachers' Descriptions of
Mathematics-Focused Professional Development in the Last Three Years

	PERCENT OF TEACHERS [†]				
	NOT AT ALL		SOMEWHAT		TO A GREAT EXTENT
	1	2	3	4	5
I had opportunities to engage in mathematics investigations.	9 (0.8)	8 (1.4)	40 (2.2)	26 (1.8)	17 (1.3)
I had opportunities to experience lessons, as my students would, from the textbook/units I use in my classroom.	19 (1.9)	13 (1.4)	26 (2.0)	26 (2.1)	16 (1.7)
I had opportunities to examine classroom artifacts (e.g., student work samples, videos of classroom instruction).	10 (1.1)	16 (1.6)	31 (1.9)	29 (2.0)	15 (1.6)
I had opportunities to rehearse instructional practices during the professional development (i.e., try out, receive feedback, and reflect on those practices).	23 (1.7)	21 (1.7)	25 (1.9)	20 (2.1)	11 (1.5)
I had opportunities to apply what I learned to my classroom and then come back and talk about it as part of the professional development.	15 (1.4)	16 (1.5)	24 (1.5)	28 (2.2)	18 (1.5)
I worked closely with other teachers from my school.	6 (0.9)	8 (1.2)	19 (1.7)	27 (1.7)	40 (2.4)
I worked closely with other teachers who taught the same grade and/or subject whether or not they were from my school.	7 (1.0)	11 (1.2)	25 (1.4)	30 (2.0)	28 (1.5)

[†] Includes only high school mathematics teachers indicating in Q18 that they participated in mathematics-focused professional development in the last three years.

Table MTQ 22.1
Elementary School Mathematics Teachers' Perceptions of Topics
Emphasized During Professional Development in the Last Three Years

	PERCENT OF TEACHERS [†]				
	NOT AT ALL		SOMEWHAT		TO A GREAT EXTENT
	1	2	3	4	5
Deepening your own mathematics content knowledge	7 (1.1)	12 (1.5)	30 (2.2)	30 (2.3)	21 (1.8)
Deepening your understanding of how mathematics is done (e.g., considering how to approach a problem, explaining and justifying solutions, creating and using mathematical models)	3 (1.0)	9 (1.4)	30 (2.1)	38 (2.5)	20 (1.8)
Implementing the mathematics textbook to be used in your classroom	23 (1.9)	14 (1.5)	23 (2.2)	24 (2.2)	16 (1.8)
Learning how to use hands-on activities/manipulatives for mathematics instruction	5 (1.3)	11 (1.5)	24 (2.2)	34 (2.2)	25 (1.8)
Learning about difficulties that students may have with particular mathematical ideas and procedures	6 (1.2)	19 (2.1)	27 (2.3)	34 (2.2)	13 (1.5)
Finding out what students think or already know prior to instruction on a topic	8 (1.4)	17 (1.9)	29 (2.0)	33 (2.4)	13 (1.7)
Monitoring student understanding during mathematics instruction	5 (1.2)	9 (1.6)	30 (1.9)	36 (2.3)	20 (1.8)
Differentiating mathematics instruction to meet the needs of diverse learners	4 (1.0)	11 (1.5)	30 (2.5)	34 (2.4)	22 (2.3)
Incorporating students' cultural backgrounds into mathematics instruction	31 (2.4)	22 (2.1)	28 (2.4)	14 (1.5)	6 (1.4)
Learning how to provide mathematics instruction that integrates engineering, science, and/or computer science	28 (2.3)	25 (2.1)	25 (2.1)	15 (2.0)	7 (1.1)

[†] Includes only elementary school mathematics teachers indicating in Q18 that they participated in mathematics-focused professional development in the last three years.

Table MTQ 22.2
Middle School Mathematics Teachers' Perceptions of Topics
Emphasized During Professional Development in the Last Three Years

	PERCENT OF TEACHERS [†]				
	NOT AT ALL		SOMEWHAT		TO A GREAT EXTENT
	1	2	3	4	5
Deepening your own mathematics content knowledge	9 (1.6)	13 (1.4)	35 (3.4)	27 (3.0)	17 (1.9)
Deepening your understanding of how mathematics is done (e.g., considering how to approach a problem, explaining and justifying solutions, creating and using mathematical models)	4 (1.0)	12 (1.6)	29 (3.0)	37 (3.4)	19 (2.4)
Implementing the mathematics textbook to be used in your classroom	25 (2.9)	17 (2.4)	19 (2.6)	23 (2.8)	16 (2.0)
Learning how to use hands-on activities/manipulatives for mathematics instruction	7 (1.5)	13 (1.7)	35 (3.3)	31 (3.1)	14 (1.6)
Learning about difficulties that students may have with particular mathematical ideas and procedures	7 (1.6)	12 (1.8)	30 (2.7)	37 (2.9)	14 (1.9)
Finding out what students think or already know prior to instruction on a topic	12 (2.0)	14 (2.0)	35 (3.0)	28 (3.1)	11 (1.6)
Monitoring student understanding during mathematics instruction	8 (1.7)	13 (1.8)	24 (2.1)	37 (3.1)	18 (2.4)
Differentiating mathematics instruction to meet the needs of diverse learners	6 (1.3)	9 (1.1)	30 (2.7)	37 (3.3)	18 (2.4)
Incorporating students' cultural backgrounds into mathematics instruction	25 (2.8)	25 (2.5)	30 (2.7)	14 (2.9)	5 (1.0)
Learning how to provide mathematics instruction that integrates engineering, science, and/or computer science	30 (2.9)	25 (2.2)	26 (2.5)	14 (2.8)	6 (1.4)

[†] Includes only middle school mathematics teachers indicating in Q18 that they participated in mathematics-focused professional development in the last three years.

Table MTQ 22.3
High School Mathematics Teachers' Perceptions of Topics
Emphasized During Professional Development in the Last Three Years

	PERCENT OF TEACHERS [†]				
	NOT AT ALL		SOMEWHAT		TO A GREAT EXTENT
	1	2	3	4	5
Deepening your own mathematics content knowledge	14 (1.5)	17 (1.7)	30 (2.3)	24 (2.0)	15 (1.4)
Deepening your understanding of how mathematics is done (e.g., considering how to approach a problem, explaining and justifying solutions, creating and using mathematical models)	7 (1.2)	12 (1.1)	32 (2.4)	32 (2.0)	17 (1.5)
Implementing the mathematics textbook to be used in your classroom	34 (2.3)	19 (1.6)	22 (2.1)	17 (2.1)	8 (0.9)
Learning how to use hands-on activities/manipulatives for mathematics instruction	10 (1.5)	16 (1.5)	34 (2.1)	26 (1.6)	13 (1.8)
Learning about difficulties that students may have with particular mathematical ideas and procedures	7 (1.0)	15 (1.5)	32 (1.8)	34 (2.2)	11 (1.5)
Finding out what students think or already know prior to instruction on a topic	9 (1.1)	20 (1.4)	33 (2.0)	28 (2.1)	10 (1.4)
Monitoring student understanding during mathematics instruction	8 (1.0)	13 (1.0)	27 (1.7)	36 (2.3)	17 (1.4)
Differentiating mathematics instruction to meet the needs of diverse learners	4 (0.7)	12 (1.3)	31 (1.7)	35 (1.9)	18 (1.9)
Incorporating students' cultural backgrounds into mathematics instruction	25 (1.6)	22 (1.6)	27 (2.3)	17 (1.5)	8 (1.8)
Learning how to provide mathematics instruction that integrates engineering, science, and/or computer science	28 (1.9)	22 (1.3)	29 (2.2)	14 (1.2)	8 (1.7)

[†] Includes only high school mathematics teachers indicating in Q18 that they participated in mathematics-focused professional development in the last three years.

Table MTQ 23
**Self-Contained Elementary School Mathematics Teachers’
 Perceptions of Their Preparedness to Teach Various Subjects**

	PERCENT OF TEACHERS†			
	NOT ADEQUATELY PREPARED	SOMEWHAT PREPARED	FAIRLY WELL PREPARED	VERY WELL PREPARED
Number and Operations	0 (0.1)	2 (0.5)	23 (1.7)	74 (1.7)
Early Algebra	6 (0.9)	17 (1.2)	36 (2.1)	41 (1.9)
Geometry	4 (0.7)	12 (1.3)	35 (1.8)	49 (2.2)
Measurement and Data Representation	3 (0.5)	8 (1.1)	37 (1.8)	53 (1.8)
Science	4 (0.8)	23 (1.8)	42 (1.9)	31 (1.9)
Computer science/Programming	47 (2.4)	34 (2.0)	13 (1.3)	6 (0.9)
Reading/Language Arts	1 (0.2)	3 (0.8)	22 (1.6)	75 (1.9)
Social Studies	3 (0.7)	17 (1.3)	36 (1.7)	44 (1.6)

† Includes only self-contained elementary school teachers who indicated they teach reading/language arts, mathematics, science, and social studies to one class of students.

Table MTQ 24.1
**Non-Self-Contained Elementary School Mathematics
 Teachers’ Perceptions of Their Preparedness to Teach Various Topics**

	PERCENT OF TEACHERS			
	NOT ADEQUATELY PREPARED	SOMEWHAT PREPARED	FAIRLY WELL PREPARED	VERY WELL PREPARED
The number system and operations	0 ---†	1 (1.4)	16 (3.8)	83 (3.5)
Algebraic thinking	0 ---†	6 (3.3)	35 (4.6)	59 (4.9)
Functions	12 (4.0)	27 (5.3)	32 (5.1)	28 (4.8)
Modeling	0 ---†	9 (2.8)	22 (4.4)	68 (5.5)
Measurement	0 ---†	2 (1.5)	39 (5.4)	59 (5.6)
Geometry	0 ---†	3 (1.4)	30 (5.8)	67 (5.9)
Statistics and probability	11 (3.4)	34 (5.7)	33 (4.3)	22 (4.8)
Discrete mathematics	26 (4.5)	36 (5.4)	29 (5.5)	9 (3.7)
Computer science/Programming	48 (4.9)	33 (5.1)	10 (4.0)	8 (3.1)

† No non-self-contained elementary mathematics teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

Table MTQ 24.2
Middle School Mathematics Teachers'
Perceptions of Their Preparedness to Teach Various Topics

	PERCENT OF TEACHERS			
	NOT ADEQUATELY PREPARED	SOMEWHAT PREPARED	FAIRLY WELL PREPARED	VERY WELL PREPARED
The number system and operations	0 ---†	2 (0.9)	13 (1.2)	85 (1.4)
Algebraic thinking	0 ---†	3 (1.1)	18 (1.5)	78 (1.7)
Functions	3 (0.6)	12 (1.4)	28 (1.9)	57 (2.0)
Modeling	2 (0.4)	13 (1.6)	39 (2.4)	46 (2.4)
Measurement	1 (0.2)	8 (1.3)	31 (1.8)	61 (2.0)
Geometry	2 (0.7)	7 (1.1)	32 (2.1)	59 (2.3)
Statistics and probability	3 (1.0)	17 (1.7)	41 (2.5)	40 (2.4)
Discrete mathematics	28 (2.0)	34 (2.2)	25 (1.8)	12 (1.4)
Computer science/Programming	59 (2.3)	26 (2.2)	11 (1.5)	4 (0.7)

† No middle school mathematics teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

Table MTQ 24.3
High School Mathematics Teachers'
Perceptions of Their Preparedness to Teach Various Topics

