

SUPPORTING MATHEMATICS LEARNING THROUGH OUTREACH TO PARENTS AND THE COMMUNITY:

Some Examples of Productive
Collaboration between the Elementary
Math Office and
the Office of Family and Student
Engagement

First Steps:

The Office of Family and Student Engagement contacted the Departments of Curriculum and Instruction about collaborating on several initiatives.



Family engagement that is linked to learning is the kind of engagement that has the greatest impact on student outcomes.

Specific Initiatives

- Parent University sessions
- Family Learning Guides
- Teacher Toolkit



PARENT UNIVERSITY

ENRICHING - ENGAGING - EMPOWERING



Parent University

- Offers whole day learning sessions in October, January, and May
- Other sessions held in schools, libraries, and community centers
- Free to BPS families



Considerations:

- What types of courses would be most helpful for parents and caregivers?
- What format, activities, and games would be most engaging?
- What would be important to communicate about math teaching and learning?

Math Courses

- Feeling at Home with Numbers
- Feeling at Home with Fractions
- Easing the Way to Algebra
- First in Math, an online program for students and families

What did I learn?

What will I do differently as a parent?

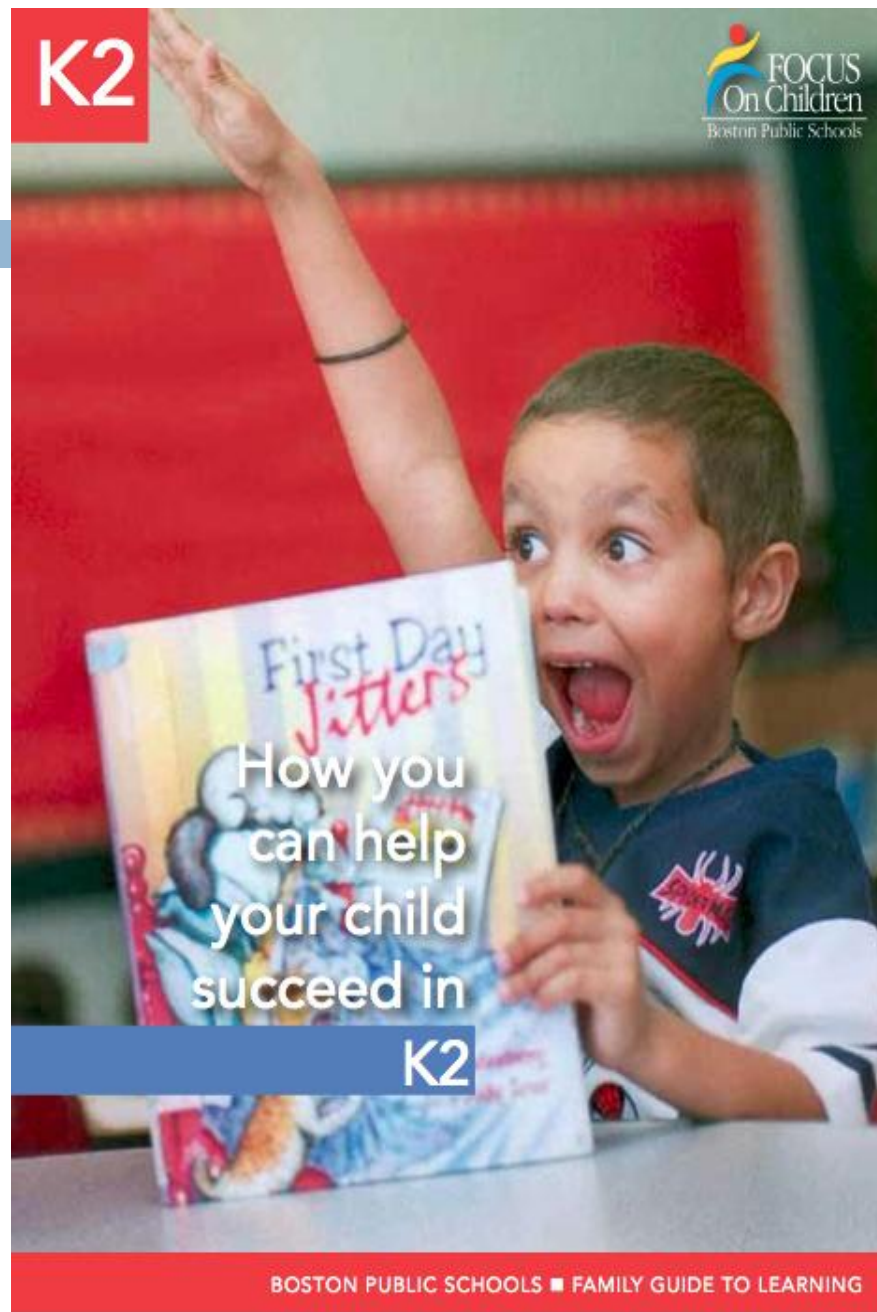
- I will remember to emphasize concepts with visual examples to help me support my son's learning
- The visual learning is very good to practice and learn
- I will put myself in my son's place to learn
- Math games helped me understand fractions
- Now I know that the visual and activity learning is very good
- I can be more open
- I want to play with my daughter in mathematical ways
- I can be more hands-on
- I'm motivated to be involved
- Now I understand more how to help with homework
- I will listen to my son when he is doing his homework

