

# 5

## Building and Maintaining Effective Classrooms

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Effective classrooms maintain a culture of respect among students as well as between the teacher and students. This section describes teaching strategies that are particularly useful for building and maintaining an effective *Everyday Mathematics* classroom. These include facilitating rich mathematical discussions, employing a variety of grouping strategies, promoting productive collaboration, integrating hands-on activities and games in meaningful ways, thoughtfully incorporating technology into mathematics instruction, and capitalizing on mathematics opportunities throughout the day.

### 5.1 Facilitating Discussions

Talking about mathematics is an essential part of doing and learning mathematics. Discussions in which students share their reasoning and problem-solving strategies offer opportunities for students to clarify their own thinking and learn from one another.

### 5.1.1 Sharing Students' Strategies and Solutions

Teachers should encourage students to share their strategies, both correct and incorrect, as they solve number stories and other problems. Students can demonstrate or record their solutions for the class, illustrating their strategies with pictures, manipulatives, eTools, or number models. Students develop a better understanding of mathematical processes when asked to think and strategize, rather than when they are merely asked to repeat the steps of a particular procedure or solution strategy. When sharing takes place in a receptive and respectful environment, students learn that inventing innovative ways to solve problems is an important part of mathematics. Students have opportunities to practice sharing their own strategies and critiquing each other's ideas throughout *Everyday Mathematics*.

In effective classroom discussions, all students are engaged in the discussion, and students learn from one another by listening and responding respectfully to their peers' successes and mistakes. The structures and instructional strategies described below support effective classroom discussions.

#### Developing Guidelines for Discussion

To establish a positive learning environment, students can brainstorm a list of guidelines for discussion. Teachers can elicit suggestions from the class and include items they feel are important. Throughout the year, the list can be expanded during any group discussion. Teachers can display the rules and refer students to them routinely at the beginning of group work. Sample guidelines might include the following:

- Share ideas and strategies respectfully.
- Work to solve problems together.
- It is OK to make mistakes and learn from them.
- We can change our minds about how to solve a problem.
- Ask questions of other students and our teacher.

#### Promoting Participation

When presenting a new problem or question, it is beneficial for teachers to first give students time to *think* independently. Then students can *pair* (or *turn and talk*) to communicate and compare their thoughts with a classmate, refine their thinking if necessary, and then *share* with the whole class. This practice increases student participation and helps them think critically and communicate ideas in multiple settings and situations.

## Sentence Frames

Students need practice giving constructive criticism and supporting each other's ideas. Early in the year, students will benefit from hearing and seeing sentence frames to help them react to each other's ideas. Examples include:

- I noticed \_\_\_\_\_.
- I don't understand \_\_\_\_\_.
- I like how you \_\_\_\_\_.
- I wonder why \_\_\_\_\_.
- Could you explain \_\_\_\_\_?
- I agree because \_\_\_\_\_.
- I disagree because \_\_\_\_\_.
- I also think \_\_\_\_\_.

Teachers can model or have students role-play situations using sentence frames based on one or more of the guidelines for discussion. For example, students can role-play how to learn from a mistake in their own work using a simple math problem as an example (such as,  $2 + 1 = 21$ ). Students can use sentence frames and other appropriate language to discuss the mistake and what can be learned from it.

## Learning from Correct and Incorrect Answers

Discussing students' solutions can be extremely valuable, but teachers should take care to ensure that students are not embarrassed if their answers are incorrect. Students with correct answers are usually happy to share their models and strategies with the class, but discussing incorrect answers can be equally, if not more, instructive. Here are several suggestions for dealing with incorrect strategies and solutions:

- Emphasize that it is OK to make mistakes. Errors are inevitable and can be very productive. What is not OK is failing to learn from one's mistakes.
- Frame discussions of incorrect solutions by saying *Some students did \_\_\_\_\_*. [Describe the incorrect approach.] *Why do you think they did that? How would you help them see their mistake?*
- Emphasize that students using different methods will often arrive at different answers. Encourage students to work together to understand whether more than one correct answer is possible or whether only one correct answer is possible and other answers need to be revised.
- Compare and contrast different strategies and help students see advantages and disadvantages of each. An incorrect method may have some good ideas that can be used to improve another method.

With repeated practice, students will become comfortable sharing their strategies. They will learn to talk about them freely and fluently, listen to one another attentively, and revise their own strategies and adopt new ones based on the discussions.