	PERCENT OF TEACHERS			
	NOT ADEQUATELY PREPARED	SOMEWHAT PREPARED	FAIRLY WELL PREPARED	VERY WELL PREPARED
The number system and operations	0 (0.1)	1 (0.4)	9 (0.9)	89 (0.9)
Algebraic thinking	0 (0.1)	2 (0.4)	9 (0.7)	89 (0.9)
Functions	0 (0.1)	3 (0.8)	12 (1.4)	84 (1.4)
Modeling	1 (0.2)	10 (0.9)	31 (1.7)	59 (1.8)
Measurement	1 (0.2)	5 (0.6)	21 (1.3)	74 (1.3)
Geometry	1 (0.3)	11 (0.9)	22 (1.2)	65 (1.4)
Statistics and probability	7 (0.8)	25 (1.3)	37 (1.6)	31 (1.7)
Discrete mathematics	17 (1.2)	30 (1.5)	32 (1.7)	21 (1.3)
Computer science/Programming	56 (1.6)	29 (1.6)	10 (1.0)	5 (0.8)

Table MTQ 25.1
Elementary School Mathematics Teachers'
Perceptions of Their Preparedness for Each of a Number of Tasks

	PERCENT OF TEACHERS			
	NOT ADEQUATELY PREPARED	SOMEWHAT PREPARED	FAIRLY WELL PREPARED	VERY WELL PREPARED
Develop students' conceptual understanding of the mathematical ideas you teach	0 (0.2)	8 (0.9)	46 (1.6)	46 (1.6)
Develop students' abilities to do mathematics (e.g., consider how to approach a problem, explain and justify solutions, create and use mathematical models)	0 (0.2)	8 (1.1)	46 (1.7)	46 (1.7)
Develop students' awareness of STEM careers	23 (1.4)	42 (1.7)	27 (1.7)	8 (1.0)
Provide mathematics instruction that is based on students' ideas (whether completely correct or not) about the topics you teach	9 (1.2)	29 (1.8)	42 (2.0)	19 (1.6)
Use formative assessment to monitor student learning	1 (0.3)	8 (1.1)	38 (1.6)	53 (1.7)
Differentiate mathematics instruction to meet the needs of diverse learners	1 (0.4)	14 (1.6)	44 (1.8)	41 (1.9)
Incorporate students' cultural backgrounds into mathematics instruction	19 (1.4)	33 (1.9)	33 (1.8)	15 (1.5)
Encourage students' interest in mathematics	2 (0.5)	12 (1.4)	44 (2.0)	42 (1.9)
Encourage participation of all students in mathematics	0 (0.2)	6 (1.0)	38 (1.7)	56 (1.6)

Table MTQ 25.2
Middle School Mathematics Teachers'
Perceptions of Their Preparedness for Each of a Number of Tasks

	PERCENT OF TEACHERS			
	NOT ADEQUATELY PREPARED	SOMEWHAT PREPARED	FAIRLY WELL PREPARED	VERY WELL PREPARED
Develop students' conceptual understanding of the mathematical ideas you teach	0 (0.2)	7 (1.3)	44 (2.2)	49 (2.2)
Develop students' abilities to do mathematics (e.g., consider how to approach a problem, explain and justify solutions, create and use mathematical models)	0 †	7 (1.3)	39 (2.0)	55 (2.1)
Develop students' awareness of STEM careers	19 (1.8)	42 (2.3)	29 (2.1)	10 (0.9)
Provide mathematics instruction that is based on students' ideas (whether completely correct or not) about the topics you teach	5 (0.9)	29 (2.1)	43 (2.1)	23 (1.7)
Use formative assessment to monitor student learning	0 (0.1)	8 (1.4)	34 (2.4)	57 (2.2)
Differentiate mathematics instruction to meet the needs of diverse learners	1 (0.5)	18 (2.0)	45 (2.6)	36 (2.2)
Incorporate students' cultural backgrounds into mathematics instruction	13 (1.3)	43 (2.3)	31 (1.9)	13 (1.1)
Encourage students' interest in mathematics	1 (0.4)	18 (2.3)	44 (2.2)	37 (2.0)
Encourage participation of all students in mathematics	0 (0.2)	11 (1.6)	40 (2.1)	49 (2.1)

† No middle school mathematics teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

Table MTQ 25.3
High School Mathematics Teachers'
Perceptions of Their Preparedness for Each of a Number of Tasks

	PERCENT OF TEACHERS			
	NOT ADEQUATELY PREPARED	SOMEWHAT PREPARED	FAIRLY WELL PREPARED	VERY WELL PREPARED
Develop students' conceptual understanding of the mathematical ideas you teach	0 (0.1)	7 (1.5)	32 (1.3)	61 (1.8)
Develop students' abilities to do mathematics (e.g., consider how to approach a problem, explain and justify solutions, create and use mathematical models)	0 (0.2)	5 (1.0)	28 (1.8)	66 (2.0)
Develop students' awareness of STEM careers	13 (1.1)	39 (1.6)	33 (1.7)	15 (1.1)
Provide mathematics instruction that is based on students' ideas (whether completely correct or not) about the topics you teach	6 (0.6)	26 (1.4)	42 (1.7)	26 (1.5)
Use formative assessment to monitor student learning	1 (0.2)	6 (0.8)	36 (1.6)	57 (1.6)
Differentiate mathematics instruction to meet the needs of diverse learners	3 (0.7)	17 (1.1)	47 (1.4)	33 (1.6)
Incorporate students' cultural backgrounds into mathematics instruction	17 (1.0)	37 (1.4)	29 (1.4)	17 (1.3)
Encourage students' interest in mathematics	1 (0.3)	13 (1.1)	48 (1.6)	38 (1.5)
Encourage participation of all students in mathematics	1 (0.2)	9 (1.1)	43 (1.8)	46 (1.8)

Table MTQ 26.1
Elementary School Mathematics
Teachers' Opinions About Teaching and Learning

	PERCENT OF TEACHERS				
	STRONGLY DISAGREE	DISAGREE	NO OPINION	AGREE	STRONGLY AGREE
Students learn mathematics best in classes with students of similar abilities.	4 (0.8)	35 (2.0)	13 (1.7)	39 (2.1)	9 (1.4)
It is better for mathematics instruction to focus on ideas in depth, even if that means covering fewer topics.	1 (0.4)	10 (1.4)	12 (1.4)	52 (2.3)	25 (1.9)
At the beginning of instruction on a mathematical idea, students should be provided with definitions for new mathematics vocabulary that will be used.	1 (0.5)	9 (1.2)	8 (1.2)	50 (2.3)	32 (2.0)
Teachers should explain an idea to students before having them investigate the idea.	4 (0.8)	40 (2.0)	22 (1.8)	26 (1.9)	9 (1.3)
Most class periods should provide opportunities for students to share their thinking and reasoning.	1 (0.4)	1 (0.5)	2 (0.6)	40 (2.3)	55 (2.3)
Hands-on activities/manipulatives should be used primarily to reinforce a mathematical idea that the students have already learned.	7 (1.2)	33 (2.1)	7 (1.1)	25 (1.8)	28 (2.2)
Teachers should ask students to justify their mathematical thinking.	1 (0.4)	1 (0.5)	1 (0.4)	37 (2.2)	60 (2.1)
Students learn best when instruction is connected to their everyday lives.	1 (0.4)	1 (0.2)	2 (0.5)	40 (2.1)	57 (2.1)
Most class periods should provide opportunities for students to apply mathematical ideas to real-world contexts.	0 †	2 (0.6)	5 (1.0)	46 (2.2)	47 (2.2)
Students should learn mathematics by doing mathematics (e.g., considering how to approach a problem, explaining and justifying solutions, creating and using mathematical models).	0 (0.3)	1 (0.3)	2 (0.6)	43 (2.2)	54 (2.2)

† No elementary school mathematics teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

Table MTQ 26.2
Middle School Mathematics
Teachers' Opinions About Teaching and Learning

	PERCENT OF TEACHERS				
	STRONGLY DISAGREE	DISAGREE	NO OPINION	AGREE	STRONGLY AGREE
Students learn mathematics best in classes with students of similar abilities.	1 (0.7)	23 (2.3)	9 (1.3)	45 (2.8)	22 (2.5)
It is better for mathematics instruction to focus on ideas in depth, even if that means covering fewer topics.	0 ---†	5 (1.0)	6 (1.0)	54 (2.6)	35 (2.4)
At the beginning of instruction on a mathematical idea, students should be provided with definitions for new mathematics vocabulary that will be used.	0 (0.2)	11 (2.0)	11 (1.8)	48 (2.9)	30 (2.3)
Teachers should explain an idea to students before having them investigate the idea.	6 (0.9)	45 (3.1)	19 (1.9)	23 (2.8)	8 (1.6)
Most class periods should provide opportunities for students to share their thinking and reasoning.	0 ---†	1 (0.4)	3 (0.6)	50 (2.8)	46 (2.8)
Hands-on activities/manipulatives should be used primarily to reinforce a mathematical idea that the students have already learned.	5 (1.4)	33 (2.5)	19 (2.6)	31 (2.5)	12 (1.6)
Teachers should ask students to justify their mathematical thinking.	0 ---†	0 (0.2)	1 (0.3)	36 (2.8)	63 (2.9)
Students learn best when instruction is connected to their everyday lives.	0 ---†	1 (0.4)	6 (1.8)	42 (2.6)	50 (2.8)
Most class periods should provide opportunities for students to apply mathematical ideas to real-world contexts.	0 (0.2)	1 (0.4)	6 (1.0)	52 (2.8)	40 (2.7)
Students should learn mathematics by doing mathematics (e.g., considering how to approach a problem, explaining and justifying solutions, creating and using mathematical models).	0 ---†	1 (0.3)	2 (0.6)	39 (2.6)	58 (2.6)

† No middle school mathematics teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

Table MTQ 26.3
High School Mathematics
Teachers' Opinions About Teaching and Learning

	PERCENT OF TEACHERS				
	STRONGLY DISAGREE	DISAGREE	NO OPINION	AGREE	STRONGLY AGREE
Students learn mathematics best in classes with students of similar abilities.	1 (0.4)	20 (1.8)	8 (1.0)	49 (2.0)	22 (1.7)
It is better for mathematics instruction to focus on ideas in depth, even if that means covering fewer topics.	0 (0.1)	7 (1.5)	9 (1.2)	54 (1.9)	29 (1.6)
At the beginning of instruction on a mathematical idea, students should be provided with definitions for new mathematics vocabulary that will be used.	1 (0.8)	8 (0.9)	12 (1.2)	46 (2.3)	32 (2.3)
Teachers should explain an idea to students before having them investigate the idea.	6 (0.9)	40 (2.1)	22 (1.7)	23 (1.8)	9 (1.3)
Most class periods should provide opportunities for students to share their thinking and reasoning.	0 (0.1)	2 (0.5)	4 (0.7)	55 (2.0)	39 (2.0)
Hands-on activities/manipulatives should be used primarily to reinforce a mathematical idea that the students have already learned.	3 (0.7)	32 (1.6)	21 (1.5)	32 (1.9)	12 (1.8)
Teachers should ask students to justify their mathematical thinking.	0 ---†	0 (0.4)	2 (0.5)	39 (2.5)	59 (2.5)
Students learn best when instruction is connected to their everyday lives.	1 (0.8)	5 (1.1)	9 (1.0)	50 (2.1)	35 (1.9)
Most class periods should provide opportunities for students to apply mathematical ideas to real-world contexts.	0 (0.1)	9 (1.3)	13 (1.2)	52 (2.1)	26 (1.9)
Students should learn mathematics by doing mathematics (e.g., considering how to approach a problem, explaining and justifying solutions, creating and using mathematical models).	0 ---†	0 (0.1)	4 (0.8)	44 (1.9)	52 (1.8)

† No high school mathematics teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

Table MTQ 27
Mathematics Teachers Having Various Leadership Responsibilities Within the Last Three Years, by Grade Range

	PERCENT OF TEACHERS		
	ELEMENTARY	MIDDLE	HIGH
Served as a lead teacher or department chair in mathematics	14 (1.6)	31 (2.3)	28 (1.8)
Served as a formal mentor or coach for a mathematics teacher	6 (1.2)	21 (1.9)	29 (2.0)
Supervised a student teacher in your classroom	27 (2.2)	21 (2.1)	20 (1.8)
Served on a school district-wide/diocese-wide mathematics committee (e.g., developing curriculum, developing pacing guides, selecting instructional materials)	21 (1.6)	45 (2.9)	49 (2.1)
Led or co-led a workshop or professional learning community (e.g., teacher study group, lesson study) for other teachers focused on mathematics or mathematics teaching	10 (1.2)	23 (2.2)	26 (1.8)
Taught a mathematics lesson for other teachers in your school to observe	28 (1.7)	43 (2.9)	41 (2.4)
Observed another teacher's mathematics lesson for the purpose of giving him/her feedback	27 (1.9)	47 (3.0)	53 (2.0)

Table MTQ 28
Average Minutes Per Week Mathematics Classes[†] Meet

	AVERAGE NUMBER OF MINUTES
Elementary	358 (21.3)
Middle	265 (4.4)
High	254 (3.0)

† Includes only non-self-contained classes.