Family Guides

K2

Guides are designed to:

- provide parents with the tools to support learning at home
- build partnerships between teachers and families



Considerations:

- What is the most important information to include given limited space?
- How do we communicate in family-friendly language?
- How can we use the visual representations and pictures to communicate important ideas to parents?

Mathematics

HERE ARE SOME THINGS YOUR CHILD SHOULD KNOW
AND BE ABLE TO DO BY THE END OF 3RD GRADE:

Number Sense and Operations

- Make sense of and solve word problems using addition and subtraction. Use related addition and subtraction facts (for example, if $8 + 6 = 14$, then $80 + 60 = 140$) to help solve problems.
- Understand the relationship between multiplication and division, and draw a model or picture to represent a multiplication or division problem. Know and use multiplication facts to solve problems.
- Represent fractions, such as $\frac{1}{4}$ or $\frac{1}{2}$, as parts of a whole (for example, $\frac{1}{4}$ of a sandwich) and parts of a group (for example, $\frac{1}{4}$ of 12 marbles). Compare fractions — for example, which is bigger: $\frac{1}{4}$ or $\frac{1}{5}$?

Patterns, Relations, and Algebra

- Make and use tables and line graphs to show and understand how something changes — for example, how temperatures will increase and decrease during a week.

Geometry

- Recognize the attributes (characteristics) of shapes to name and classify them. For example, what makes a triangle a triangle?
- Identify angles as right angles (90 degrees \angle), less than a right angle \angle , and greater than a right angle \angle .

Measurement

- Determine the perimeter and area of different shapes and label them with the correct unit of measure, such as feet or square feet.

Data Analysis

- Collect, represent, describe, and interpret data, such as data about places where students like to eat or visit.



Learning at Home

- When you're at the store, have your child estimate the total cost of your purchase. As you pay, you can also ask, "How much change will we get back?"
- Ask your child to use multiplication and division in everyday situations. For example, if you see five birds, how many legs are there? If you share a dozen cookies equally among four people, how many cookies will each person get?
- With your child, record the temperature in Boston each day for a week. Ask your child to make a line graph to show the changes in temperature.

Teacher Toolkit

- A current project under construction is designed to help teachers work closely and positively with the families of their students.
- What format and information will be most useful for teachers?
 - Focus groups with teachers
 - Feedback on online and written documents


Research



When families are actively engaged as partners in supporting student learning, students' level of academic achievement improves.

2002

Henderson and Mapp,



Meaningful partnerships with families and the community is one of five essential supports that must be in place for schools to improve.

2010

Bryk, et al.,

Looking ahead



We are currently exploring and working on other collaborations especially as we move into our new curriculum frameworks and assessments.