Particular focus is placed on these discussion strategies in the Open Response and Reengagement lessons, but teachers can and should use these instructional strategies in their daily *Everyday Mathematics* lessons.

For information on how *Everyday Mathematics* helps teachers make content accessible to English language learners at various stages of proficiency, see Section 10.5 *Working with English Language Learners in Everyday Mathematics*.

#### Academic Language Development

Build on children's understanding of the meaning of *difference* in everyday settings to help them construct their understanding of its mathematical meaning. Show children two different objects and ask: *What are some of the differences between the two objects?* Then show them two sets of objects unequal in number and ask: *Using a number, how would you describe the difference between these two sets of objects?*

Academic Language Development note, Grade 2 Lesson 3-6

For more information about leading effective whole-class discussions, see Section 5.1 *Facilitating Discussions*.

## 5.1.2 Academic Language Development

All students are academic language learners, not just those learning to speak English. *Academic language* is the formalized language of school that is different in structure and vocabulary from everyday spoken English. It is found in textbooks, standards, and tests and is used to define terms, form concepts, and construct knowledge. Some students may not hear academic language outside of school. Unless teachers explicitly teach it, these students will not be able to participate fully in classroom discussion and may struggle in later years, when they are required to understand and use this language. In order for students to participate fully in mathematics discussions, they must learn the academic language of mathematics.

Academic language is used for many reasons:

- **to seek information:** who, what, when, where, how
- **to inform:** recount information or retell
- **to compare:** explain how two ideas are alike
- **to order:** describe timeline, continuum, or cycle
- **to classify:** describe organizing principles
- **to analyze:** describe features or main ideas
- **to infer:** generate hypotheses to suggest causes or outcomes
- **to justify and persuade:** provide evidence arguing why an idea is important
- **to solve problems:** describe problem-solving procedures
- **to synthesize:** summarize information cohesively
- **to evaluate:** identify criteria, explain priorities, and so on

*Everyday Mathematics* lessons highlight new vocabulary for teachers to introduce and model during the lesson as well as academic terms that may be particularly difficult for students. Suggestions to help students understand these terms and their uses are often conveyed in Academic Language Development notes, which are meant for most, if not all, students. For example, most Kindergarten students need to learn how the terms *minus*, *subtract*, and *remove* can be used interchangeably to mean *taking away*. Subtraction lessons in Kindergarten include suggestions for helping students begin to understand and use academic language to describe subtraction.

## 5.2 Organizing Students in Small Groups

Multiple grouping strategies are emphasized throughout *Everyday Mathematics* so teachers can vary and tailor instruction to the needs of the class and the particulars of the activity. Each lesson activity recommends one or more of the following options: Whole Class, Small Group, Partner, or Independent.

WHOLE CLASS	SMALL GROUP	PARTNER	INDEPENDENT
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These options make the program flexible enough to work well in many classroom settings. This section outlines ideas for managing a classroom using a variety of small-group and partnership settings. Independent work is also important and may be suggested as appropriate in Focus activities, and is often recommended for Math Boxes, Progress Checks, and Interim Assessments.

## 5.2.1 Collaborative Groupings

A pervasive element of *Everyday Mathematics* is the use of collaborative learning. Working collaboratively in classrooms creates an atmosphere for sharing ideas and problem-solving strategies and prepares students for real-life situations in which people often share responsibilities with others and must work together toward common goals.

Research suggests that when solving problems, students' strategic thinking improves when they observe and interact with peers who are more advanced, and when these interactions are accompanied by reflection and opportunities to practice new reasoning skills. As students encounter different ways of solving problems from peers, they learn to interpret and evaluate each other's point of view and engage in discussions that address strengths and weaknesses of a variety of approaches.

Because *Everyday Mathematics* provides activities for various groupings, teachers may want to plan seating arrangements that allow students to transition between whole-class, small-group, and independent work efficiently and with minimal disruption.

In order to create functional collaborative groups, teachers should be aware of individual students' levels of skill and understanding and monitor students' progress throughout the year. Students may excel in some areas of mathematics, but have difficulties in others. Teachers should be flexible in how they view students' achievement levels and frequently gather data about students' abilities and learning.