Table MTQ 29
Average Number of Students in Mathematics Classes

	AVERAGE NUMBER OF STUDENTS
Elementary	21 (0.2)
Middle	22 (0.4)
High	21 (0.3)

Table MTQ 30
Race/Ethnicity of Students in Mathematics Classes, by Grade Range

	AVERAGE PERCENT OF STUDENTS		
	ELEMENTARY	MIDDLE	HIGH
American Indian or Alaskan Native	2 (0.5)	2 (0.4)	2 (0.7)
Asian	4 (0.7)	4 (0.4)	5 (0.5)
Black or African American	18 (1.4)	16 (1.3)	13 (0.8)
Hispanic/Latino	19 (1.3)	23 (1.5)	20 (1.4)
Native Hawaiian or Other Pacific Islander	1 (0.2)	0 (0.1)	1 (0.1)
White	52 (1.6)	53 (2.0)	57 (1.6)
Two or more races	5 (0.4)	3 (0.3)	3 (0.3)

Table MTQ 31
Prior Mathematics Achievement Level of
Students in Mathematics Classes, by Grade Range

	PERCENT OF CLASSES		
	ELEMENTARY	MIDDLE	HIGH
Mostly low achievers	12 (1.4)	26 (1.8)	22 (1.4)
Mostly average achievers	30 (1.5)	24 (1.7)	28 (1.6)
Mostly high achievers	7 (1.0)	22 (1.8)	27 (1.3)
A mixture of levels	51 (1.8)	29 (2.0)	24 (1.6)

Table MTQ 32.1
Elementary School Mathematics Classes in Which Teachers
Report Having Control Over Various Curricular and Instructional Decisions

	PERCENT OF CLASSES				
	NO CONTROL		MODERATE CONTROL		STRONG CONTROL
	1	2	3	4	5
Determining course goals and objectives	34 (2.3)	16 (1.8)	21 (1.8)	13 (1.6)	16 (1.7)
Selecting curriculum materials (e.g., textbooks)	33 (2.3)	24 (2.1)	20 (1.7)	12 (1.5)	11 (1.5)
Selecting content, topics, and skills to be taught	40 (2.6)	20 (1.9)	16 (1.9)	12 (1.7)	11 (1.3)
Selecting the sequence in which topics are covered	25 (2.1)	18 (1.8)	22 (1.6)	16 (1.7)	19 (1.7)
Determining the amount of instructional time to spend on each topic	17 (1.7)	14 (1.5)	26 (1.8)	22 (1.8)	21 (1.8)
Selecting teaching techniques	2 (0.6)	4 (0.9)	13 (1.5)	29 (2.1)	52 (2.2)
Determining the amount of homework to be assigned	3 (1.0)	3 (0.9)	10 (1.3)	23 (2.0)	61 (2.2)
Choosing criteria for grading student performance	6 (1.2)	9 (1.3)	27 (2.4)	25 (2.0)	34 (2.0)

Table MTQ 32.2
Middle School Mathematics Classes in Which Teachers Report
Having Control Over Various Curricular and Instructional Decisions

	PERCENT OF CLASSES				
	NO CONTROL		MODERATE CONTROL		STRONG CONTROL
	1	2	3	4	5
Determining course goals and objectives	26 (2.2)	13 (1.3)	20 (2.3)	14 (1.6)	28 (2.4)
Selecting curriculum materials (e.g., textbooks)	27 (2.2)	17 (2.1)	23 (2.1)	15 (2.0)	18 (2.1)
Selecting content, topics, and skills to be taught	31 (2.0)	17 (1.8)	17 (1.8)	14 (1.9)	21 (2.1)
Selecting the sequence in which topics are covered	12 (1.4)	16 (1.8)	22 (2.4)	18 (1.7)	31 (2.6)
Determining the amount of instructional time to spend on each topic	6 (0.9)	12 (1.8)	23 (2.1)	21 (2.1)	37 (2.7)
Selecting teaching techniques	0 (0.0)	2 (0.5)	8 (1.5)	23 (2.2)	68 (2.5)
Determining the amount of homework to be assigned	1 (0.4)	1 (0.4)	9 (1.5)	18 (2.2)	71 (2.4)
Choosing criteria for grading student performance	2 (0.7)	5 (1.3)	18 (2.0)	22 (2.2)	52 (2.9)

Table MTQ 32.3
High School Mathematics Classes in Which Teachers Report
Having Control Over Various Curricular and Instructional Decisions

	PERCENT OF CLASSES				
	NO CONTROL		MODERATE CONTROL		STRONG CONTROL
	1	2	3	4	5
Determining course goals and objectives	14 (1.4)	13 (1.3)	24 (1.6)	19 (1.4)	30 (1.6)
Selecting curriculum materials (e.g., textbooks)	20 (1.8)	13 (1.4)	24 (1.6)	16 (1.5)	27 (1.8)
Selecting content, topics, and skills to be taught	17 (1.8)	15 (1.5)	23 (1.7)	19 (1.9)	26 (1.6)
Selecting the sequence in which topics are covered	8 (1.2)	10 (1.3)	18 (1.4)	18 (1.5)	45 (1.7)
Determining the amount of instructional time to spend on each topic	3 (0.5)	8 (1.1)	20 (1.6)	21 (1.6)	49 (2.0)
Selecting teaching techniques	0 (0.2)	1 (0.3)	7 (1.2)	21 (1.6)	71 (1.5)
Determining the amount of homework to be assigned	2 (0.6)	1 (0.4)	7 (1.2)	15 (1.3)	75 (1.6)
Choosing criteria for grading student performance	3 (0.6)	5 (1.2)	14 (1.5)	24 (1.6)	53 (2.0)

Table MTQ 33.1
Emphasis Given in Elementary School
Mathematics Classes to Various Instructional Objectives

	PERCENT OF CLASSES			
	NONE	MINIMAL EMPHASIS	MODERATE EMPHASIS	HEAVY EMPHASIS
Learning mathematics vocabulary	0 (0.1)	8 (0.9)	56 (1.8)	36 (1.7)
Learning mathematical procedures and/or algorithms	1 (0.3)	8 (0.9)	39 (1.5)	52 (1.7)
Learning to perform computations with speed and accuracy	2 (0.6)	17 (1.4)	49 (2.0)	33 (2.1)
Understanding mathematical ideas	0 ---†	2 (0.5)	31 (1.6)	67 (1.7)
Learning how to do mathematics (e.g., consider how to approach a problem, explain and justify solutions, create and use mathematical models)	0 (0.1)	4 (0.7)	34 (1.8)	62 (1.9)
Learning about real-life applications of mathematics	1 (0.3)	13 (1.4)	53 (2.0)	34 (1.9)
Increasing students' interest in mathematics	1 (0.3)	11 (1.2)	47 (2.0)	41 (1.9)
Developing students' confidence that they can successfully pursue careers in mathematics	3 (0.6)	20 (1.6)	39 (1.8)	37 (1.7)
Learning test-taking skills/strategies	4 (0.7)	25 (1.6)	41 (1.4)	30 (1.8)

† No elementary school mathematics teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

Table MTQ 33.2
Emphasis Given in Middle School
Mathematics Classes to Various Instructional Objectives

	PERCENT OF CLASSES			
	NONE	MINIMAL EMPHASIS	MODERATE EMPHASIS	HEAVY EMPHASIS
Learning mathematics vocabulary	0 (0.1)	12 (1.3)	61 (2.1)	27 (1.9)
Learning mathematical procedures and/or algorithms	0 (0.0)	5 (0.8)	42 (2.4)	53 (2.6)
Learning to perform computations with speed and accuracy	1 (0.4)	28 (1.9)	51 (2.2)	20 (1.6)
Understanding mathematical ideas	0 ---†	2 (0.8)	27 (1.9)	71 (1.9)
Learning how to do mathematics (e.g., consider how to approach a problem, explain and justify solutions, create and use mathematical models)	0 (0.1)	3 (0.6)	36 (2.1)	61 (2.1)
Learning about real-life applications of mathematics	0 (0.1)	12 (1.6)	50 (2.2)	37 (1.9)
Increasing students' interest in mathematics	0 (0.1)	17 (1.6)	49 (2.1)	34 (2.0)
Developing students' confidence that they can successfully pursue careers in mathematics	1 (0.3)	15 (1.7)	43 (2.2)	41 (2.0)
Learning test-taking skills/strategies	1 (0.2)	30 (2.2)	47 (2.4)	23 (1.5)

† No middle school mathematics teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

Table MTQ 33.3
Emphasis Given in High School
Mathematics Classes to Various Instructional Objectives

	PERCENT OF CLASSES			
	NONE	MINIMAL EMPHASIS	MODERATE EMPHASIS	HEAVY EMPHASIS
Learning mathematics vocabulary	0 (0.1)	15 (1.4)	56 (1.5)	29 (1.5)
Learning mathematical procedures and/or algorithms	0 (0.1)	6 (1.0)	39 (1.8)	55 (1.8)
Learning to perform computations with speed and accuracy	3 (0.6)	26 (1.2)	49 (1.6)	21 (1.3)
Understanding mathematical ideas	0 ---†	2 (0.6)	29 (1.7)	69 (1.7)
Learning how to do mathematics (e.g., consider how to approach a problem, explain and justify solutions, create and use mathematical models)	0 (0.0)	5 (0.9)	32 (1.7)	63 (1.6)
Learning about real-life applications of mathematics	1 (0.3)	19 (1.4)	48 (1.2)	32 (1.4)
Increasing students' interest in mathematics	1 (0.4)	20 (1.2)	52 (1.6)	26 (1.3)
Developing students' confidence that they can successfully pursue careers in mathematics	2 (0.4)	18 (1.2)	43 (1.4)	37 (1.5)
Learning test-taking skills/strategies	2 (0.6)	26 (1.4)	47 (1.7)	25 (1.3)

† No high school mathematics teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

Table MTQ 34.1
Elementary School Mathematics Classes in Which
Teachers Report Using Various Activities in Their Classrooms

	PERCENT OF CLASSES				
	NEVER	RARELY (E.G., A FEW TIMES A YEAR)	SOMETIMES (E.G., ONCE OR TWICE A MONTH)	OFTEN (E.G., ONCE OR TWICE A WEEK)	ALL OR ALMOST ALL MATHEMATICS LESSONS
Explain mathematical ideas to the whole class	0 (0.2)	1 (0.4)	4 (0.8)	21 (1.9)	73 (2.0)
Engage the whole class in discussions	0 (0.2)	1 (0.3)	4 (0.8)	24 (1.4)	71 (1.5)
Have students work in small groups	0 (0.1)	1 (0.4)	10 (1.1)	37 (2.0)	51 (2.4)
Provide manipulatives for students to use in problem-solving/investigations	0 (0.1)	4 (0.6)	18 (1.3)	43 (2.0)	35 (2.0)
Use flipped instruction (have students watch lectures/demonstrations outside of class to prepare for in-class activities)	53 (2.2)	22 (1.5)	12 (1.1)	7 (1.0)	6 (1.2)
Have students read from a textbook or other material in class, either aloud or to themselves	30 (1.6)	24 (1.4)	18 (1.7)	16 (1.3)	12 (1.1)
Have students write their reflections (e.g., in their journals, on exit tickets) in class or for homework	14 (1.4)	20 (1.3)	25 (1.7)	28 (1.5)	13 (1.2)
Focus on literacy skills (e.g., informational reading or writing strategies)	11 (1.3)	21 (1.5)	27 (1.4)	25 (1.5)	16 (1.5)
Have students practice for standardized tests	19 (1.5)	27 (1.5)	28 (1.5)	18 (1.5)	8 (0.8)

