New math lessons that teachers say anyone can do. Really!

By San Jose Mercury News, adapted by Newsela staff on 03.30.15
Word Count 625

SAN JOSE, California — Do you hate math? Are you bad at it? It is probably not your fault. The problem may be the way math is taught in schools.

Many students have a hard time in math class.

Carol Dweck and Jo Boaler say lessons that are confusing can be the reason. Both are college professors. They are experts in how people learn.

The two women say they have come up with better ways to teach math. More and more math teachers think Dweck and Boaler are right. They are using the women’s ideas in their own classrooms.

**No One Is Confused After Class**

In a regular math class, kids do a lot of memorizing. They are expected to solve problems as quickly as possible.
In the new kind of class, students talk about math problems. Kids no longer simply memorize. Teachers often use pictures to explain ideas.

Each student is given a lesson at their own level. Teachers make sure no one is still confused at the end of the class.

There is nothing special about learning math, David Foster says. Foster helps teachers improve the way they teach math. It is just like learning anything else, Foster says. It is the same as learning "to play the piano or learning to play a sport," he said.

He does not think some people are just born bad at math. Everyone can learn to understand math, Foster says.

"A lot of it is about hard work and practice," he said.

**Everybody Gets A Wrong Answer Sometimes**

Dweck says that teachers should spend more time with students. They should help students try again if they get an answer wrong.

Getting an answer wrong is nothing to be ashamed of, Dweck says. Mistakes can help students learn.

Last summer Boaler offered a free online math course. About 85,000 people took the class.

Boaler’s lessons looked at the ways people use math in everyday life. Students talked about math problems. They did not simply memorize the right answer. Talking through problems helped students better understand how math works.

Many kids think that math class is only about getting the right answer quickly, Boaler said. "Then they get the idea that they can't do it," she added.

Regular math classes make you feel "like you have to do it faster," said sixth-grader Sahin Dokal. "I can't think that hard."

**Let's Talk Out The Problems**

Math classes should not be just about solving problems quickly, Dweck and Boaler say. They should be about getting all students to understand.

One good way to teach math is to talk through a problem. At the 49ers Academy in California, teacher David Hicks often asks his students to figure out a math puzzle. The students then solve the problem out loud, step by step. Hicks writes everything the students say on the class whiteboard.

Good teaching is very important. A good teacher will make sure no one is still confused at the end of a lesson.
Sixth-grader Michelle Rojas said she hated math when she was younger. Teachers were no help when they answered her questions. They “explained it in their own college way,” she said. They did not match their answer to “the grade level you were in.” These days she is understanding lessons much better.

**Math Is With Us Every Day**

Connecting math to everyday life is also important.

“The more you can connect the math to their life,” the better, said math teacher Mona Keeler. It makes math meaningful, she added.

Do the new ways of teaching math really work? Plenty of teachers certainly think so.

Keeler said her students have gotten much, much better at math. “I’ve seen humongous growth,” she said.

“We can have kids loving math,” Boaler said.
Quiz

1 Which paragraph in the section “Let’s Talk Out The Problems” contains an example of how to teach math to students using the new way?

2 Which sentence from the section “Everybody Gets A Wrong Answer Sometimes” BEST supports the sentence given below?

   The new way of teaching math aims to change how students feel about math.

   (A) They should help students try again if they get an answer wrong.
   (B) Getting an answer wrong is nothing to be ashamed of, Dweck says.
   (C) Talking through problems helped students better understand how math works.
   (D) Many kids think that math class is only about getting the right answer quickly, Boaler said.

3 Based on the section “Math Is With Us Every Day,” which answer option BEST explains why it is helpful to connect math to students’ lives?

   (A) It shows students that math can be fun to learn.
   (B) It is the easiest way for students to learn math.
   (C) It shows students that math can have a purpose.
   (D) It is the easiest way for teachers to teach math to students.

4 Based on the section “No One Is Confused After Class,” which sentence explains one way that the new math classes are different from the old math classes?

   (A) The old math classes require a lot of memorizing, and the new math classes require a lot of discussion.
   (B) The old math classes require a lot of hard work, and the new math classes do not require a lot of hard work.
   (C) The old math classes expect problems to be solved quickly, and the new math classes do not expect problems to be solved.
   (D) The old math classes expect each student to learn at their own level, and the new math classes expects all students to learn the same.
Answer Key

1 Which paragraph in the section “Let’s Talk Out The Problems” contains an example of how to teach math to students using the new way?

**Paragraph 17:**
One good way to teach math is to talk through a problem. At the 49ers Academy in California, teacher David Hicks often asks his students to figure out a math puzzle. The students then solve the problem out loud, step by step. Hicks writes everything the students say on the class whiteboard.

2 Which sentence from the section “Everybody Gets A Wrong Answer Sometimes” BEST supports the sentence given below?

_The new way of teaching math aims to change how students feel about math._

(A) They should help students try again if they get an answer wrong.

(B) **Getting an answer wrong is nothing to be ashamed of, Dweck says.**

(C) Talking through problems helped students better understand how math works.

(D) Many kids think that math class is only about getting the right answer quickly, Boaler said.

3 Based on the section “Math Is With Us Every Day,” which answer option BEST explains why it is helpful to connect math to students’ lives?

(A) It shows students that math can be fun to learn.

(B) It is the easiest way for students to learn math.

(C) **It shows students that math can have a purpose.**

(D) It is the easiest way for teachers to teach math to students.

4 Based on the section “No One Is Confused After Class,” which sentence explains one way that the new math classes are different from the old math classes?

(A) **The old math classes require a lot of memorizing, and the new math classes require a lot of discussion.**

(B) The old math classes require a lot of hard work, and the new math classes do not require a lot of hard work.

(C) The old math classes expect problems to be solved quickly, and the new math classes do not expect problems to be solved.

(D) The old math classes expect each student to learn at their own level, and the new math classes expects all students to learn the same.