

Imagine Learning Illustrative Mathematics

Statement on Practice and Homework K-5

In a problem-based classroom students are given the chance to think about mathematical concepts and to discuss their ideas with peers, rather than have the teacher tell them what to do and replicate memorized steps. Students learn math by doing math, which involves actively sharing with and listening to others and making and learning from mistakes.¹ This learning primarily takes place in the lesson activities provided in the curriculum. This statement will help clarify the roles of in-class practice and homework in the IM curriculum.

Because problem-based classrooms are different from traditional classrooms, practice looks different. Rather than completing many problems over and over (in class or as homework), in IL-IM K-5 Math, additional practice is addressed in the following ways:

- Practice problems are given in sets at the end of each section. The set typically includes one practice problem from each lesson and a few exploration problems that provide an opportunity for differentiation for students who are ready for more of a challenge. The first section in each unit also includes pre-unit practice problems that address prerequisite concepts and skills for the unit. Problems from the set can be assigned after each lesson or at the end of the section.
- Centers are either included in each lesson (in Grades K-1) or suggested for each lesson (Grades 2-5). Centers can be used in a variety of ways:
 - Students can work on centers if a lesson is completed and there is class time remaining.
 - Entire class sessions can also be dedicated to centers for students to practice or solidify the mathematical ideas of a unit.
 - Students can work on center activities during morning work time, or any other free time periods throughout the day.
 - Centers can also be used as support for students when practice with prior grade-level standards is needed.

To address homework, specifically, research shows that there is not a correlation between achievement and homework for younger students.² According to research, the amount of homework students receive should increase over time. In Grades K-2, homework (across all subjects) should not exceed 10-20 minutes per day, increasing to 30-60 minutes per day in Grades 3-6. In Grades 7-12, 30 minutes for each course is expected.³

To align with this research, in IL-IM K-5 Math, there are fewer practice problems than in IL-IM 6-12 Math. In addition, the decision on whether practice problems are completed in class or as homework is left to the teacher. Centers, particularly digital centers, could also be assigned for short homework tasks.

In summary, in-class activities should be leveraged most for student learning, to give students time to play with and try the mathematics, to share ideas, and to compare strategies. This time is also for teachers to hear and see what students know, to ask questions to gain insight into student thinking or move the problem solving forward, and to gather information that can be used during a synthesis or to inform instructional moves. As time allows or as teachers identify there is a need, resources such as centers or practice problems can be used to reinforce or review important concepts during additional practice in class or for small amounts of homework.



References

¹ Ray-Reik, M. How Do Students Perceive Problem-Based Learning? IM Certified Blog. <https://illustrativemathematics.blog/2019/06/24/how-do-students-perceive-problem-based-learning/>

² Cooper, Harris. A Brief History of Homework in the United States. NCTM. <https://www.nctm.org/Research-and-Advocacy/Research-Brief-and-Clips/Homework-History/>

³ Cooper, Harris. Homework: What Research Says. NCTM. https://www.nctm.org/Research-and-Advocacy/Research-Brief-and-Clips/Homework_-What-Research-Says/