Teachers should consider many factors, both social and academic, when organizing their classes into groups. In addition to using their own knowledge of each student's skill level, teachers may find the following classroom-tested information helpful:

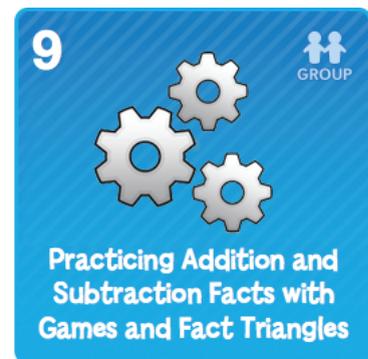
- Flexible grouping will help keep students' interests high and make differentiation possible. It also allows students to work with many other students in the class.
- Both heterogeneous and homogeneous groupings can be useful learning situations for students. Teachers should aim to strike a balance throughout their instructional day to have both mixed groups and homogenous groups.
- In a mixed-ability, or heterogeneous group, students can learn from each other. Students have the opportunity to hear the thoughts and ideas of their peers. Those with different ideas for solving a problem can clarify their strategies and reasoning by articulating them to someone else.
- In a homogeneous group, the work can be customized to meet the needs of all in the group. This can help with differentiated learning.

When using digital versions of the materials

### Guidelines and Principles for Partnerships and Small-Group Work

A class discussion at the beginning of the school year to establish partner and small-group norms will set the stage for effective group work. This is important even if students have worked in groups before.

For more information about tools within *Everyday Mathematics* to help teachers gather data and make informed decisions to meet students' needs, see Section 10.3.2 *Effective Differentiation Begins with Good Assessment Practices*.



Some activities in the Student Learning Center allow teachers or students to create collaborative groups.

For more information about grouping, see Section 10 *Differentiating Instruction with Everyday Mathematics*.

This discussion can begin with development of guidelines for discussion in partnerships and groups, similar to those described in Section 5.1.1 *Sharing Student's Strategies and Solutions*. The discussion and guidelines can include three basic Partnership Principles for constructive partner and group interaction: *Guide*, *Check*, and *Respond*. Teachers may wish to post the guidelines and principles in the classroom so students can refer to them throughout the year.

### Partnership Principles

#### Guide

- Help and demonstrate what to do without telling or doing everything yourself.
- Take turns.
- Choose only one student to get help from the teacher if the group needs it.

#### Check

- Pay attention and listen to others.
- Think about whether another student's idea could also be correct, even if it is different from your own.
- Remember that it is OK to make mistakes, and help fellow group members find correct responses.

#### Respond

- Respond positively in a helpful way if someone makes a mistake. (This may include a list of phrases such as, *Try again*, *Good try*, *Close*, and *Can you explain your thinking?*)
- Let others know when they are doing a good job or have a good idea.
- Disagree with others' ideas respectfully, and build on the good parts of their ideas whenever possible.

### Duties of Group Members

Each group member may be assigned a specific role that changes daily or weekly. Some roles can be eliminated or modified depending on the activity, grade level, and whether or not an activity is completed digitally. Younger students can also learn to “grow into” these roles and responsibilities with proper modeling and support. Possible roles and duties include:

- **Recorder** Writes (or draws) group answers and strategies; can also act as the reporter for the group.
- **Reader** Reads problems, text selections, directions, and so on.
- **Facilitator** Makes sure everyone is on task and encourages participation from each group member, with no one monopolizing the activity. Uses positive encouragement such as the following:

*We need to work on Problem 3.*

*Which step is next?*

\_\_\_\_\_, *how would you do this?*

*Do you agree, \_\_\_\_\_?*

*What do you think, \_\_\_\_\_?*

- **Materials/Supply Handler** Gathers and returns all materials needed for group activities.
- **Summarizer** Sums up group solutions, opinions, or findings.

## Duties of the Teacher

Some teachers also choose to share specific teacher roles, such as:

- explaining the activity;
- monitoring groups for appropriate behavior and making sure they are working in the right direction;
- answering group questions and assisting as necessary;
- assessing group or individual skills; and
- providing closure for each lesson or activity.

## 5.3 Using Games

Games are an integral part of *Everyday Mathematics*. They are an enjoyable way for students to practice number skills, build fluency, and develop strategic thinking. Games provide opportunities for the exploration and practice of mathematical skills and are a far more effective learning experience than tedious drills and worksheets. Some games are designed to allow for playful, repetitive practice that will develop fluency and confidence with a particular skill. Others are designed to facilitate exploration of a particular concept or help students learn to strategize.

All students need at least 60 minutes per week to play games as part of the distributed practice built into the curriculum. It is especially important for those who work at a slower pace or encounter more difficulty than their classmates. If students are only allowed to play games after finishing other work, those who could benefit the most from playful practice will have fewer opportunities.

