

# Kindergarten: The First 10 Days

## Launching Mathematics in the Common Core Classroom

The purpose of the First 10 Days is to establish math routines that will prepare students for the Common Core classroom. This resource provides lessons that allow students to develop number sense concepts within the structure of the CCSS Math Practices. As students transition into CCSS, time is needed to establish these mathematical practices. This document includes the following:

- Math Talk Moves for Mathematical Discussions
- Number Talks
- Expectations for partner games, center stations, and rotations
- Introduction to the Problem Solving Math notebook
- Cooperative learning groups
- Classroom routines to encourage Standards for Mathematical Practice

The instructional strategy, “Connecting to the Learning through Conversations about Mathematics,” is best defined by Fosnot and Dolk (2002). The purpose of this class conversation is to support the development of mathematicians in the classroom learning community, rather than fixing mistakes in the children’s work. This conversation enables the teacher to focus the students on reasoning about a few big mathematical ideas derived from the mathematical thinking present in students’ solutions. It focuses whole class discussion on two or three, strategically selected, student solutions in order to develop every student’s mathematical learning.

The goals of the classroom conversations are to provide opportunities for students to (Smith, 2011):

- Share ideas and clarify misunderstandings
- Develop convincing arguments regarding why and how things work
- Develop a language for expressing mathematical ideas
- Learn to see things from other people’s perspective

In this document, the Mathematician’s Chair develops the routine of classroom conversations.

### Mathematician’s Chair

The purpose of the classroom conversations is for students to learn from each other. Students share their strategies, and listen to the strategies of others. They reinforce their own skills by explaining how they solved a problem, and they learn new ways of problem solving by listening to other students explain their thinking. They can safely work through mistakes and misconceptions by talking with their peers. At the beginning of the year, this sharing may take place in a big circle, so everyone can see each other. There may be a designated carpet square, or a student chair, or the teacher’s chair. The idea is to build a community of learners, where the thoughts of students are honored.

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	What?	Why?
<b>Day 1 Goals: Set the stage for daily problem-solving and engaging in academic conversations around mathematics.</b>		
<b>Day 1</b>	<p><u>Problem Solving Expectations:</u> Present this problem to students: I have a problem. Last night I looked in a hole in my backyard and saw 4 eyes. What could be in the hole? Allow the children to discuss what they think could be in the hole and why. (2 frogs, 4 dogs looking sideways, 3 owls but one is looking backwards, etc.) Let's think about what we had to do to solve this problem.</p> <p>Try to elicit the following ideas from the children. You may record their ideas on an anchor chart to establish expectations for behaviors in a problem solving math classroom through drawings, pictures, etc.</p> <ul style="list-style-type: none"> <li>• Have a positive attitude (I can do this!)</li> <li>• Keep trying, don't give up!</li> <li>• Explain your thinking</li> <li>• Safe Environment (what does that look like, sound like, feel like?)</li> </ul>	<p>To establish expectations for behaviors in a problem solving math classroom.</p> <p><u>Materials:</u>            Chart paper and markers for teacher</p>
	<p><u>Getting to know the Problem Solving Notebook:</u> Introduce the following problem that is written on a half sheet of paper: Draw a picture of yourself. How many eyes do you have? Show children how to glue this sheet in to their notebook. Add the following ideas to the anchor chart:</p> <ul style="list-style-type: none"> <li>• One page at a time (Use one page each day.)</li> <li>• Dot...dot...not a lot. (This refers to the amount of glue on the Problem of the Day sheet. Glue sticks are recommended, or copy the problems and bind them into books.)</li> </ul> <p>After the children have correctly placed the Problem of the Day in their notebook, allow children time to draw and write.</p>	<p>To practice writing about math using precise vocabulary and set expectations for math notebook writing.</p>