Table MTQ 34.2
Middle School Mathematics Classes in Which
Teachers Report Using Various Activities in Their Classrooms

	PERCENT OF CLASSES				
	NEVER	RARELY (E.G., A FEW TIMES A YEAR)	SOMETIMES (E.G., ONCE OR TWICE A MONTH)	OFTEN (E.G., ONCE OR TWICE A WEEK)	ALL OR ALMOST ALL MATHEMATICS LESSONS
Explain mathematical ideas to the whole class	0 --†	1 (0.2)	5 (0.9)	36 (2.0)	59 (2.2)
Engage the whole class in discussions	0 (0.0)	1 (0.4)	8 (1.0)	36 (2.1)	54 (2.0)
Have students work in small groups	0 (0.0)	3 (0.7)	20 (2.2)	43 (2.3)	35 (2.1)
Provide manipulatives for students to use in problem-solving/investigations	3 (1.1)	20 (1.7)	48 (2.4)	24 (2.0)	6 (0.9)
Use flipped instruction (have students watch lectures/demonstrations outside of class to prepare for in-class activities)	46 (2.1)	30 (2.1)	14 (1.5)	8 (1.1)	2 (0.5)
Have students read from a textbook or other material in class, either aloud or to themselves	28 (2.2)	27 (2.0)	22 (2.1)	17 (2.2)	7 (1.2)
Have students write their reflections (e.g., in their journals, on exit tickets) in class or for homework	12 (1.3)	29 (2.0)	29 (1.8)	22 (1.6)	8 (1.1)
Focus on literacy skills (e.g., informational reading or writing strategies)	16 (1.5)	34 (2.0)	29 (1.9)	16 (1.4)	4 (0.7)
Have students practice for standardized tests	7 (1.0)	29 (2.2)	33 (2.0)	25 (2.0)	7 (1.0)

† No middle school mathematics teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

Table MTQ 34.3
High School Mathematics Classes in Which
Teachers Report Using Various Activities in Their Classrooms

	PERCENT OF CLASSES				
	NEVER	RARELY (E.G., A FEW TIMES A YEAR)	SOMETIMES (E.G., ONCE OR TWICE A MONTH)	OFTEN (E.G., ONCE OR TWICE A WEEK)	ALL OR ALMOST ALL MATHEMATICS LESSONS
Explain mathematical ideas to the whole class	0 (0.1)	1 (0.3)	4 (0.7)	29 (1.6)	65 (1.7)
Engage the whole class in discussions	0 (0.2)	4 (0.7)	12 (1.0)	34 (1.6)	50 (1.7)
Have students work in small groups	1 (0.5)	6 (1.0)	23 (1.4)	41 (1.8)	30 (1.7)
Provide manipulatives for students to use in problem-solving/investigations	8 (0.9)	33 (1.5)	39 (1.7)	16 (1.2)	4 (0.8)
Use flipped instruction (have students watch lectures/demonstrations outside of class to prepare for in-class activities)	44 (1.7)	30 (1.5)	16 (1.3)	6 (0.8)	4 (1.1)
Have students read from a textbook or other material in class, either aloud or to themselves	34 (1.8)	30 (1.5)	20 (1.6)	10 (1.0)	6 (1.0)
Have students write their reflections (e.g., in their journals, on exit tickets) in class or for homework	27 (1.3)	29 (1.5)	25 (1.6)	14 (1.2)	5 (0.9)
Focus on literacy skills (e.g., informational reading or writing strategies)	26 (1.5)	33 (1.5)	24 (1.1)	13 (1.1)	4 (0.8)
Have students practice for standardized tests	14 (1.3)	25 (1.6)	32 (1.4)	21 (1.3)	8 (0.8)

Table MTQ 35.1
Elementary School Mathematics Classes in Which Teachers
Report Students Engaging in Various Aspects of Mathematics Practices

	PERCENT OF CLASSES				
	NEVER	RARELY (E.G., A FEW TIMES A YEAR)	SOMETIMES (E.G., ONCE OR TWICE A MONTH)	OFTEN (E.G., ONCE OR TWICE A WEEK)	ALL OR ALMOST ALL MATHEMATICS LESSONS
Work on challenging problems that require thinking beyond just applying rules, algorithms, or procedures	1 (0.4)	4 (0.6)	21 (1.4)	50 (1.9)	25 (1.5)
Figure out what a challenging problem is asking (by talking with their classmates and/or using manipulatives, pictures, diagrams, tables, or equations)	1 (0.3)	3 (0.5)	18 (1.5)	46 (1.8)	32 (1.8)
Reflect on their solution strategies as they work through a mathematics problem and revise as needed	1 (0.4)	5 (0.8)	19 (1.8)	44 (1.8)	31 (2.1)
Continue working through a mathematics problem when they reach points of difficulty, challenge, or error	1 (0.4)	2 (0.4)	16 (1.4)	42 (2.0)	39 (2.2)
Determine whether their answer makes sense (e.g., the answer has reasonable magnitude or sign, uses appropriate units, fits the context of the problem)	1 (0.4)	2 (0.5)	13 (1.3)	39 (1.8)	46 (2.0)
Represent aspects of a problem using mathematical symbols, pictures, diagrams, tables, or objects in order to solve it	0 (0.2)	1 (0.3)	10 (1.0)	39 (1.7)	49 (1.8)
Provide mathematical reasoning to explain, justify, or prove their thinking	1 (0.3)	2 (0.5)	12 (1.2)	41 (1.8)	44 (1.8)
Compare and contrast different solution strategies for a mathematics problem in terms of their strengths and limitations (e.g., their efficiency, generalizability, interpretability by others)	4 (0.7)	9 (0.9)	27 (1.5)	40 (1.6)	21 (1.6)
Analyze the mathematical reasoning of others (e.g., decide if their reasoning makes sense, identify correct ideas or flaws in their thinking)	3 (0.5)	7 (0.8)	25 (1.5)	42 (1.8)	23 (1.7)
Pose questions to clarify, challenge, or improve the mathematical reasoning of others	3 (0.6)	8 (1.0)	20 (1.7)	39 (1.6)	29 (1.9)
Identify relevant information and relationships that could be used to solve a mathematics problem (e.g., quantities and relationships needed to develop an equation that illustrates a situation or determines an outcome)	3 (0.6)	5 (0.7)	20 (1.7)	42 (1.6)	30 (1.5)

Develop a mathematical model (meaning, a representation of relevant information and relationships such as an equation, tape diagram, algorithm, or function) to solve a mathematics problem	3 (0.5)	5 (0.9)	17 (1.5)	39 (1.9)	36 (1.7)
Determine what tools (e.g., pencil and paper, manipulatives, ruler, protractor, calculator, spreadsheet) are appropriate for solving a mathematics problem	2 (0.5)	7 (1.0)	19 (1.6)	38 (1.8)	34 (1.6)
Determine what units are appropriate for expressing numerical answers, data, and/or measurements	3 (0.5)	6 (0.9)	19 (1.6)	39 (1.7)	33 (1.9)
Discuss how certain terms or phrases may have specific meanings in mathematics that are different from their meaning in everyday language	3 (0.6)	10 (1.1)	26 (1.4)	40 (2.0)	22 (1.5)
Identify patterns or characteristics of numbers, diagrams, or graphs that may be helpful in solving a mathematics problem	1 (0.4)	3 (0.6)	18 (1.4)	45 (1.9)	33 (1.9)
Work on generating a rule or formula (e.g., based on multiple problems, patterns, or repeated calculations)	6 (0.8)	9 (1.0)	27 (1.7)	38 (1.8)	20 (1.3)

Table MTQ 35.2
Middle School Mathematics Classes in Which Teachers
Report Students Engaging in Various Aspects of Mathematics Practices

	PERCENT OF CLASSES				
	NEVER	RARELY (E.G., A FEW TIMES A YEAR)	SOMETIMES (E.G., ONCE OR TWICE A MONTH)	OFTEN (E.G., ONCE OR TWICE A WEEK)	ALL OR ALMOST ALL MATHEMATICS LESSONS
Work on challenging problems that require thinking beyond just applying rules, algorithms, or procedures	0 (0.1)	1 (0.4)	23 (2.0)	53 (2.2)	22 (1.7)
Figure out what a challenging problem is asking (by talking with their classmates and/or using manipulatives, pictures, diagrams, tables, or equations)	0 (0.2)	4 (0.8)	23 (1.8)	51 (2.3)	22 (1.5)
Reflect on their solution strategies as they work through a mathematics problem and revise as needed	0 (0.1)	6 (1.0)	29 (1.8)	43 (2.0)	22 (1.6)
Continue working through a mathematics problem when they reach points of difficulty, challenge, or error	0 (0.1)	3 (0.5)	16 (1.8)	49 (1.9)	32 (1.9)
Determine whether their answer makes sense (e.g., the answer has reasonable magnitude or sign, uses appropriate units, fits the context of the problem)	0 (0.1)	2 (0.8)	13 (1.7)	41 (2.0)	44 (2.0)
Represent aspects of a problem using mathematical symbols, pictures, diagrams, tables, or objects in order to solve it	0 (0.1)	3 (0.9)	21 (2.0)	42 (2.2)	33 (1.9)
Provide mathematical reasoning to explain, justify, or prove their thinking	0 (0.0)	2 (0.8)	15 (1.7)	44 (2.3)	39 (2.3)
Compare and contrast different solution strategies for a mathematics problem in terms of their strengths and limitations (e.g., their efficiency, generalizability, interpretability by others)	1 (0.3)	8 (0.9)	35 (2.1)	40 (1.9)	15 (1.4)
Analyze the mathematical reasoning of others (e.g., decide if their reasoning makes sense, identify correct ideas or flaws in their thinking)	1 (0.2)	9 (1.0)	30 (2.3)	40 (2.2)	21 (1.8)
Pose questions to clarify, challenge, or improve the mathematical reasoning of others	1 (0.3)	9 (1.1)	22 (1.8)	39 (2.3)	30 (2.0)
Identify relevant information and relationships that could be used to solve a mathematics problem (e.g., quantities and relationships needed to develop an equation that illustrates a situation or determines an outcome)	0 (0.0)	2 (0.4)	20 (2.0)	46 (2.3)	32 (2.0)

Develop a mathematical model (meaning, a representation of relevant information and relationships such as an equation, tape diagram, algorithm, or function) to solve a mathematics problem	0 (0.0)	5 (0.9)	25 (2.1)	44 (2.1)	26 (1.7)
Determine what tools (e.g., pencil and paper, manipulatives, ruler, protractor, calculator, spreadsheet) are appropriate for solving a mathematics problem	1 (0.3)	13 (1.6)	23 (1.7)	36 (2.0)	26 (1.7)
Determine what units are appropriate for expressing numerical answers, data, and/or measurements	0 (0.1)	4 (0.7)	22 (1.4)	45 (2.0)	29 (1.9)
Discuss how certain terms or phrases may have specific meanings in mathematics that are different from their meaning in everyday language	0 (0.2)	5 (0.8)	29 (2.0)	42 (1.8)	24 (1.6)
Identify patterns or characteristics of numbers, diagrams, or graphs that may be helpful in solving a mathematics problem	0 (0.1)	1 (0.4)	22 (1.8)	46 (2.0)	31 (1.9)
Work on generating a rule or formula (e.g., based on multiple problems, patterns, or repeated calculations)	0 (0.1)	5 (0.8)	25 (1.8)	47 (2.0)	22 (1.9)