Numbers or concepts can be varied within games to make them easier or more challenging or to emphasize different skills. For example, in Kindergarten, students can play *Monster Squeeze* with different numbers and ranges and with or without a number line to keep the game challenging and interesting. Game modifications are provided for all games introduced in lessons on the Differentiation Support pages found online in the Teacher Center.

Games can be integrated into the classroom in any or all of the following ways:

- Teachers can include games as part of a daily routine by devoting the first or last 10 minutes of each math class to playing games specified in the unit, as well as those from earlier units that target skills or concepts that require additional practice.
- Some teachers find that they have an extra 20–30 minutes one or more times a week. These times also work well for math games.
- One math class per week can be designated “Games Day” with stations that feature games in the current unit. Parent volunteers can assist in the rotation of students through the stations.

**Games**

### Roll and Record Doubles

**Materials**  Roll and Record Doubles Record Sheet  
 1 six-sided die

**Players** 2

**Skill** Finding addition doubles

**Object of the Game** To fill one column.

**Directions**

Work with a partner. When it is your turn:

- 1 Roll the die. Use that number to make a doubles fact. 3 + 3 = 6  
 For example:
- 2 Shade the first empty box above the sum for the doubles fact.  
 Take turns until one column is filled.

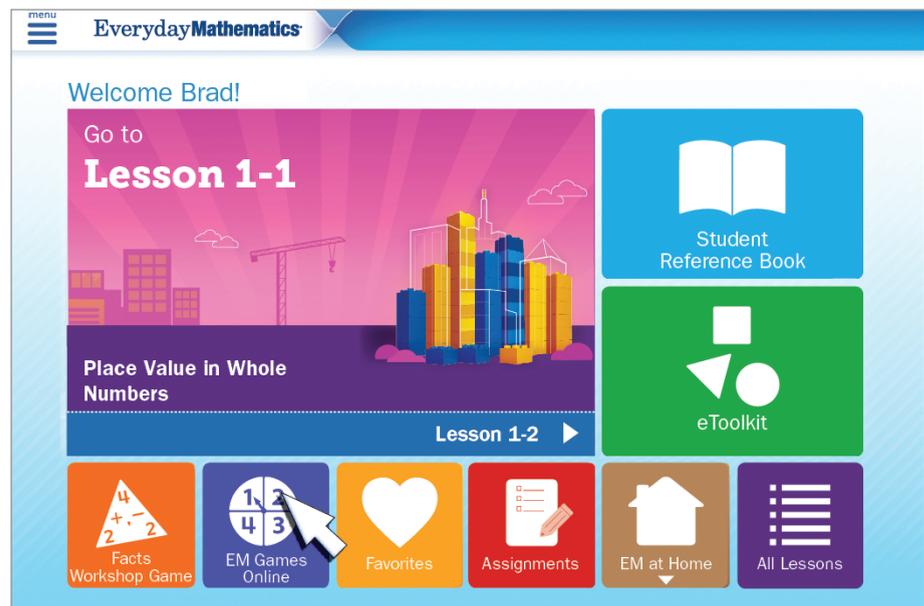
**Math**  
160 one hundred sixty

Directions from *My Reference Book* for a game that provides skill practice

For more information on game modifications, see Section 10.2.2 *Online Differentiation Support in Grades 1–6*.

- A “Games Corner” with favorite games can be set up in the classroom. Students can get additional skills practice while playing games of their own choosing during free time. Games can be rotated to keep the Games Corner fresh and interesting.
- Students can access many of the *Everyday Mathematics* games online through the Student Learning Center. Students can play these games if they finish an activity early or if they have designated computer time.

Many *Everyday Mathematics* games will be unfamiliar to students’ families. Signing out games for home use has many benefits: students practice skills at home, learn to be responsible for materials, and can teach their families—an empowering experience for them. This also helps families learn about the program. Teachers often follow a procedure similar to one used by libraries. They put the materials for games in a large envelope or plastic bag along with an instruction sheet or reference to the game’s directions in the *My Reference Book* for Grades 1–2 or *Student Reference Book* for Grades 3–6. Some teachers also include a sheet for students and families to write comments about the game, perhaps inviting families to read and respond to one another’s comments. Sometimes families suggest interesting game variations that others can use. Usually a short borrowing period (one or two nights) is sufficient, and increases the chances of return without loss of materials. Since many games are accessible online in the Student Learning Center, teachers can also encourage families to log on and play the games online from home.