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<b>Day 1</b>	<p><u>Introduce Speaking and Listening Expectations:</u> Talk with the students about the actions of a good listener. What does a good listener do? (listens with intent to understand, looks at the person talking, pictures what is said in their head).</p> <p><u>Introduce Connecting to Learning:</u> Connecting to the Learning is best defined by Fosnot and Dolk (2002) as a mathematics instructional strategy they refer to as “Math Congress.” The purpose of this class conversation is to support the development of mathematicians in the classroom learning community rather than fixing mistakes in the children’s work. This conversation enables the teacher to focus the students on reasoning about a few big mathematical ideas derived from the mathematical thinking present in students’ solutions. It focuses whole class discussion on two or three, strategically selected, student solutions in order to develop every student’s mathematical learning.</p> <p><u>Mathematician’s Chair:</u> Identify a special chair that will provide a public forum to share and discuss work and provide feedback to one another.</p> <p>As the children are working, look for 2-3 students with different solutions to the prompt “How many eyes do you have?” (i.e. a picture, dots, numeral 2). If nobody has a solution, then ask the students for ideas about how they could represent the number 2.</p> <p>Call specific students to sit in the chair and show and discuss their work.</p> <p>Record ideas in a Big Class Problem Solving Notebook (you could use a large spiral flip chart).</p> <p>As children finish sharing their solutions, then ask, “Are there any questions or comments?” After the questions and comments are complete, the class applauds and the process continues with another student sharing.</p> <p>Wrap up the day’s work with a review of what a good listener did during the lesson.</p>	<p>To set expectations for sharing thinking and responding to classmates.</p> <p>The Big Class Problem Solving Notebook is a collection of the math problems and is authored by the students, added to throughout the year, and becomes a class portfolio of work, accessed in the class library.</p>
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Day 2 Goals: To set expectations for math talks, continue drawing/writing in a daily Problem Solving Notebook, and practice the Mathematician's Chair.		
<b>Day 2</b>	<p><u>Problem Solving Notebook</u></p> <ul style="list-style-type: none"> <li>Review the expectations from the Problem Solving anchor chart.</li> <li>Discuss the "safe environment," in which everyone can feel comfortable doing their best work, we encourage each other, and we help each other.</li> <li>Show today's problem: How many students are at your table? How can you show your answer?</li> <li>Allow children time to glue the problem of the day in to their notebook and then write/draw their ideas in their notebook</li> <li>The focus should be on "How can you show your answer?"</li> </ul>	To practice writing about math and set expectations for math notebook writing
	<p><u>Revisit Listening and Speaking Expectations:</u> Make a poster of Good Listening, Not So Good Listening, drawing on student suggestions.</p> <p><u>Mathematician's Chair:</u></p> <ul style="list-style-type: none"> <li>Some children might draw a literal picture, symbols, or an actual number. During Mathematician's Chair, ask the children how they found their answer. Get them to use the word count... "I counted..." Ask for several volunteers to demonstrate how they counted. Also, point out the variety of ways that children showed their answers. Point out children that used more than one way to show their answer.</li> <li>Add to Big Class Problem Solving Notebook (use labels and precise vocabulary)</li> <li>Incorporate the Math Talk: Revoicing (see below)</li> <li>Knowledge that a safe environment was maintained, or what needs to be done to keep a safe environment for sharing.</li> </ul> <p><u>Math Talk:</u> Model Revoicing (Teacher repeats exactly what a student has said as students share during Mathematician's Chair, teacher can also prompt another student to revoice.)</p> <ul style="list-style-type: none"> <li>"What I heard you say was..."</li> <li>"You're saying..."</li> </ul>	<p>To model writing about math and set expectations for math notebook writing and sharing in Mathematician's Chair.</p> <p>To establish shared meaning and set expectations for class discussion and questioning.</p>



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### Day 4 Goals: To introduce appropriate use of manipulatives, continue practicing expectations of partner game play and Math Problem Solving Notebook writing.