Table MTQ 35.3
High School Mathematics Classes in Which Teachers
Report Students Engaging in Various Aspects of Mathematics Practices

	PERCENT OF CLASSES				
	NEVER	RARELY (E.G., A FEW TIMES A YEAR)	SOMETIMES (E.G., ONCE OR TWICE A MONTH)	OFTEN (E.G., ONCE OR TWICE A WEEK)	ALL OR ALMOST ALL MATHEMATICS LESSONS
Work on challenging problems that require thinking beyond just applying rules, algorithms, or procedures	0 (0.2)	5 (0.7)	23 (1.3)	48 (1.4)	24 (1.7)
Figure out what a challenging problem is asking (by talking with their classmates and/or using manipulatives, pictures, diagrams, tables, or equations)	1 (0.3)	8 (1.0)	28 (1.6)	42 (1.8)	21 (1.6)
Reflect on their solution strategies as they work through a mathematics problem and revise as needed	2 (0.4)	8 (0.9)	30 (1.5)	42 (1.8)	20 (1.2)
Continue working through a mathematics problem when they reach points of difficulty, challenge, or error	0 (0.2)	4 (0.7)	16 (1.1)	47 (1.7)	32 (1.8)
Determine whether their answer makes sense (e.g., the answer has reasonable magnitude or sign, uses appropriate units, fits the context of the problem)	0 (0.2)	2 (0.4)	13 (1.1)	45 (1.3)	39 (1.3)
Represent aspects of a problem using mathematical symbols, pictures, diagrams, tables, or objects in order to solve it	1 (0.3)	4 (0.7)	20 (1.4)	43 (1.8)	33 (1.6)
Provide mathematical reasoning to explain, justify, or prove their thinking	0 (0.2)	4 (0.7)	19 (1.2)	40 (1.5)	36 (1.6)
Compare and contrast different solution strategies for a mathematics problem in terms of their strengths and limitations (e.g., their efficiency, generalizability, interpretability by others)	2 (0.5)	11 (0.9)	33 (1.7)	39 (1.7)	15 (1.2)
Analyze the mathematical reasoning of others (e.g., decide if their reasoning makes sense, identify correct ideas or flaws in their thinking)	3 (0.5)	11 (0.9)	34 (1.5)	38 (1.4)	15 (1.1)
Pose questions to clarify, challenge, or improve the mathematical reasoning of others	4 (0.7)	9 (0.9)	24 (1.5)	36 (1.4)	27 (1.3)
Identify relevant information and relationships that could be used to solve a mathematics problem (e.g., quantities and relationships needed to develop an equation that illustrates a situation or determines an outcome)	0 (0.2)	4 (0.7)	22 (1.6)	42 (1.7)	31 (1.7)

Develop a mathematical model (meaning, a representation of relevant information and relationships such as an equation, tape diagram, algorithm, or function) to solve a mathematics problem	1 (0.4)	8 (0.9)	27 (1.9)	41 (1.6)	23 (1.5)
Determine what tools (e.g., pencil and paper, manipulatives, ruler, protractor, calculator, spreadsheet) are appropriate for solving a mathematics problem	4 (0.5)	12 (1.3)	25 (1.5)	33 (1.6)	26 (1.5)
Determine what units are appropriate for expressing numerical answers, data, and/or measurements	1 (0.3)	8 (1.2)	24 (1.2)	41 (1.4)	26 (1.3)
Discuss how certain terms or phrases may have specific meanings in mathematics that are different from their meaning in everyday language	1 (0.4)	8 (1.0)	29 (1.7)	40 (1.6)	22 (1.3)
Identify patterns or characteristics of numbers, diagrams, or graphs that may be helpful in solving a mathematics problem	1 (0.4)	4 (1.0)	20 (1.2)	47 (1.7)	27 (1.5)
Work on generating a rule or formula (e.g., based on multiple problems, patterns, or repeated calculations)	1 (0.4)	8 (0.9)	30 (1.4)	40 (1.6)	20 (1.4)

Table MTQ 36
Mathematics Classes in Which Teachers Report
Incorporating Coding Into Mathematics Instruction, by Grade Range

	PERCENT OF CLASSES		
	ELEMENTARY	MIDDLE	HIGH
Never	74 (2.0)	86 (2.1)	89 (1.0)
Rarely (e.g., A few times per year)	15 (1.7)	11 (1.6)	9 (0.9)
Sometimes (e.g., Once or twice a month)	7 (1.1)	3 (1.3)	2 (0.4)
Often (e.g., Once or twice a week)	3 (0.8)	0 (0.3)	1 (0.2)
All or almost all mathematics lessons	0 (0.3)	0 (0.1)	0 (0.1)

Table MTQ 37
Amount of Homework Assigned in Mathematics Classes Per Week, by Grade Range

	PERCENT OF CLASSES		
	ELEMENTARY	MIDDLE	HIGH
None	9 (1.5)	5 (1.5)	4 (0.7)
1–15 minutes per week	17 (1.7)	7 (1.3)	4 (0.7)
16–30 minutes per week	25 (1.9)	16 (2.1)	12 (1.6)
31–60 minutes per week	31 (2.3)	34 (2.4)	29 (1.7)
61–90 minutes per week	11 (1.5)	21 (2.2)	26 (1.6)
91–120 minutes per week	6 (1.0)	13 (2.0)	14 (1.3)
More than 2 hours per week	1 (0.4)	4 (1.3)	12 (1.5)

Table MTQ 38
Frequency of Required External
Mathematics Testing in Mathematics Classes, by Grade Range

	PERCENT OF CLASSES		
	ELEMENTARY	MIDDLE	HIGH
Never	9 (1.3)	1 (0.4)	20 (1.6)
Once a year	9 (1.3)	12 (2.1)	25 (1.9)
Twice a year	9 (1.4)	11 (1.6)	22 (1.8)
Three or four times a year	48 (2.8)	43 (2.7)	24 (1.7)
Five or more times a year	25 (2.2)	33 (2.7)	10 (1.3)

Table MTQ 39
Availability of Projection Devices in Mathematics Classrooms, by Grade Range

	PERCENT OF CLASSES		
	ELEMENTARY	MIDDLE	HIGH
Always available in your classroom	96 (0.8)	96 (1.0)	94 (1.0)
Available upon request	2 (0.5)	3 (0.9)	5 (1.0)
Not available	2 (0.7)	1 (0.4)	1 (0.4)

Table MTQ 40.1
Adequacy of Classroom Resources for
Mathematics Instruction in Elementary Schools

	PERCENT OF CLASSES				
	NOT ADEQUATE		SOMEWHAT ADEQUATE		ADEQUATE
	1	2	3	4	5
Instructional technology (e.g., calculators, computers, probes/sensors)	7 (1.2)	5 (1.0)	21 (1.8)	15 (1.5)	52 (2.2)
Measurement tools (e.g., protractors, rulers)	3 (0.7)	3 (0.7)	15 (1.4)	16 (1.7)	63 (2.3)
Manipulatives (e.g., pattern blocks, algebra tiles)	1 (0.5)	3 (0.6)	9 (1.5)	19 (1.9)	68 (2.2)
Consumable supplies (e.g., graphing paper, batteries)	6 (1.1)	8 (1.3)	21 (2.1)	19 (1.8)	45 (2.7)

Table MTQ 40.2
Adequacy of Classroom Resources for
Mathematics Instruction in Middle Schools

	PERCENT OF CLASSES				
	NOT ADEQUATE		SOMEWHAT ADEQUATE		ADEQUATE
	1	2	3	4	5
Instructional technology (e.g., calculators, computers, probes/sensors)	3 (1.0)	3 (1.5)	14 (1.7)	15 (1.7)	65 (2.7)
Measurement tools (e.g., protractors, rulers)	2 (0.6)	3 (1.4)	13 (1.8)	17 (1.8)	65 (2.7)
Manipulatives (e.g., pattern blocks, algebra tiles)	8 (2.3)	6 (1.2)	23 (2.4)	21 (2.2)	42 (2.8)
Consumable supplies (e.g., graphing paper, batteries)	3 (0.7)	3 (0.8)	19 (2.1)	23 (2.3)	52 (2.7)

Table MTQ 40.3
Adequacy of Classroom Resources for
Mathematics Instruction in High Schools

	PERCENT OF CLASSES				
	NOT ADEQUATE		SOMEWHAT ADEQUATE		ADEQUATE
	1	2	3	4	5
Instructional technology (e.g., calculators, computers, probes/sensors)	1 (0.4)	2 (0.6)	11 (1.4)	16 (1.9)	69 (2.1)
Measurement tools (e.g., protractors, rulers)	3 (0.6)	4 (0.7)	14 (1.4)	16 (1.4)	64 (1.8)
Manipulatives (e.g., pattern blocks, algebra tiles)	14 (1.3)	14 (1.7)	21 (1.5)	15 (1.6)	35 (2.2)
Consumable supplies (e.g., graphing paper, batteries)	4 (0.7)	5 (1.0)	14 (1.2)	22 (1.7)	55 (1.7)

Table MTQ 41.1
Frequency of Use of Various Instructional Resources in Elementary School Mathematics Classes

	PERCENT OF CLASSES				
	NEVER	RARELY (E.G., A FEW TIMES A YEAR)	SOMETIMES (E.G., ONCE OR TWICE A MONTH)	OFTEN (E.G., ONCE OR TWICE A WEEK)	ALL OR ALMOST ALL MATHEMATICS LESSONS
Commercially published textbooks (printed or electronic), including the supplementary materials (e.g., worksheets) that accompany the textbooks	9 (1.1)	6 (1.0)	9 (1.1)	21 (1.5)	55 (2.2)
State county/district/diocese-developed units or lessons	23 (1.5)	17 (1.1)	20 (1.7)	19 (1.6)	22 (1.6)
Online units or courses that students work through at their own pace (e.g., i-Ready, Edgenuity)	38 (1.9)	12 (1.2)	13 (1.4)	23 (1.6)	13 (1.4)
Lessons or resources from websites that have a subscription fee or per lesson cost (e.g., BrainPOP, Discovery Ed, Teachers Pay Teachers)	9 (1.1)	12 (1.4)	26 (1.6)	42 (2.0)	12 (1.2)
Lessons or resources from websites that are free (e.g., Khan Academy, Illustrative Math)	18 (1.4)	17 (1.4)	28 (1.6)	25 (1.4)	12 (1.6)
Units or lessons you created (either by yourself or with others)	11 (1.2)	16 (1.5)	30 (1.9)	27 (1.7)	17 (1.5)
Units or lessons you collected from any other source (e.g., conferences, journals, colleagues, university or museum partners)	18 (1.4)	24 (1.5)	28 (1.8)	23 (1.6)	8 (1.0)

Table MTQ 41.2
Frequency of Use of Various Instructional Resources in Middle School Mathematics Classes

	PERCENT OF CLASSES				
	NEVER	RARELY (E.G., A FEW TIMES A YEAR)	SOMETIMES (E.G., ONCE OR TWICE A MONTH)	OFTEN (E.G., ONCE OR TWICE A WEEK)	ALL OR ALMOST ALL MATHEMATICS LESSONS
Commercially published textbooks (printed or electronic), including the supplementary materials (e.g., worksheets) that accompany the textbooks	13 (1.6)	9 (1.2)	13 (1.3)	27 (2.4)	38 (2.4)
State county/district/diocese-developed units or lessons	29 (2.2)	24 (2.3)	22 (1.8)	13 (1.2)	12 (1.4)
Online units or courses that students work through at their own pace (e.g., i-Ready, Edgenuity)	39 (2.2)	18 (1.6)	19 (1.9)	19 (1.6)	5 (1.1)
Lessons or resources from websites that have a subscription fee or per lesson cost (e.g., BrainPOP, Discovery Ed, Teachers Pay Teachers)	18 (1.7)	17 (1.7)	31 (2.1)	28 (2.2)	6 (1.1)
Lessons or resources from websites that are free (e.g., Khan Academy, Illustrative Math)	7 (1.3)	17 (1.7)	37 (2.0)	30 (2.3)	8 (1.1)
Units or lessons you created (either by yourself or with others)	4 (0.6)	9 (1.5)	22 (1.8)	37 (2.2)	28 (1.8)
Units or lessons you collected from any other source (e.g., conferences, journals, colleagues, university or museum partners)	12 (1.6)	26 (1.7)	32 (2.0)	24 (1.8)	7 (0.9)