Many *Everyday Mathematics* games are accessible through the Student Learning Center

### 5.3.1 Competition

Many of the games in *Everyday Mathematics* are competitive. Fair and friendly competition can generate positive and productive excitement, determination, independence, and challenge. Because many teachers are justifiably concerned about the competitive aspect of some games, most game rules are easily changed to fit player and teacher needs for fairness, harmony, and equality. The challenge and excitement can come from working together, making joint decisions, and doing one’s best while having fun.

To demonstrate how a competitive game can be modified to make it noncompetitive, consider *Top-It: Multiplication*. In this game, students use a 40-card deck of 0 through 9 number cards with four cards of each number. Each student turns over two cards and calls out the product of the numbers on them. The player with the highest product takes all the cards played in that turn. The player with the most cards wins.

To reduce individual competitiveness, ask two or three students to play the same game but with this objective: *Play until all 40 cards are used, putting all the used cards into a single discard pile. Time the game. Play again until all 40 cards are used. Try to beat your best time to play the whole deck.*

This modified game practices the same skills but does not declare winners and losers. Instead, the focus is on the group objective of achieving a faster time.

Many *Everyday Mathematics* games identify the winner as the player with the highest total after a certain number of turns. Here are some strategies for converting these games to relatively noncompetitive games:

- Have students take turns as usual, but ask them to record their results for each round on the same sheet of paper. A game total will then represent the combined efforts of all group members.
- Redefine the game objective. For example, ask groups to play a sequence of games and report the highest and lowest single game totals. This change may inspire some measure of healthy competition among groups, but the one-on-one competitive nature of the standard game will be reduced.

These are only examples. The best ideas for modifying games are likely to come from teachers' own classroom experiences. Involve students in developing modifications, and try their ideas. If they realize that their input improves the games, they are likely to become more eager players and learners.

## 5.4 Creating a Mathematics-Rich Classroom

A foundational principle of *Everyday Mathematics* is that most students begin school knowing a great deal about numbers, measurement, and geometry. They also have abundant common sense and knowledge of their everyday worlds and come to school with inquisitive dispositions. Students explore mathematics as they interact with materials, with others, and with their surroundings. It is important for teachers to be aware of the mathematics that is going on as students work and play at school and to establish a classroom environment that takes advantage of their natural inquisitiveness. By recognizing what students are already doing with mathematics, teachers foster continued mathematical exploration and learning. This section discusses some opportunities for building mathematics into the classroom environment.

### 5.4.1 Daily Routines

GRADE LEVEL 

K	1	2	3	4	5	6
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Daily Routines practiced in Kindergarten, first, and second grades contain real-world applications of the content and mathematical practices featured in *Everyday Mathematics*. These include making an Attendance Chart, keeping a Class Calendar, observing weather and temperature patterns, and investigating the Number of the Day. Many teachers incorporate their own daily routines based on the interests of the class.

For more information, see Section 7 *Daily Routines*.

### 5.4.2 Math Library

Maintaining a *Math Library* connects mathematics and literacy. Teachers can incorporate the books they already have in their collections that are recommended in the Literature Links in the Unit Organizers and in many lessons. Complete literature lists for each grade are available online and in the *Home Connection Handbook*. Students enjoy revisiting books that have already been read to them and reading new math books while waiting for others to finish assignments or during independent reading times.

Another powerful connection to literacy is to have students create *Number Story Books* that can be added to the Math Library. Students write number stories that correspond to pictures they have drawn or photos they have cut from magazines. They enjoy the freedom to practice a wide range of mathematics in their number stories, and it is fun to see their number stories becoming more sophisticated as the year progresses.

The Internet is another resource for connecting mathematics and literacy. Teachers can bookmark or create lists of websites that contain relevant and interesting mathematics information. Students can navigate to these websites at appropriate times and will enjoy exploring another medium in which they can read about and experience mathematics.