<b>Day 4</b>	<p><u>Math Tools Scavenger Hunt or Exploration:</u> Students work in pairs to:</p> <ul style="list-style-type: none"> <li>○ Find one or more manipulatives/math tools that could be used to build the number 3.</li> <li>○ Find one or more math tools that connect together.</li> <li>○ Find one or more math tools that could be used to make a design.</li> <li>○ Find one or more math tools that could be used to find out how long your arm is.</li> </ul> <p>Discuss manipulatives that serve different purposes. Some manipulatives to have available may be unifix cubes, pattern blocks, color tiles, digi-blocks, animal counters, etc. (For classroom management purposes you may want manipulatives in bins in an assigned area of your classroom.)</p>	<p>To establish uses for different manipulatives so that students can choose and use them strategically for later problem solving</p> <p>Materials: unifix cubes, pattern blocks, color tiles, digi-blocks, animal counters, etc.</p>
	<p><u>Practice Partner Math Game from Day 3:</u> Revisit class anchor chart for game expectations. Debrief “what is going well” vs. “what needs to be better” in relation to math games expectations. Focus on the positive and choose one goal to improve for the next day.</p>	<p>To establish expectations for independent games and activities.</p>
	<p><u>Problem Solving Notebooks:</u> Make a picture with pattern blocks. Draw it in your notebook. How many pattern blocks did you use?</p> <p><u>Revisit Listening and Speaking Expectations:</u></p> <p><u>Mathematician's Chair:</u> Share some of the math journal entries aloud or use the document camera to introduce “anonymous sharing” and to celebrate efforts and establish pride in written work. The goal of anonymous sharing is to take the focus off of who did the work, and instead place it on “can you figure out how this was done?” The students each try to figure out how the problem was solved and describe it in their own words, which can be done in partners, or whole group. Add to Big Class Notebook.</p> <p><u>Math Talk:</u> Encourage student to practice restating. Introduce the Math Talk move of applying reasoning to someone else's reasoning. Ask a child if they agree or disagree with what was said, and why. You can also allow students to add on to what someone else has just said.</p>	<p>To practice drawing and writing about math.</p> <p>To set expectations for sharing their thinking using their Problem Solving Notebooks</p> <p>To practice expectations for participation during math discussions.</p>

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### Day 5 Goals: To develop expectations for working in small groups, Problem Solving Notebooks, and Mathematician's Chair.

<b>Day 5</b>	<p><u>Introduce Small Groups</u>: Break the class into 3-4 homogeneous groups. Each group will have their own place in the classroom. Give each group a bin with one type of manipulative from their scavenger hunt. Give each group five minutes to explore the manipulatives in the bin. At the end of the time, introduce a signal that means it is clean up time. Create a sticker chart and reward groups who clean up quickly and quietly. Have students rotate to each station.</p> <p>Establish clear expectations for small group activity rotations:</p> <ul style="list-style-type: none"> <li>• When will we rotate and what is the signal?</li> <li>• How do I know what to do first, then next?</li> <li>• Where will activities be located and who will get them?</li> <li>• What is the expectation for clean up between activities?</li> </ul>	To establish expectations for center work.
	<p><u>Problem Solving Notebooks</u>: How many cubes can you grab with one hand? How can you show your answer?</p>	To practice drawing and writing about math.
	<p><u>Revisit Listening and Speaking Expectations</u></p> <p><u>Mathematician's Chair</u>: Share some of the math notebook entries aloud or use the document camera to celebrate efforts and establish pride in written work. Record in Big Class Notebook</p> <p><u>Introduce Partner Talk During Mathematician's Chair</u>: Discuss the need to talk things over with a friend. Introduce "Pair-Share." Over time consider "knees to knees, eyeballs to eyeballs" where the students turn and face assigned partners, or creating an "A/B" partnership, where it is pre-designated who shares first, and who shares second. Ask the children to sit facing a partner (you may want to assign partners). Ask one child to talk first, restating the question or prompt. Listening partners are reminded of their responsibility to make sense out of what the child is saying to them. Can they restate it in their own words? Then switch roles. Sample questions may be: How is that problem solving like what you did? How is it different? How might you make it better? What's another way to do it? Partner talk allows for children to verbally express themselves and tryout the language, and the ideas, before sharing them in public.</p>	<p>To practice expressing opinions, and giving feedback about classroom math routines.</p> <p>To establish clear expectations for pair-share.</p>

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**Day 6 Goals: To practice expectations for working in small groups and partner games while continuing to write and discuss during problem solving. This week the teacher begins the LAUSD Kindergarten Formative Assessment, assessing children one-on-one.**