Table MTQ 41.3
Frequency of Use of Various Instructional Resources in High School Mathematics Classes

	PERCENT OF CLASSES				
	NEVER	RARELY (E.G., A FEW TIMES A YEAR)	SOMETIMES (E.G., ONCE OR TWICE A MONTH)	OFTEN (E.G., ONCE OR TWICE A WEEK)	ALL OR ALMOST ALL MATHEMATICS LESSONS
Commercially published textbooks (printed or electronic), including the supplementary materials (e.g., worksheets) that accompany the textbooks	13 (1.4)	13 (1.0)	13 (1.0)	26 (1.2)	35 (1.7)
State county/district/diocese-developed units or lessons	39 (1.8)	22 (1.4)	17 (1.1)	12 (1.0)	11 (1.1)
Online units or courses that students work through at their own pace (e.g., i-Ready, Edgenuity)	59 (1.8)	18 (1.2)	12 (1.3)	8 (0.9)	4 (0.7)
Lessons or resources from websites that have a subscription fee or per lesson cost (e.g., BrainPOP, Discovery Ed, Teachers Pay Teachers)	42 (1.4)	20 (1.4)	19 (1.1)	14 (0.8)	5 (0.8)
Lessons or resources from websites that are free (e.g., Khan Academy, Illustrative Math)	16 (1.0)	25 (1.3)	33 (1.4)	19 (1.3)	7 (0.7)
Units or lessons you created (either by yourself or with others)	3 (0.6)	5 (0.8)	14 (1.1)	31 (1.4)	47 (1.7)
Units or lessons you collected from any other source (e.g., conferences, journals, colleagues, university or museum partners)	13 (1.2)	21 (1.4)	31 (1.5)	25 (1.5)	10 (0.9)

Table MTQ 42
Mathematics Classes for Which the District/Diocese Designates Instructional Materials to Be Used

	PERCENT OF CLASSES
Elementary	91 (1.3)
Middle	80 (2.1)
High	66 (1.7)

Table MTQ 43
Mathematics Classes for Which Various
Types of Instructional Materials Are Designated, by Grade Range

	PERCENT OF CLASSES		
	ELEMENTARY	MIDDLE	HIGH
Commercially published textbooks (printed or electronic), including the supplementary materials (e.g., worksheets) that accompany the textbooks	81 (1.9)	70 (2.6)	60 (1.8)
State county/district/diocese-developed instructional materials	40 (2.1)	29 (2.0)	21 (1.4)
Online units or courses that students work through at their own pace (e.g., i-Ready, Edgenuity)	30 (1.7)	27 (2.5)	8 (1.2)
Lessons or resources from websites that have a subscription fee or per lesson cost (e.g., BrainPOP, Discovery Ed, Teachers Pay Teachers)	28 (1.8)	18 (1.6)	10 (1.0)
Lessons or resources from websites that are free (e.g., Khan Academy, Illustrative Math)	25 (1.7)	24 (2.1)	16 (1.2)

There is no table for MTQ 44.

Table MTQ 45a
Copyright Year of
Instructional Materials Used in Mathematics Classes, by Grade Range

	PERCENT OF CLASSES†		
	ELEMENTARY	MIDDLE	HIGH
2018	1 (0.5)	1 (0.3)	1 (0.4)
2017	3 (1.0)	6 (1.4)	4 (1.0)
2016	6 (1.4)	7 (2.2)	6 (0.8)
2015	20 (2.5)	14 (1.8)	9 (1.2)
2014	19 (2.2)	17 (2.2)	12 (1.8)
2013	7 (1.5)	19 (2.2)	9 (1.3)
2012 or earlier	45 (2.9)	36 (3.2)	60 (2.2)

† Includes only mathematics classes for which teachers indicated in Q41 that they use one or multiple commercially published textbooks.

Table MTQ 45b.1
Publishers of Textbooks Used in Elementary School Mathematics Classes

	PERCENT OF CLASSES [†]
Houghton Mifflin Harcourt	39 (3.2)
Pearson	21 (3.1)
McGraw-Hill Education	19 (2.6)
Great Minds	10 (1.9)
Wiley	3 (0.9)
Curriculum Associates	2 (0.7)
Origo Education	2 (1.0)
Marshall Cavendish Education	1 (0.6)
Sharon Wells Mathematics	1 (0.1)
The Math Learning Center	1 (0.4)
Abeka	0 (0.1)
Alpha Omega Publications	0 (0.0)
BJU Press	0 (0.2)
Carson-Dellosa	0 (0.1)
CPM Educational Program	0 (0.1)
Developing Mathematical Thinking Institute	0 (0.0)
Elmwood Education	0 (0.1)
Georgia Department of Education	0 (0.2)
Heinemann	0 (0.2)
Mentoring Minds	0 (0.3)
Minneapolis Public Schools	0 (0.1)
Odysseyware	0 (0.0)
Pensacola Christian College	0 (0.0)
Sadlier	0 (0.2)
Teaching Strategies	0 (0.2)
Usborne	0 (0.1)
Zearn	0 (0.2)

[†] Includes only elementary mathematics classes for which teachers indicated in Q41 that they use one or multiple commercially published textbooks.

Table MTQ 45b.2
Publishers of Textbooks Used in Middle School Mathematics Classes

	PERCENT OF CLASSES†
Houghton Mifflin Harcourt	37 (3.1)
McGraw-Hill Education	26 (2.8)
Pearson	17 (2.5)
Great Minds	6 (1.7)
Carnegie Learning	3 (1.0)
CPM Educational Program	3 (1.4)
Curriculum Associates	2 (0.5)
Larson Texts	2 (0.8)
Sadlier	2 (0.7)
AgileMind	1 (0.6)
Marshall Cavendish Education	1 (0.3)
The College Board	1 (0.6)
BJU Press	0 (0.2)
Discovery Education	0 (0.1)
Illustrative Mathematics	0 (0.1)
Mathematics Vision Project	0 (0.1)
Mentoring Minds	0 (0.2)
SMc Curriculum	0 (0.3)
Stenhouse Publishers	0 (0.1)
University of Utah	0 (0.2)
Voyager Sopris Learning	0 (0.1)
Wiley	0 (0.3)

† Includes only middle school mathematics classes for which teachers indicated in Q41 that they use one or multiple commercially published textbooks.

Table MTQ 45b.3
Publishers of Textbooks Used in High School Mathematics Classes

	PERCENT OF CLASSES†
Pearson	27 (2.2)
Houghton Mifflin Harcourt	26 (1.9)
McGraw-Hill Education	19 (1.9)
Cengage	9 (1.1)
CPM Educational Program	3 (0.9)
Larson Texts	2 (0.5)
Macmillan	2 (0.4)
Birkh	1 (0.6)
Carnegie Learning	1 (0.4)
eMATHinstruction	1 (0.6)
Great Minds	1 (0.6)
Haese Mathematics	1 (0.2)
Key Curriculum Press	1 (0.4)
Oxford University Press	1 (0.3)
The College Board	1 (0.4)
Wiley	1 (0.3)
Academic Internet Publishers	0 (0.0)
Accelerated Christian Education	0 (0.2)
Algebra Nation	0 (0.1)
AQR Press	0 (0.1)
Barron's Educational Series	0 (0.3)
BJU Press	0 (0.2)
Cambridge	0 (0.2)
Continental Press	0 (0.1)
Cosenza & Associates	0 (0.0)
Council for Economic Education	0 (0.0)
Education Time Courseware, Inc.	0 (0.1)
Hilliard City Schools	0 (0.1)
Kaplan	0 (0.1)
Kendall Hunt	0 (0.3)
Lampo Group	0 (0.2)
Mike Patterson	0 (0.1)
Olympus Publishing	0 (0.1)
Perfection Learning	0 (0.1)
Perfection Learning Corp	0 (0.1)
Polka Dot Publishing	0 (0.1)
Ramsey Education	0 (0.3)
Ramsey Press	0 (0.0)
ResponsiveEd	0 (0.0)
Southern Regional Education Board	0 (0.0)
Springer International Publishing	0 (0.0)
The Dana Center	0 (0.1)

The Princeton Review	0 (0.1)
University of Washington	0 (0.0)
Voyager Sopris Learning	0 (0.1)
Whole Spirit Press	0 (0.1)
Wieser Educational	0 (0.1)
William S. Hart Union High School District	0 (0.2)
XYZ Textbooks	0 (0.0)

† Includes only high school mathematics classes for which teachers indicated in Q41 that they use one or multiple commercially published textbooks.

Table MTQ 46.1
Elementary School Mathematics Classes in Which
Teachers Report the Effect Various Factors Have on Mathematics Instruction

	PERCENT OF CLASSES					
	INHIBITS EFFECTIVE INSTRUCTION		NEUTRAL OR MIXED		PROMOTES EFFECTIVE INSTRUCTION	N/A
	1	2	3	4	5	
Current state standards	2 (0.6)	2 (0.6)	17 (1.7)	23 (1.5)	55 (2.1)	2 (0.5)
District/Diocese and/or school pacing guides	5 (0.9)	8 (1.3)	20 (1.9)	24 (2.1)	39 (2.0)	4 (0.8)
State district/diocese testing/accountability policies†	9 (1.3)	11 (1.6)	33 (2.6)	20 (1.8)	22 (1.6)	4 (1.0)
Textbook selection policies	7 (1.2)	10 (1.5)	35 (2.3)	18 (1.7)	20 (1.5)	10 (1.5)
Teacher evaluation policies	4 (0.9)	7 (1.2)	38 (2.2)	21 (1.6)	26 (2.0)	5 (1.0)
Students' prior knowledge and skills	5 (1.2)	9 (1.5)	15 (1.7)	20 (1.8)	50 (2.1)	1 (0.3)
Students' motivation, interest, and effort in mathematics	5 (1.1)	8 (1.3)	15 (1.8)	23 (2.1)	47 (2.2)	0 (0.2)
Parent/guardian expectations and involvement	11 (1.8)	12 (1.5)	23 (1.8)	25 (2.2)	27 (2.2)	2 (0.7)
Principal support	2 (0.7)	3 (0.9)	17 (1.6)	23 (2.1)	54 (2.6)	1 (0.4)
Amount of time for you to plan, individually and with colleagues	5 (1.0)	8 (1.4)	16 (1.6)	21 (1.9)	49 (2.6)	1 (0.3)
Amount of time available for your professional development	6 (1.0)	10 (1.2)	25 (2.0)	22 (2.0)	36 (2.1)	2 (0.5)
Amount of instructional time devoted to mathematics	2 (0.6)	3 (0.7)	12 (1.5)	23 (2.5)	60 (2.4)	1 (0.5)

† This item was presented only to public and Catholic schools.