### 5.4.3 “Built-In” Mathematics

*Everyday Mathematics* teachers contributed the following suggestions for capitalizing on mathematics opportunities throughout the day:

- When disputes between two students arise that could be settled in either one’s favor, have each student choose a number between 1 and 100. Pick a number yourself and tell it to a third party or write it down secretly. Explain that the one who guesses closest to your number will be the “winner.” After settling the issue, ask questions such as: *Is this fair? What makes it fair?* You can extend or limit the range of numbers as appropriate for the situation or grade level.
- When the class has to choose an option, have students vote. Each student can only vote once. The option receiving the most votes is the one the class will accept. Students can then tally, count, and compare totals. In the case of a tie, ask students to suggest a fair way to proceed.
- When giving directions, quantify as often as possible. For example, say: *Six students may use the Reading Corner, and five may use the Math Center.*
- Have students line up according to specified categories, such as everyone wearing something red, everyone wearing a belt, or everyone wearing brown shoes.
- Have students line up without revealing the category to them. For this version of “*What’s My Rule?*” determine a category and then call out the names of students who fit the category. Ask the class to explain why you chose those particular students. Don’t insist on your rule if students see one that is equally valid. You might say: *What I had in mind was \_\_\_\_\_, but yours works, too. Or, I didn’t think of yours.*

- Assign an *identification number* to each student at the beginning of the year. The range and type of numbers can vary based on grade level. For example, in Kindergarten, students may receive whole numbers between 0 and 30. However, by sixth grade, students may be assigned decimals, fractions, or larger numbers. Use the numbers to label non-consumable items, such as books, calculators, and rulers that students borrow throughout the year. This will help match a misplaced item with its user. Throughout the day, you can organize students by their identification numbers while incorporating number sense and facts practice. For example, tell students: *Prime numbers stand up* or *Multiples of 5 line up in order*. You can also write the identification numbers on slips of paper or craft sticks and randomly draw a number to select a student for an activity or task.

#### 5.4.4 My Reference Book and Student Reference Book

*Everyday Mathematics* includes reference books for students in Grades 1-6 to use as they are solving problems. *My Reference Book* is used in Grades 1-2. Grades 3-6 each have their own *Student Reference Book*. Although these reference books are explicitly pointed to in the curriculum, they also contain a wealth of information that students can use outside of instructional time, including:

- Essays on mathematical content related to, but not directly addressing, topics covered in math class.
- Photo essays that depict real-life applications of the mathematics discussed in class.

Interactive versions of *My Reference Book* and the *Student Reference Book* can be accessed through the Student Learning Center. These interactive books have voiceover features that allow students to listen to the content, videos of worked examples, and Geometer's Sketchpad activities which allow students to complete interactive practice problems. These digital enhancements can make the mathematical content accessible to students who might otherwise struggle with it.

#### 5.5 Using Technology

*Everyday Mathematics 4* includes a suite of resources for teachers who want to implement the curriculum digitally. These resources are housed in the Teacher Center and the Student Learning Center, and they allow teachers to incorporate technology in their mathematics instruction to nearly any degree. Technology provides for exciting innovations in teaching and learning, but its integration must also be carefully considered as teachers build and maintain effective classrooms.

### 5.5.1 ePresentations

Nearly every lesson has a collection of ePresentation slides to teach the lesson with an interactive whiteboard. Many teachers find that ePresentations are helpful in engaging students with the mathematical content of the lesson. It is important to note that while there are slides for most of the lesson content, the ePresentations are not meant to be a substitute for the *Teacher's Lesson Guide* (TLG) or the detailed lesson information found in the Teacher Center. The ePresentations were designed to save teachers time by having pre-populated content that teachers might wish to display or demonstrate during classroom instruction, such as detailed diagrams, discussion prompts, and eTools. The slides provide a convenient starting point for whole-class activities, with the expectation that teachers will augment or skim over slides as appropriate. Teachers should read each lesson and examine how the slides correlate to the activity as it is presented in the TLG or the Teacher Center. By preparing lessons in this way, teachers can make the most effective use of the slides and decide when other forms of instruction or interactivity may be more relevant.

### 5.5.2 eTools

Many of the tools and manipulatives that *Everyday Mathematics* lessons reference have been developed as eTools, available both to teachers in the Teacher Center and to students in the Student Learning Center. These tools are easily accessible, making it easier for students to use them both at school and at home. They are also engaging in their interactivity and their potential to advance student understanding of mathematical concepts. Some of the eTools allow students to explore concepts in a deeper way than their physical counterparts. However, it is important for students to have opportunities to use both physical manipulatives and eTools. It is recommended that students use physical manipulatives the first time they are introduced, and only use the eTool after they have developed facility with the physical tool. In time, some students may express a preference for the eTool, while others may prefer to use physical manipulatives. Both sets of tools should be readily available for students during mathematics.

