RECONSIDERING WORKSHEETS
ELEMENTARY HANDOUT

What's Wrong With Worksheets?

- Problematic math worksheets have many of the same kinds of problems on them and often _____ on the bottom.
- They often feel like _____.
- They don't really build _____.
- They don't lead to great _____.
- They don't give us _____.

What Should We Be Doing Instead?

- **Problem One**

  Solve.

  812 – 357 =

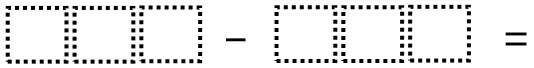
- **Problem Two**

  Using the digits 1 to 9 at most one time each, fill in the boxes to make two sets of three-digit numbers that form a true number sentence. You may reuse digits for each set.

  ☐☐☐ – 291 = ☐☐☐

- **Problem Three**

  Using the digits 1 to 9 at most one time each, fill in the boxes to make a difference that is as close to 329 as possible.

   – =

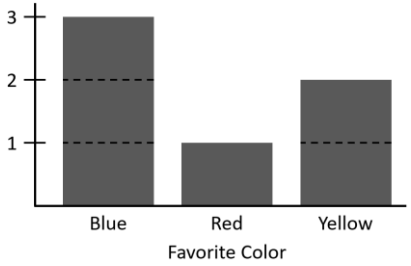
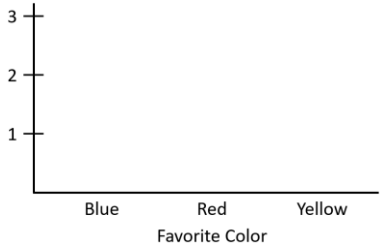
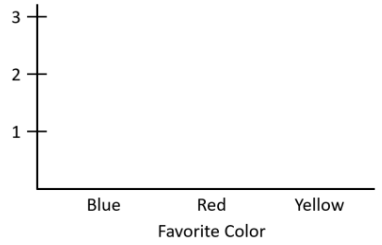
- A single _____ problem can replace a whole worksheet of math problems.

- If a student finds the answer in a few attempts, it likely means that the student used significant _____ to find an _____ way to solve the problem.

- If the surveyed students are like your students, then Problems 2 and 3 help us see that _____% and _____% of the class are students who correctly answered Problem 1 but have hidden misconceptions.

- My favorite reason for using _____ problems instead of worksheets is _____ _____.

Depth of Knowledge Matrix - Elementary Math

Topic	Adding 1-Digit Numbers (< 5)	Equality	Interpreting Data	Money
CCSS Stand.	• K.OA.5	• 1.OA.7	• 1.MD.4	• 2.MD.8
DOK 1 Example	Solve. $3 + 1 =$	Determine whether the number sentence is true or false. $4 + 1 = 5 - 2$	How many people were surveyed? 	If you have 1 quarter, 4 dimes, 2 nickels, and 3 pennies, how many cents do you have?
DOK 2 Example	Using the digits 1 to 5 at most one time each, fill in the boxes to create two true number sentences. $\square + \square = \square$	Using the digits 1 to 9 at most one time each, fill in the boxes to create two true number sentences. $\square + \square = \square - \square$	Make a graph that shows a possible result of 7 students' favorite color. 	Make 72¢ in two different ways with either quarters, dimes, nickels, or pennies.
DOK 3 Example	Using the digits 1 to 5 at most one time each, fill in the boxes to create a true number sentences with the greatest possible sum. $\square + \square = \square$	Using the digits 1 to 9 at most one time each, fill in the boxes to create a true number sentence with the greatest possible value. $\square + \square = \square - \square$	Make a graph that shows a possible result of 7 students' favorite color with red being the most popular color. 	Make 72¢ using exactly 9 coins that are either quarters, dimes, nickels, or pennies.

Depth of Knowledge Matrix - Elementary Math

Topic	Subtracting 3-Digit Numbers	Operations with Time	Comparing Fractions	Multiplying Decimals
CCSS Stand.	• 3.NBT.2	• 3.MD.1	• 4.NF.2	• 5.NBT.7
DOK 1 Example	Solve. $821 - 357 =$	What time will it be 14 minutes after 1:27 pm?	Place a < or > between the two fractions to make a true number sentence. $\frac{4}{7} \quad \frac{3}{5}$	Solve. $3.4 \times 2.5 =$
DOK 2 Example	Using the digits 1 to 9 at most one time each, fill in the boxes to make two different pairs of three-digit numbers that form a true number sentence. □□□-291=□□□	Using the digits 1 to 9 at most one time each, fill in the boxes to make a time that is 4:37 pm. □□ minutes after □:□□ pm	Using the digits 1 to 9 at most one time each, fill in the boxes to create two different fractions: one that is less than one half and one that is more than one half. $\frac{\square}{\square} < \frac{1}{2}$ and $\frac{\square}{\square} > \frac{1}{2}$	Using the digits 1 to 9 at most one time each, fill in the boxes to make a true number sentence. □.□ × 3.2=□.□
DOK 3 Example	Using the digits 1 to 9 at most one time each, fill in the boxes to make a difference that is as close to 329 as possible. □□□-□□□=	Using the digits 1 to 9 at most one time each, fill in the boxes to make the latest possible time. □□ minutes after □:□□ pm	Using the digits 1 to 9 at most one time each, fill in the boxes to create a fraction that is as close to 5/11 as possible. $\frac{\square}{\square}$	Using the digits 1 to 9 at most one time each, fill in the boxes so that the product is as close to 50 as possible. □.□ × □.□ =

How Do We Do It In Our Classrooms?

- When students want to give up with rigorous _____ problems, we can use an _____ so that they want to keep trying and develop a growth mindset about mathematics.

- Three options for integrating _____ problems include our _____, _____, and _____.

Where Do We Get More Problems?

- I can download hundreds of ready-to-go problems from kindergarten through calculus at _____.

What Comes Next?

Action	Do Now	Start Planning	Don't Do
Try these problems out with your students			
Find more problems I can use on the website.			
Incorporate them on assessments.			
Replace all traditional problems with these problems.			
Share these resources with colleagues to make them aware.			