Table MTQ 46.2
Middle School Mathematics Classes in Which
Teachers Report the Effect Various Factors Have on Mathematics Instruction

	PERCENT OF CLASSES					
	INHIBITS EFFECTIVE INSTRUCTION		NEUTRAL OR MIXED		PROMOTES EFFECTIVE INSTRUCTION	N/A
	1	2	3	4	5	
Current state standards	2 (0.6)	4 (0.8)	24 (2.8)	25 (2.0)	44 (2.9)	1 (0.4)
District/Diocese and/or school pacing guides	4 (1.2)	5 (0.9)	27 (2.4)	27 (2.2)	26 (2.5)	11 (1.8)
State district/diocese testing/accountability policies†	11 (2.1)	13 (1.8)	34 (2.9)	20 (2.3)	18 (2.4)	4 (1)
Textbook selection policies	9 (1.8)	11 (1.8)	38 (2.8)	15 (2.1)	14 (1.7)	13 (2.3)
Teacher evaluation policies	4 (0.8)	8 (1.3)	40 (2.6)	20 (2.0)	21 (2.3)	7 (1.7)
Students' prior knowledge and skills	13 (2.0)	14 (1.7)	15 (1.6)	25 (2.2)	33 (2.3)	2 (1.4)
Students' motivation, interest, and effort in mathematics	12 (2.1)	15 (1.6)	16 (1.8)	22 (2.2)	32 (2.3)	2 (1.5)
Parent/guardian expectations and involvement	10 (1.8)	16 (1.7)	26 (1.9)	23 (2.2)	21 (2)	4 (1.6)
Principal support	0 (0.2)	4 (1.4)	20 (1.8)	26 (2.4)	46 (2.5)	3 (0.8)
Amount of time for you to plan, individually and with colleagues	4 (1.2)	7 (1.6)	15 (2)	25 (2.5)	45 (2.6)	3 (0.9)
Amount of time available for your professional development	4 (1.5)	10 (1.4)	31 (2.8)	26 (2.3)	27 (2.8)	2 (0.8)

† This item was presented only to public and Catholic schools.

Table MTQ 46.3
High School Mathematics Classes in Which
Teachers Report the Effect Various Factors Have on Mathematics Instruction

	PERCENT OF CLASSES					
	INHIBITS EFFECTIVE INSTRUCTION		NEUTRAL OR MIXED		PROMOTES EFFECTIVE INSTRUCTION	N/A
	1	2	3	4	5	
Current state standards	3 (0.6)	4 (0.9)	29 (1.5)	28 (1.7)	30 (1.8)	6 (0.9)
District/Diocese and/or school pacing guides	3 (0.9)	5 (0.9)	26 (1.7)	24 (2.0)	26 (1.9)	16 (1.4)
State district/diocese testing/accountability policies†	7 (0.9)	13 (1.7)	34 (2.1)	17 (1.4)	17 (1.6)	11 (1.2)
Textbook selection policies	7 (1.1)	6 (0.9)	35 (2.0)	20 (1.6)	16 (1.6)	16 (1.5)
Teacher evaluation policies	5 (0.9)	7 (0.7)	38 (2.2)	24 (1.6)	20 (1.7)	7 (1.0)
College entrance requirements	1 (0.5)	3 (0.5)	31 (2.2)	27 (1.9)	27 (1.9)	10 (1.3)
Students' prior knowledge and skills	10 (1.4)	17 (1.5)	16 (1.4)	24 (1.8)	32 (1.9)	0 (0.1)
Students' motivation, interest, and effort in mathematics	12 (1.2)	17 (1.5)	18 (1.6)	22 (1.5)	30 (1.5)	0 (0.2)
Parent/guardian expectations and involvement	9 (1.2)	14 (1.4)	35 (1.9)	21 (1.6)	18 (1.5)	3 (0.5)
Principal support	1 (0.4)	5 (0.8)	22 (2.0)	26 (1.7)	42 (2.0)	3 (0.6)
Amount of time for you to plan, individually and with colleagues	6 (1.0)	7 (1.0)	18 (1.4)	25 (1.9)	43 (1.8)	2 (0.4)
Amount of time available for your professional development	5 (1.0)	11 (1.4)	29 (1.8)	27 (1.7)	26 (1.8)	3 (0.7)

† This item was presented only to public and Catholic schools.

Table MTQ 47
Focus of the Most Recently Completed Mathematics Unit, by Grade Range

	PERCENT OF CLASSES		
	ELEMENTARY	MIDDLE	HIGH
Number and Operations	59 (2.0)	21 (2.0)	2 (0.4)
Measurement and Data Representation	24 (1.8)	5 (0.9)	1 (0.3)
Algebra	3 (0.6)	40 (2.1)	48 (1.3)
Geometry	14 (1.3)	21 (1.8)	22 (1.3)
Probability	0 (0.2)	5 (1.1)	2 (0.4)
Statistics	0 (0.0)	7 (1.2)	5 (0.7)
Trigonometry	0 ---†	0 (0.2)	11 (0.9)
Calculus	0 ---†	0 ---†	8 (0.7)

† No mathematics teachers at this grade range in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

Table MTQ 48
Most Recent Mathematics Unit Based Primarily on Any
Commercially Published Textbook or State/County/District-Developed Materials

	PERCENT OF CLASSES†
Elementary	81 (1.5)
Middle	70 (2.3)
High	73 (1.8)

† Includes only mathematics classes for which teachers indicated in Q41 that they use commercially published textbooks or state/county/district/diocese-developed units or lessons more than once a month.

Table MTQ 49.1
Ways Instructional Materials Were Used in the Most
Recently Completed Unit in Elementary School Mathematics Classes

	PERCENT OF CLASSES†				
	NOT AT ALL		SOMEWHAT		TO A GREAT EXTENT
	1	2	3	4	5
I used these materials to guide the structure and content emphasis of the unit.	0 (0.2)	1 (0.4)	11 (1.5)	29 (2.5)	59 (2.7)
I picked what is important from these materials and skipped the rest.	17 (1.4)	14 (1.6)	20 (1.9)	27 (2.1)	22 (1.7)
I incorporated activities (e.g., problems, investigations, readings) from other sources to supplement what these materials were lacking.	5 (0.9)	6 (1.0)	20 (1.4)	35 (2.2)	33 (2.2)
I modified activities from these materials.	4 (0.8)	8 (1.1)	27 (2.0)	36 (1.7)	25 (1.9)

† Includes only elementary mathematics classes for which teachers responded yes in Q48.

Table MTQ 49.2
Ways Instructional Materials Were Used in the Most
Recently Completed Unit in Middle School Mathematics Classes

	PERCENT OF CLASSES†				
	NOT AT ALL		SOMEWHAT		TO A GREAT EXTENT
	1	2	3	4	5
I used these materials to guide the structure and content emphasis of the unit.	0 (0.2)	1 (0.4)	16 (1.8)	33 (2.6)	50 (2.9)
I picked what is important from these materials and skipped the rest.	10 (1.6)	13 (1.7)	25 (2.8)	31 (2.8)	22 (2.1)
I incorporated activities (e.g., problems, investigations, readings) from other sources to supplement what these materials were lacking.	7 (1.7)	7 (1.7)	22 (2.3)	36 (2.5)	29 (2.4)
I modified activities from these materials.	3 (0.9)	6 (1.1)	29 (2.8)	39 (2.6)	23 (2.0)

† Includes only middle school mathematics classes for which teachers responded yes in Q48.

Table MTQ 49.3
Ways Instructional Materials Were Used in the Most Recently Completed Unit in High School Mathematics Classes

	PERCENT OF CLASSES†				
	NOT AT ALL		SOMEWHAT		TO A GREAT EXTENT
	1	2	3	4	5
I used these materials to guide the structure and content emphasis of the unit.	1 (0.2)	1 (0.3)	17 (1.5)	32 (2.1)	49 (2.4)
I picked what is important from these materials and skipped the rest.	12 (1.5)	14 (1.3)	23 (1.5)	30 (1.8)	22 (1.5)
I incorporated activities (e.g., problems, investigations, readings) from other sources to supplement what these materials were lacking.	6 (0.7)	9 (1.0)	21 (1.8)	33 (2.1)	32 (2.2)
I modified activities from these materials.	5 (0.8)	8 (0.9)	26 (2.1)	39 (2.0)	22 (1.4)

† Includes only high school mathematics classes for which teachers responded yes in Q48.

Table MTQ 50.1
Reasons Parts of the Instructional Materials Were Skipped in Elementary School Mathematics Classes

	PERCENT OF CLASSES†		
	NOT A FACTOR	A MINOR FACTOR	A MAJOR FACTOR
The mathematical ideas addressed in the activities I skipped are not included in my pacing guide/standards.	35 (2.8)	33 (2.4)	32 (3.2)
I did not have the materials needed to implement the activities I skipped.	74 (2.3)	17 (1.9)	9 (1.5)
I did not have the knowledge needed to implement the activities I skipped.	91 (2.5)	6 (2.0)	3 (1.1)
The activities I skipped were too difficult for my students.	62 (2.8)	27 (2.2)	11 (1.6)
My students already knew the mathematical ideas or were able to learn them without the activities I skipped.	33 (2.9)	35 (2.9)	32 (2.8)
I have different activities for those mathematical ideas that work better than the ones I skipped.	20 (2.2)	33 (2.7)	47 (2.8)
I did not have enough instructional time for the activities I skipped.	39 (3.1)	40 (2.9)	21 (2.6)

† Includes only elementary school mathematics classes for which teachers responded yes in Q48 and indicated in Q49 that they “picked what was important from these materials and skipped the rest” to any extent.

Table MTQ 50.2
Reasons Parts of the Instructional Materials
Were Skipped in Middle School Mathematics Classes

	PERCENT OF CLASSES [†]		
	NOT A FACTOR	A MINOR FACTOR	A MAJOR FACTOR
The mathematical ideas addressed in the activities I skipped are not included in my pacing guide/standards.	28 (3.1)	34 (3.3)	38 (3.5)
I did not have the materials needed to implement the activities I skipped.	73 (3.0)	21 (2.7)	6 (1.3)
I did not have the knowledge needed to implement the activities I skipped.	89 (2.4)	10 (2.1)	2 (0.7)
The activities I skipped were too difficult for my students.	56 (3.6)	33 (3.2)	12 (2.0)
My students already knew the mathematical ideas or were able to learn them without the activities I skipped.	41 (3.5)	37 (3.7)	22 (3.1)
I have different activities for those mathematical ideas that work better than the ones I skipped.	20 (2.5)	37 (2.9)	44 (3.3)
I did not have enough instructional time for the activities I skipped.	29 (3.1)	40 (3.4)	31 (3.1)

[†] Includes only middle school mathematics classes for which teachers responded yes in Q48 and indicated in Q49 that they “picked what was important from these materials and skipped the rest” to any extent.

Table MTQ 50.3
Reasons Parts of the Instructional Materials
Were Skipped in High School Mathematics Classes

	PERCENT OF CLASSES [†]		
	NOT A FACTOR	A MINOR FACTOR	A MAJOR FACTOR
The mathematical ideas addressed in the activities I skipped are not included in my pacing guide/standards.	27 (2.1)	35 (2.8)	38 (2.6)
I did not have the materials needed to implement the activities I skipped.	76 (2.2)	19 (2.0)	5 (1.2)
I did not have the knowledge needed to implement the activities I skipped.	91 (1.6)	8 (1.5)	1 (0.5)
The activities I skipped were too difficult for my students.	45 (2.5)	39 (2.7)	17 (2.1)
My students already knew the mathematical ideas or were able to learn them without the activities I skipped.	46 (2.5)	35 (2.6)	18 (1.6)
I have different activities for those mathematical ideas that work better than the ones I skipped.	26 (2.2)	37 (2.7)	37 (2.3)
I did not have enough instructional time for the activities I skipped.	31 (2.4)	34 (2.6)	36 (2.6)

[†] Includes only high school mathematics classes for which responded yes in Q48 and indicated in Q49 that they “picked what was important from these materials and skipped the rest” to any extent.

Table MTQ 51.1
Reasons Why the Instructional Materials Were
Supplemented in Elementary School Mathematics Classes

	PERCENT OF CLASSES†		
	NOT A FACTOR	A MINOR FACTOR	A MAJOR FACTOR
My pacing guide indicated that I should use supplemental activities.	55 (3.0)	30 (2.8)	15 (2.4)
Supplemental activities were needed to prepare students for standardized tests.	40 (2.9)	36 (2.7)	25 (2.3)
Supplemental activities were needed to provide students with additional practice.	5 (1.0)	32 (2.2)	63 (2.3)
Supplemental activities were needed so students at different levels of achievement could increase their understanding of the ideas targeted in each activity.	6 (1.3)	24 (2.7)	69 (2.5)
I had additional activities that I liked.	20 (2.0)	40 (2.6)	41 (2.2)

† Includes only elementary school mathematics classes for which teachers responded yes in Q48 and indicated in Q49 that they “incorporated activities (e.g., problems, investigations, readings) from other sources to supplement what these materials were lacking” to any extent.