### 5.5.3 Student Learning Center

The Student Learning Center (SLC) combines all the different digital resources students need for completing *Everyday Mathematics* lessons in one digital location. The SLC is meant to be a record of student learning and a resource for students throughout the year, just as the print *Math Journals* are. Access to student devices and a stable Internet connection will impact use of the SLC. Many digital activities differ from their print counterparts, and teachers should carefully consider each option when planning a lesson. Some SLC activities must still be augmented with print materials and physical manipulatives in order to provide thorough coverage of the subject matter.

For more information, see Section 8.3 *The Digital Environment*.

## 5.5.4 Teacher Notes

When an activity is translated from a print medium to a digital one, changes happen—both intentional and unintentional. Teachers must consider how both the mathematical content of the activity and their pedagogy have changed. *Everyday Mathematics* helps teachers consider these changes and how to address them through the use of teacher notes, found in the Teacher Center. These notes identify issues both in the ePresentations and the Student Learning Center activities that teachers may want to address as they instruct. Teacher notes appear below the TLG text on each activity page, for use while planning an activity. Notes alert teachers when digital features are introduced, and provide timely advice for effectively incorporating digital and physical materials.

The screenshot displays the 'Everyday Mathematics' Teacher Center interface for Lesson 1-8: Focus: Introducing the Quarter and Counting by 25s. The page includes a navigation bar with 'Evaluate' and 'Activities' buttons, and a search icon. The main content area is divided into several sections:

- Materials:** A dropdown menu is set to 'Materials'. Below it, there are sections for 'PRINT' (toolkit coins) and 'DIGITAL' (ePresentations: S4-S5, Student Learning Center: SLC2-SLC3).
- Uploaded Resources:** A section for resources uploaded by the user.
- Activity Resources:** A section for activity resources, including 'The Quarter a...' and 'Making 25 ce...'. Each resource has a preview icon and a star icon.
- Assessment Check-In:** A yellow box containing text: 'Observe as children share coin combinations. Expect most children to know the values of the penny, the nickel, and the dime. Some children will be able to calculate values of combinations with these coins. Because this is their first exposure to the quarter, do not expect all children to know its value. Some children will be able to count coin combinations involving quarters. Regularly choral count using this routine: count by 25s, stop, and then continue counting by 5s or 10s. Future lessons will provide more opportunities for counting coin combinations, including opportunities involving quarters.'
- ePresentations Note:** A section titled 'S4: (SLC2): The Quarter and Counting by 25s' with a note: 'Screen 1: The icon in the upper-left corner indicates the content of this activity should be delivered orally and may not be appropriate for display. Please use this screen at your discretion.'
- Student Learning Center Note:** A section titled 'SLC2: (S4): The Quarter and Counting by 25s' with a note: 'Screen 1: It is important that children explore the physical toolkit coins in this activity. Ask them to compare physical features of the nickel, such as weight and thickness, to the other coins. Have children use the Flip feature of the Quarter eTool to see both sides (heads, tails).'. Below this is another note for 'SLC3: (S5): Making 25 Cents' with a note: 'Screens 1-2 Remind children to use the Navigation Bar to access all of the screens in this activity.'

Teacher notes alert teachers to issues in the ePresentation and Student Learning Center

## 5.6 Advice from Field Test Teachers

The *Everyday Mathematics* digital materials were field tested before being published for use in classrooms. The following is some advice on incorporating technology into mathematics instruction from some of the field test teachers.

### 5.6.1 Transitioning to a Digital Classroom

Stepping from a traditional to a digital classroom can be exciting but also overwhelming. Teachers should choose their own pace and goals based on their comfort level. The process is fluid and changes throughout the course of the year. It is worth noting that students possess an intuitive enthusiasm for digital activities, and teachers can feed on their energy.

## 5.6.2 Planning for and Beginning Digital Implementation

Digital materials are provided in the Teacher Center. They range from eBooks that are faithful reproductions of print to sophisticated digital tools for planning lessons, delivering content, and conducting assessments.

Teachers should begin slowly and take time to become familiar with the curriculum and the content and flow of the lessons. It can be helpful if teachers first utilize just the print resources to help them fully understand the parts of lessons and the tools that the curriculum provides. Once teachers are comfortable with the curriculum as a whole, they can see the connections between print and digital resources and take more confident steps toward using digital materials in the classroom.