<b>Day 6</b>	<p><u>Continue Small Group Rotation</u>: Possible sources for activities include: enVision center activities, additional resources from Kathy Richardson or Marilyn Burns listed in the curriculum maps by standard. Extend the time at each station to seven minutes. While all other groups will continue with the manipulative exploration, one group will play the partner game previously introduced. Continue to monitor and set expectations for stopping, cleaning up and rotating. Pick a team captain who will be responsible for bringing the bins to and from the shelves to the tables or rug space. Continue to praise those groups following agreed upon procedures.</p> <p>During this time, teacher may begin pulling students for one-on-one LAUSD Kindergarten Formative Assessment (available online on the math website: <a href="http://math.lausd.net">http://math.lausd.net</a>, click "Elementary," click Kindergarten icon, scroll to the end.)</p>	<p>To closely monitor and enforce expectations of students as they work independently.</p>
	<p><u>Problem Solving Notebook</u>: Revisit expectations for math notebook writing and celebrate effort and persistence from last week. Draw a cat, a fish and a dog. Which one does not belong? Why or why not? Have children glue the problem of the day into their math notebooks and complete the problem.</p> <p><u>Mathematician's Chair</u>: Share some of the math notebook entries aloud or use the document camera to celebrate efforts and establish pride in written work. Record in Big Class Notebook.</p> <p>Allow student to practice restating. Practice applying reasoning to someone else's reasoning. Ask a child if they agree or disagree with someone and why. You can also allow students to add on to what someone else has just said.</p>	<p>To practice drawing and writing about math, express opinions, restating, agreeing/disagreeing, etc.</p>

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**Day 7 Goals: To practice expectations for working in small groups and partner game play.**

<b>Day 7</b>	<p><u>Introduce New Partner Game or Small Group Activity:</u> With whole class, revisit class anchor chart of game expectations and refer to as game rules are reviewed. Have all the students playing the same game or doing the same activity. Tomorrow this will be added to the group rotation. If most students are working well together, continue to pull students for LAUSD Kindergarten Formative Assessment.</p>	<p>To continue to become independent and communicate appropriately with a partner.</p>
	<p><u>Problem Solving Notebook:</u> Revisit expectations for math notebook writing and celebrate effort and persistence from last week.  <u>Ways to Make a Number:</u> Choose a target number (such as 6) and ask students to show as many ways as they can think of to make the target number. They might use visual representations, equations, models, and so on.</p> <p><u>Mathematician's Chair:</u>          As students share their ways to make the number, revisit the math talk expectations:</p> <ul style="list-style-type: none"> <li>• How many ways might there be to make this number?</li> <li>• What is it about the number ___ that gave you the idea to show it that way?</li> <li>• How are ___'s way and ___'s way alike? How are they different?</li> </ul> <p>Record in Big Class Notebook          Encourage students to practice Math Talk Moves: Restating, Revoicing, Applying Reasoning to Someone Else's Reasoning.</p>	<p>To practice drawing and writing about math, and use math talk moves such as express opinions, restating, agreeing/disagreeing, etc.</p>

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### Day 8 Goals: To practice expectations for working in small groups and partner game play.

<b>Day 8</b>	<p><u>Continue Small Group Rotation:</u> Add yesterday's game to the rotation, so now you will have two groups working on a game/activity and the rest of the groups exploring manipulatives. If the groups are not working together cooperatively and following procedures, they may not be ready for the new game. It is more important to go back to manipulative exploration and have consistent classroom management than to add new games too quickly.</p> <p>If students are working well together, continue pulling for the LAUSD Kindergarten Formative Assessment.</p> <p>* Debrief "what is going well" vs. "what needs to be better" in relation to math rotation expectations. You may need to model appropriate vs. inappropriate play of some earlier games.</p>	<p>To establish expectations for growing collection of independent games and activities and do Initial K Inventory.</p>
	<p><u>Problem Solving Notebook:</u> Revisit expectations for math notebook writing and celebrate effort and persistence from last week. My favorite animal has 2 eyes, 4 legs, and 1 tail. Guess what it is. Glue problem in notebook and complete the problem.</p> <p><u>Mathematician's Chair:</u> Share some of the math notebook entries aloud or use the document camera to celebrate efforts and establish pride in written work. Record in Big Class Notebook. Allow students to practice Math Talk Moves.</p> <p>*Problem Solving Math Notebooks can soon become a part of independent activities that students do during rotations.</p>	<p>To practice expectations for problem solving in math notebook and math discussions.</p>