Table MTQ 51.2
Reasons Why the Instructional Materials Were
Supplemented in Middle School Mathematics Classes

	PERCENT OF CLASSES†		
	NOT A FACTOR	A MINOR FACTOR	A MAJOR FACTOR
My pacing guide indicated that I should use supplemental activities.	63 (3.7)	25 (3.0)	12 (2.3)
Supplemental activities were needed to prepare students for standardized tests.	28 (3.4)	43 (3.2)	28 (2.9)
Supplemental activities were needed to provide students with additional practice.	6 (1.3)	26 (3.0)	68 (3.1)
Supplemental activities were needed so students at different levels of achievement could increase their understanding of the ideas targeted in each activity.	3 (1.0)	32 (3.2)	65 (3.2)
I had additional activities that I liked.	15 (2.3)	35 (2.9)	50 (3.2)

† Includes only middle school mathematics classes for which teachers responded yes in Q48 and indicated in Q49 that they “incorporated activities (e.g., problems, investigations, readings) from other sources to supplement what these materials were lacking” to any extent.

Table MTQ 51.3
Reasons Why the Instructional Materials Were
Supplemented in High School Mathematics Classes

	PERCENT OF CLASSES†		
	NOT A FACTOR	A MINOR FACTOR	A MAJOR FACTOR
My pacing guide indicated that I should use supplemental activities.	59 (2.6)	31 (2.3)	10 (1.7)
Supplemental activities were needed to prepare students for standardized tests.	44 (2.6)	34 (2.7)	22 (2.0)
Supplemental activities were needed to provide students with additional practice.	9 (1.6)	31 (1.9)	60 (2.2)
Supplemental activities were needed so students at different levels of achievement could increase their understanding of the ideas targeted in each activity.	11 (1.9)	34 (2.1)	54 (2.3)
I had additional activities that I liked.	20 (1.9)	43 (2.2)	37 (2.2)

† Includes only high school mathematics classes for which teachers responded yes in Q48 and indicated in Q49 that they “incorporated activities (e.g., problems, investigations, readings) from other sources to supplement what these materials were lacking” to any extent.

Table MTQ 52.1
Reasons Why Instructional Materials
Were Modified in Elementary School Mathematics Classes

	PERCENT OF CLASSES†		
	NOT A FACTOR	A MINOR FACTOR	A MAJOR FACTOR
I did not have the necessary materials/supplies for the original activities.	73 (2.4)	18 (1.9)	9 (2.0)
The original activities were too difficult conceptually for my students.	50 (3.1)	34 (2.6)	16 (1.8)
The original activities were too easy conceptually for my students.	48 (3.2)	41 (2.9)	11 (1.6)
I did not have enough instructional time to implement the activities as designed.	48 (2.7)	34 (2.7)	19 (2.2)
The original activities were too structured for my students.	68 (2.4)	25 (2.3)	7 (1.3)
The original activities were not structured enough for my students.	69 (2.5)	25 (2.2)	6 (1.2)

† Includes only elementary school mathematics classes for which teachers responded yes in Q48 and indicated in Q49 that they “modified activities from these materials” to any extent.

Table MTQ 52.2
Reasons Why Instructional Materials
Were Modified in Middle School Mathematics Classes

	PERCENT OF CLASSES†		
	NOT A FACTOR	A MINOR FACTOR	A MAJOR FACTOR
I did not have the necessary materials/supplies for the original activities.	71 (3.0)	24 (2.8)	5 (1.4)
The original activities were too difficult conceptually for my students.	45 (3.2)	38 (3.0)	18 (2.4)
The original activities were too easy conceptually for my students.	56 (3.2)	35 (2.9)	9 (1.6)
I did not have enough instructional time to implement the activities as designed.	32 (2.7)	40 (2.8)	28 (3.2)
The original activities were too structured for my students.	65 (3.2)	29 (3.1)	6 (1.5)
The original activities were not structured enough for my students.	61 (3.1)	32 (3.4)	7 (1.4)

† Includes only middle school mathematics classes for which teachers responded yes in Q48 and indicated in Q49 that they “modified activities from these materials” to any extent.

Table MTQ 52.3
Reasons Why Instructional Materials
Were Modified in High School Mathematics Classes

	PERCENT OF CLASSES†		
	NOT A FACTOR	A MINOR FACTOR	A MAJOR FACTOR
I did not have the necessary materials/supplies for the original activities.	72 (2.0)	24 (2.0)	5 (1.0)
The original activities were too difficult conceptually for my students.	46 (2.8)	38 (2.5)	16 (2.0)
The original activities were too easy conceptually for my students.	62 (2.1)	31 (2.2)	7 (1.4)
I did not have enough instructional time to implement the activities as designed.	42 (2.6)	34 (2.3)	23 (1.8)
The original activities were too structured for my students.	69 (2.2)	27 (2.2)	5 (1.4)
The original activities were not structured enough for my students.	65 (2.0)	30 (2.1)	5 (1.0)

† Includes only high school mathematics classes for which responded yes in Q48 and indicated in Q49 that they “modified activities from these materials” to any extent.

Table MTQ 53.1
Elementary School Mathematics Classes Taught by Teachers
Feeling Prepared for Each of a Number of Tasks in the Most Recent Unit

	PERCENT OF CLASSES			
	NOT ADEQUATELY PREPARED	SOMEWHAT PREPARED	FAIRLY WELL PREPARED	VERY WELL PREPARED
Anticipate difficulties that students will have with particular mathematical ideas and procedures in this unit	1 (0.3)	11 (1.2)	45 (1.7)	43 (1.7)
Find out what students thought or already knew about the key mathematical ideas	1 (0.4)	13 (1.5)	44 (2.1)	42 (2.1)
Implement the instructional materials (e.g., mathematics textbook) to be used during this unit	1 (0.3)	8 (1.1)	35 (1.6)	55 (1.8)
Monitor student understanding during this unit	1 (0.3)	4 (0.8)	35 (1.6)	60 (1.8)
Assess student understanding at the conclusion of this unit	0 (0.2)	4 (0.8)	31 (1.7)	64 (1.9)

Table MTQ 53.2
Middle School Mathematics Classes Taught by Teachers
Feeling Prepared for Each of a Number of Tasks in the Most Recent Unit

	PERCENT OF CLASSES			
	NOT ADEQUATELY PREPARED	SOMEWHAT PREPARED	FAIRLY WELL PREPARED	VERY WELL PREPARED
Anticipate difficulties that students will have with particular mathematical ideas and procedures in this unit	1 (0.3)	8 (1.0)	42 (2.1)	50 (2.1)
Find out what students thought or already knew about the key mathematical ideas	1 (0.4)	12 (1.4)	49 (2.3)	38 (2.2)
Implement the instructional materials (e.g., mathematics textbook) to be used during this unit	2 (0.7)	7 (1.0)	36 (2.0)	55 (2.0)
Monitor student understanding during this unit	0 (0.0)	6 (1.1)	37 (1.7)	57 (1.9)
Assess student understanding at the conclusion of this unit	0 (0.1)	4 (1.1)	34 (2.1)	62 (2.3)

Table MTQ 53.3
High School Mathematics Classes Taught by Teachers
Feeling Prepared for Each of a Number of Tasks in the Most Recent Unit

	PERCENT OF CLASSES			
	NOT ADEQUATELY PREPARED	SOMEWHAT PREPARED	FAIRLY WELL PREPARED	VERY WELL PREPARED
Anticipate difficulties that students will have with particular mathematical ideas and procedures in this unit	0 (0.2)	7 (0.9)	33 (1.6)	59 (1.6)
Find out what students thought or already knew about the key mathematical ideas	1 (0.2)	12 (0.9)	40 (1.6)	47 (1.5)
Implement the instructional materials (e.g., mathematics textbook) to be used during this unit	1 (0.4)	7 (0.8)	30 (1.5)	61 (1.6)
Monitor student understanding during this unit	0 (0.1)	4 (0.6)	36 (1.6)	60 (1.6)
Assess student understanding at the conclusion of this unit	0 (0.2)	4 (0.5)	28 (1.4)	68 (1.4)

Table MTQ 54
Duration of the Most Recent Mathematics Lesson

	AVERAGE NUMBER OF MINUTES
Elementary	65 (0.8)
Middle	57 (1.0)
High	61 (0.7)

Table MTQ 55
Average Percentage of Time Spent on Different Activities in the Most Recent Mathematics Lesson, by Grade Range

	AVERAGE PERCENT OF CLASS TIME		
	ELEMENTARY	MIDDLE	HIGH
Non-instructional activities (e.g., attendance taking, interruptions)	8 (0.3)	11 (0.3)	10 (0.2)
Whole class activities (e.g., lectures, explanations, discussions)	35 (0.7)	39 (0.8)	42 (0.7)
Small group work	33 (0.8)	28 (1.0)	26 (0.8)
Students working individually (e.g., reading textbooks, completing worksheets, taking a test or quiz)	24 (0.6)	22 (0.7)	22 (0.7)

Table MTQ 56
Mathematics Classes Participating in Various Activities in the Most Recent Lesson, by Grade Range

	PERCENT OF CLASSES		
	ELEMENTARY	MIDDLE	HIGH
Teacher explaining a mathematical idea to the whole class	89 (1.3)	88 (1.6)	91 (1.0)
Teacher conducting a demonstration while students watched	78 (1.9)	65 (2.1)	64 (1.3)
Whole class discussion	87 (1.5)	78 (1.5)	70 (1.4)
Students working in small groups	87 (1.4)	83 (1.7)	78 (1.2)
Students completing textbook/worksheet problems	77 (1.6)	76 (1.7)	78 (1.4)
Students doing hands-on/manipulative activities	65 (2.1)	24 (1.8)	17 (1.5)
Students reading about mathematics	17 (1.4)	15 (1.5)	15 (1.3)
Students writing about mathematics (does not include students taking notes)	27 (1.6)	19 (1.6)	14 (1.1)
Practicing for standardized tests	13 (1.7)	17 (1.5)	15 (1.0)
Test or quiz	18 (1.8)	15 (1.5)	19 (1.2)
None of the above	0 ---†	0 (0.1)	0 (0.1)

† No elementary school mathematics teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

Table MTQ 57
Sex of Mathematics Teachers, by Grade Range

	PERCENT OF TEACHERS		
	ELEMENTARY	MIDDLE	HIGH
Female	94 (1.0)	70 (2.2)	60 (1.5)
Male	6 (1.0)	30 (2.2)	40 (1.5)
Other	0 (0.1)	0 ---†	0 (0.1)

† No middle school mathematics teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

Table MTQ 58
Mathematics Teachers of Hispanic or Latino Origin

	PERCENT OF TEACHERS
Elementary	10 (1.4)
Middle	8 (1.5)
High	7 (1.1)

Table MTQ 59
Race of Mathematics Teachers, by Grade Range

	PERCENT OF TEACHERS		
	ELEMENTARY	MIDDLE	HIGH
American Indian or Alaska Native	1 (0.5)	1 (0.5)	2 (0.3)
Asian	3 (0.7)	3 (0.8)	4 (0.6)
Black or African American	7 (1.0)	8 (1.2)	5 (0.8)
Native Hawaiian or Other Pacific Islander	0 (0.3)	1 (0.8)	1 (0.3)
White	89 (1.3)	89 (1.4)	91 (1.0)

Table MTQ 60
Age of Mathematics Teachers

	MEAN AGE OF TEACHERS
Elementary	42 (0.4)
Middle	42 (0.5)
High	42 (0.3)