The ePresentation slides are a good entry point into the digital format. Teachers can use this resource to model the use of digital tools while strengthening their students' learning experiences. ePresentations can be used whether or not students are using the other digital materials. As teachers become more comfortable with the slides, they can launch additional digital material, such as the eToolkit or the *Student Reference Books* from within the ePresentations. Teachers should plan ahead and preview ePresentation slides to promote confident, in-class usage of materials.

Even as teachers become more facile using all the digital resources, they should remember that the digital offerings do not take the place of the *Teacher's Lesson Guide* (TLG) or the detailed activity information in the Teacher Center. Many teachers find it helpful to carry the TLG with them, or view the activities in the Teacher Center on a mobile device as they teach. This enables them to read discussion prompts, view sample student answers, and use suggested problems as the lesson progresses. Using the TLG to teach the lesson will make the integration of the digital content more meaningful and productive for students.

Teachers should also remain aware of how digital implementation affects their pacing—both within the lessons themselves and over the course of several lessons. They should not be afraid to make adjustments as they use the digital materials to ensure that pacing remains appropriate.

### 5.6.3 Bringing Students into the Digital Environment

Students should also be immersed slowly into the digital activities. Teachers must set clear expectations for student behavior when using a digital device. A digital classroom mission statement that outlines appropriate behaviors for using and handling digital devices creates a culture of respect and patience with technology.

Teachers should allow for technology transition time. Logging in and navigating through both the Teacher Center and the Student Learning Center requires additional time at the start, but as with all new endeavors, the learning curve decreases with time, exposure, and practice. Teachers should consider helping students master one portion of the lesson at a time; this will build confidence throughout the digital transition. Teachers will also benefit from creating strategies for managing the use of the digital materials. Some find that using digital student materials in small groups is easier to manage and helps students overcome issues.

Students, like teachers, will benefit from exploring the Student Learning Center and will naturally share their discoveries with their peers. Teachers should give students time to explore, navigate, and develop their own comfort level, and allow them to take a role in explaining new tools or activities. Teachers could consider creating an assignment that encourages students to show their new technology skills at home to parents and family members.

Teachers should learn from the students as well. It is surprising what students can achieve when given the opportunity to do so. A classroom providing instructional delivery through a digital platform creates a collaborative community. Teachers should foster risk-taking, support the exploration of digital tools, and allow students to make choices about what tools work best for them in different contexts. Students will not only grow as math learners, they will grow with the ability to take charge of their learning through the Student Learning Center.

### 5.6.4 Student Work and Assessment

Data can be recorded in the Teacher Center from a print or digital activity daily. Finding a balance with data collection is critical for the busy teacher. Technology should enhance the classroom, not slow teachers down. Student work can look very different in a digital environment. Students may have access to a greater variety of representations, and may use different ways to represent their thinking digitally. Teachers should allow time for students to become accustomed to this new medium of work, but also be prepared to advise students who may experience difficulty expressing themselves with digital tools.

Structuring lessons to include both digital and print activities each day keeps students engaged and focused. However, focusing on a screen for lengthy periods of time can fatigue students. It is important to provide students with “eye breaks”. Using a combination of etools and physical manipulatives also provides for diversity in the learning experience.

For information about digital Assessment, see Section 9.4.3. *Digital Assessment and Reporting Tools.*

### 5.6.5 Setting Goals

Teachers should keep the mathematics goals at the forefront of every lesson. Technology should engage all learners, boost skill development, and encourage independent problem solving. If technology issues compromise learning, teachers should present the information using print materials. Teachers are responsible for setting the atmosphere. If the technology causes the teacher stress, that stress will trickle down to the students. If teachers stay positive and approach digital learning as a new endeavor that everyone can learn from, a sense of camaraderie will develop between teachers and students.

Teachers may find it helpful to set small goals for each unit. Phasing in digital goals over time allows for a true shift in instructional practices. Teachers should track goals through the span of a year to keep an eye on their students' growth, as well as their own. And teachers should always celebrate successes—even the small ones!

### 5.6.6 Collaborating with Other Teachers

Many *Everyday Mathematics* teachers have found support through the Virtual Learning Community, or the VLC, hosted by the University of Chicago. This online resource provides professional resources, demonstration lessons, the ability to join or form groups, and so much more. Having colleagues to share *Everyday Mathematics* experiences with enriches the program experience.



Access the VLC through the Main Menu in the Teacher Center

Through the VLC, teachers share their trials, techniques, and celebrate their successes together. Many teachers are finding that as they try things, embrace the challenges, learn in new ways, and use the resources available that they can transform into teachers who meet all the needs of the 21st century student.

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