

Math Engagement Workshop

Can you make the number of the day

K-5: Try making the number of the day using addition, subtraction, multiplication, division, and fractions

6-9: Try making the number of the day by writing an equation - variables on both sides, distributing, etc

10-12: Try making the number of the day under the discriminant, then write the numbers you chose as a quadratic

If you don't teach math, just choose one of the activities to do (or if you like another grade level better - go for it).

Ways I made 6:

The Learning Pit: The idea that students have to jump in and struggle first before they can really start trying and be successful at a problem.

- 1.) Concept - Students have to have some background knowledge of what they are doing.
- 2.) Conflict - The question/problem you are wanting them to solve.
- 3.) Construct - Thinking of ways they could potentially get to the answer (individually or as a group).
- 4.) Consider - Discuss what they just discovered and see if it relates to anything else.

Performance Tasks Sites:

- 1.) <http://www.insidemathematics.org/performance-assessment-tasks> - This site gives about 10 performance tasks per grade level. Each task gives the students plenty of work space, comes with a rubric and examples of student work, and offers a reflection piece at the end for the teacher.
- 2.) <https://www.achieve.org/equip/exemplars> - The lessons are really high interest. It is very detailed in the description of the lessons and walks the teacher through each step.
- 3.) The Model Math Project <https://www.isbe.net/Pages/Model-Mathematics-Curriculum.aspx> -

The Model Math Project was specifically designed for Illinois teachers when the Common Core came out. It has great lessons and it has a lot of good ideas for assessment.

Engagement Activities:

- 1.) Find the mistake: Put up a math problem that has a mistake that was commonly made the day before and see if students can find the mistake.
- 2.) Explain a math problem to a 1st grader: Have students pretend they are explaining how to do the math problem to a 1st grader and write down the steps.
- 3.) Make a math problem: Students make up their own math problems and give them to a partner to solve.
- 4.) One word splash: Students have to think of one word that describes what they learned that day.
- 5.) Buzzer Beater: Students are given a math problem to solve and then given 10 seconds to discuss with a partner before a random person is called on to give the answer.
- 6.) Add food when you can - Hershey bars for fractions, M&M's for probability, licorice pull and peels for graphing, etc.
- 7.) Pre-Test or Test with a partner - Allow students to choose a partner.
- 8.) Quick Writes - (Yes, quick writes in math) My favorites are to ask students to interpret what I just said or have students write to an absent classmate.
- 9.) Find your match - Answers on one card and problems on another (also a fun way to get them into partners).
- 10.) Hot Seat - Mark a seat with a sticky note to decide who has to answer the question.
- 11.) Think Pair Share - Have students find the answer on their own and then pair up to compare answers.
- 12.) Horizontal and Vertical Partners - One way students are paired up with someone at their learning level and the other way their learning level is varied.
- 13.) Give me all your answers - Write down all the different answers students came up with (this

works well when introducing a skill).

Motivational Strategies:

- 1.) Try to use real-world math problems as often as you can.
- 2.) Set goals for the students to work towards (make sure they are achievable).
- 3.) Be passionate and enthusiastic while you are presenting the material.
- 4.) Play games and do engagement activities when appropriate.
- 5.) Incorporate music when possible.

Resources:

14 Classroom Activities That Increase Student Engagement. (n.d.). Retrieved June 14, 2017, from <http://www.readinghorizons.com/blog/14-classroom-activities-that-increase-student-engagement>

Achieve. (n.d.). Retrieved June 14, 2017, from <https://www.achieve.org/>

Learning Pit. (n.d.). Retrieved June 14, 2017, from <http://www.jamesnottingham.co.uk/learning-pit/>

Performance Assessment Tasks. (n.d.). Retrieved June 14, 2017, from <http://www.insidemathematics.org/>

The Model Math Project. (n.d.). Retrieved June 14, 2017, from <https://www.isbe.net/Pages/Model-Mathematics-Curriculum.aspx>