



Making Math Workshop Work

Math Workshop is a structure, used throughout the *Investigations* curriculum, that presents a set of related activities for students to work on. The activities are not sequential: as students move among them they continually revisit related concepts and ideas. This enables students to refine strategies, use different contexts, and bring new knowledge to familiar circumstances.

Grade level, class size, physical space, student population, and management style are all factors that will impact how Math Workshop looks in any given classroom. Teachers will need to experiment to find the right fit for their room, keeping the purposes of Math Workshop in mind—giving students repeated experience with math concepts and skills; providing the teacher with time to work with individuals and small groups; and helping students take responsibility for their own learning. The information in the following sections will help teachers think through the decisions that need to be made in order for Math Workshop to work in their classroom.

Making Expectations Explicit

It is critical to establish clear guidelines and to clearly communicate expectations. Be sure to describe and discuss students' responsibilities. For example:

- work on every activity at least once
- be productively engaged during Math Workshop
- if you don't understand or feel stuck, ask a friend. (Some teachers establish an “ask three, then me” rule, where students check with three peers before asking the teacher for help.)

Many teachers spend a few minutes at the end of Math Workshop, particularly early in the year, discussing what went smoothly, what sorts of issues arose and how they were resolved, and what students enjoyed or found difficult. Having students share the work they did can spark interest in an activity. Posing a question asked during Math Workshop can encourage students to respond to one another and brainstorm together. Involving students in the process of finding solutions to problems that come up in the classroom fosters independence, and encourages students to take responsibility for their own behavior.

Organizing the Materials and the Classroom

Materials should be readily accessible to students, and students should be expected to take responsibility for cleaning up and returning materials to their appropriate storage locations. Some teachers set activities up at centers or stations around the room, while others store materials in a central location and have students bring materials to their desks or tables. Whatever the setup, giving students a “five minute until cleanup” warning before the end of an activity allows them to finish what they are working on and prepare for the upcoming transition.

Organizing the Students

During Math Workshop, students may work alone, in pairs, or in small groups. Teachers need to think about how to group students for activities that require it. Some allow students to choose their own partners, or generate groups randomly (e.g. picking names from a hat). Others form groups based on particular criteria, for example sometimes pairing students who have similar needs and other times partnering students who work well together, who complement each others' skills, or who will inspire each other.

Most teachers limit the number of students who can work on an activity at one time. The quantity of materials available often sets the limit, but even if this is not the case, such restrictions encourage students to work in smaller groups and to make decisions about what they want and need to do. Because students often want to do a new activity immediately after it is introduced, they will need reassurance that everyone will have repeated chances to do each activity.

There are many different ways of communicating such information to students. For example, some teachers list the activities on the board/overhead/chart paper, and sketch a picture next to each (to help nonreaders). Others create a Math Workshop board (on a pocket chart or laminated piece of tag-board) that can be easily updated as the list of activities changes. Some teachers label each activity with drawings of stick figures, or with a number, to show how many students can do the activity at once. Others explain that the number of chairs at a particular table or station show how many students it can accommodate.

Supporting Students in Making Good Choices

Teachers and students need to work together to identify what each child needs to grow in math, so that they can choose the activities that best suit their needs. Initially, teachers may help students plan what they do and in what order. But, as the year goes on, students should learn to make their choices, get their materials, engage with an activity for enough time to benefit from it, and then switch activities, without help. If some students return to the same activity over and over again, without trying others, suggest that they make a different first choice and then do the favorite activity as a second choice. Other students may need to be encouraged to use their time efficiently to complete all activities.

Math Workshop aims to provide repeated experience with related math ideas, and to help students take responsibility for their own learning. For these reasons, *Investigations* doesn't recommend organizing students into groups that work on each activity for a set amount of time, nor does it advocate conducting each Math Workshop activity as a whole class activity. While these methods ensure that each student engages in each activity one time, they do not allow for repeated experience with the same activity, nor are they flexible enough to accommodate students who finish one activity quickly and need more extended time with another. Instead of making the decisions for them, teachers need to help students make good choices, plan their time, and take responsibility for their learning—all important aspects of students' school experiences.

Keeping Track of the Work

There are a variety of ways to keep track of the activities students are choosing, and the work they are doing. Options for the former include: using a class list to jot students' choices at the beginning of each Math Workshop; asking students to record the name and/or a picture of the activity on a blank sheet of paper when they have finished; or posting a sheet for each activity—with the name and the corresponding pictures—at the front of the room or at each station, for students to sign. Student work should be handled in the same way as any other completed or yet-to-be-finished math work (e.g., a math folder, binder, desk, cubby, etc.). Keeping a date stamp at the front of the room (or at each Math Workshop station) makes it easy for students to record the date, which can also help keep track of their work.

Note: This essay is largely based on the section of “Using Investigations” that is about Math Workshop. See *Implementing Investigations in Grades X*. It also incorporates ideas from an essay written to answer the following question about the 1st edition - “I’m wondering about the frequency and importance of Choice Time?” by Arusha Hollister. (TERC, 2005.)