



## CASE STUDY

# ***Number Worlds*<sup>®</sup> Brings Rigor and Results to Pittsburgh's Summer Dreamers Academy**

### ABOUT THE DISTRICT

Name

Pittsburgh Public Schools

Location

Pittsburgh, Pennsylvania

Grades

K-12



### Overview

Pittsburgh Public Schools is the second-largest school district in Pennsylvania, serving roughly 25,000 K-12 students at 54 schools. This is a diverse, urban district, with 84 percent of students qualifying for free or reduced lunch. It's also a district commitment to graduating college-ready and future-ready students. To do this, Pittsburgh Public Schools created the Summer Dreamers Academy, a no-cost summer learning camp that supports the needs of a broad range of students.

## Implementation

In the summer of 2015, teachers Bridget Maben and Allison Henry helped bring this summer program to life for middle school math students. They incorporated *SRA Number Worlds*®, a research-proven math intervention program that's a highly effective way to keep students interested.

Program organizers wanted to match the rigor and expectations of the math taught during the regular school year. "We needed to align summer school curriculum to include new district incentives that focus on developing number sense while having fun," says Henry. "In years past, the connection to the regular school year was not as explicitly made for teachers as well as students."

They accomplished this by breaking each 90-minute lesson into instructional blocks that included a 10-minute introduction, 60 minutes of content from *Number Worlds*, which included games and problem-solving activities, and 20 minutes of project-based learning from *Number Worlds*. Henry appreciates the program's flexibility because it allows her team to customize it. "We combined two 30-minute lessons from *Number Worlds* to create that 60-minute block," she says. "So we were able to fit more content into a short time."

## Student Engagement

In 2015, the Summer Dreamers Academy was opened up to a broader range of students. While some of the students were struggling with math, many were math achievers who were interested in strengthening their existing skills. Maben, who taught math at the South Hills Camp Site, says *Number Worlds* is a program that can engage a wide variety of learners.

"Middle school is a critical age for math learning," says Maben, "There is a huge jump in rigor to meet the Pennsylvania System of School Assessment (PSSA). *Number Worlds* is a really good starting place because it is easily adaptable for those not having trouble and those kids struggling with basic foundational skills."

Maben adds that because her community has a unique Nepali population, there is often a language barrier to work through, too. "They pick up on *Number Worlds* so well. In the beginning, they can't communicate. But by the end, they've made amazing progress," she says.

Maben believes the strength of *Number Worlds* lies in its simplicity. "It's very routine, but also flexible enough that it gives me freedom to add to it. For instance, if I'm focused on developing mental math, I have room to do that. And the games help me quickly build relationships when there are 25–40 students, so everyone is engaged and focused on success."

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**Bridget Maben**  
Grade 6-8 Math Teacher,  
The Summer Dreamers Academy

Maben understands math anxiety firsthand. As a student, she often spent long nights at her kitchen table doing math problems with good results, only to fail the test the next day. She believes that teachers can combat math anxiety by presenting foundational skills in a variety of ways.

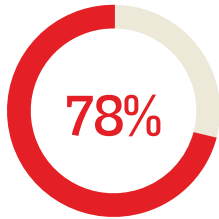
“The challenge is that people think about numbers in many different ways. That leaves a lot of room for misconceptions. Covering the basics is critical,” she says, “*Number Worlds* helps me cover the basics in ways that reach every student.”

Henry agrees that the activities in *Number Worlds* offer children a real-world context for learning. She utilized project-based learning and problem-solving experiences that built over the whole unit. “The kids

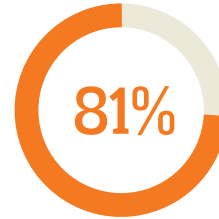
really responded to problem-solving activities with a family connection.” Henry says. “Children are more successful with work that is relatable.”

## Results

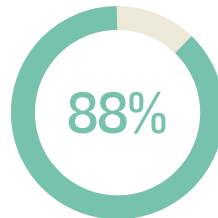
A poll taken at the end of the 2015 session of the Summer Dreamers revealed clear signs of success with *Number Worlds*:



78 percent of campers agreed that they liked their math class at Summer Dreamers.



81 percent of campers agreed that their math skills had improved.



88 percent of teachers agreed that the overall curricula were clear and easy to follow.



Best of all, campers frequently cited the academic classes as their favorite part of the Summer Dreamers Academy.

Henry attributes their success to the clear teaching instruction in *Number Worlds*. “The programs structure allowed teachers to make instructional decisions. It gave teachers alternative choices to meet students individual needs. It is very user-friendly”

Henry also believes that using the games and activities in *Number Worlds* helped to keep students engaged throughout the summer. “We centered the curriculum around the activities, not explicit teaching. Our mantra was that the worksheet was not the lesson. We supported explicit teaching by positioning the engaging activities cards as the vehicle for students to explore math concepts and build their number sense.”

“*We centered the curriculum around activities, not explicit teaching. Our mantra was that the lesson is not the worksheet. Instead, students were exploring activity cards that drove the curriculum.*”

Allison Henry  
K-5 Curriculum Writer  
The Summer Dreamers Academy

## The Future

Maben and Henry agree that *Number Worlds* can be as much of an asset during the regular school year as it is for summer school. In fact, Henry has already written it into her K-4 curriculum.

Maben says she will continue to include *Number Worlds* in her classroom, too. “It gives kids a very

strong base, and it gives me the opportunity to firm up misconceptions and hit the road running,” she says.

## About *Number Worlds*

*Number Worlds* is a blended-learning intervention program for grades PreK-8 that uses research-proven adaptive instruction to engage students and quickly bring them up to grade level.