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**Day 9 Goals: To practice expectations for working in small groups and partner game play.**

<b>Day 9</b>	<p><u>Introduce New Partner Math Game/Activity or Review Previous Math Games:</u> Break the class into small groups and practice rotating and doing consecutive activities. If you think your class is ready, you may add a new game/activity to replace the remaining manipulative exploration center.</p> <p>Revisit class anchor chart of game expectations and refer to as new game is modeled. Model appropriate vs. inappropriate play of game and use of manipulatives.</p> <p>If students are working well together, continue to do the LAUSD Kindergarten Formative Assessment.</p>	<p>To enforce expectations for growing collection of independent games and activities and <u>finish</u> the Initial K Inventory.</p>
	<p><u>Problem Solving Notebook:</u> Revisit expectations for math notebook writing and celebrate effort and persistence.</p> <p>Guess what is in my box? It is red. It is round. It has holes. (For example, student might say a button, an apple with worm holes, red wheel, rotten tomato, etc.)</p> <p>Glue problem in notebook and complete the problem.</p> <p><u>Mathematician's Chair:</u> Share some of the math notebook entries aloud or use the document camera to celebrate efforts and establish pride in written work. Record in Big Class Notebook Allow students to practice Math Talk Moves</p> <p>*Problem Solving Math Notebook can soon become a part of independent activities that students do during rotations.</p>	<p>To practice expectations for problem solving in math notebook and discussing.</p>

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<b>Day 10 Goals: Meet briefly with small instructional groups while the rest of the children meet expectations for independent work and partner play.</b>		
<b>Day 10</b>	<p><u>Meeting with Small Groups:</u> Based on observations, data, and the LAUSD Kindergarten Formative Assessment, you should be able to pull a small group of students who need additional help. By this time, the rest of the class should be working independently in their stations. Gradually introduce more games and activities as you see your class in ready. You may want to continue the format of one day teaching the activity to the whole class and the next day adding it into the rotation.</p>	To begin to use small group math instruction to match varying mathematical needs.
	<p><u>Problem Solving Notebook:</u> Revisit expectations for math notebook writing and celebrate effort and persistence. What was your favorite activity we did in math this week? Tell why. Glue in notebook and complete the problem.</p> <p><u>Mathematician's Chair:</u> Share some of the math notebook entries aloud or use the document camera to celebrate efforts and establish pride in written work. Record in Big Class Notebook. Allow students to practice Math Talk Moves</p>	To practice expectations for problem solving in math notebooks and foster more independence.

### CONGRATULATIONS!

You have worked hard to establish the following important routines and expectations with your students during the first ten days of school:

- Math Talk moves
- A beginning collection of Math Games that can be added to and used regularly
- Expectations for partner game playing and rotations for small groups
- Problem Solving Math Notebooks for problem solving and reflection

By establishing and continuing to build these routines, your classroom is now a place where the Standards for Mathematical Practice can grow and thrive in your students!

#### References:

Chapin, Suzanne. 2003. Classroom Discussions: Using Math Talk to Help Students Learn. Sausalito, California: Math Solutions.

Parrish, Sherry. 2010. Number Talks: Helping Children Build Mental Math and Computation Strategies. Sausalito, California: Math Solutions.

Van de Walle, John, & Lovin, LouAnn. 2006. Teaching Student Centered Mathematics K-3. Boston, Massachusetts: Pearson Education.

Buschman, Larry. 2006. Share and Compare: A Teacher's Story About Helping Children Become Problem Solvers in Mathematics. Reston, Virginia: NCTM.

Smith, Peg. 2011. Orchestrating Productive Discussions of Cognitively Challenging Tasks. University of Pittsburg. Los Angeles Unified • Kindergarten: First 10 Days of School • Adapted from Carroll County, MD