# Benchmark Numbers: A Rational Approach

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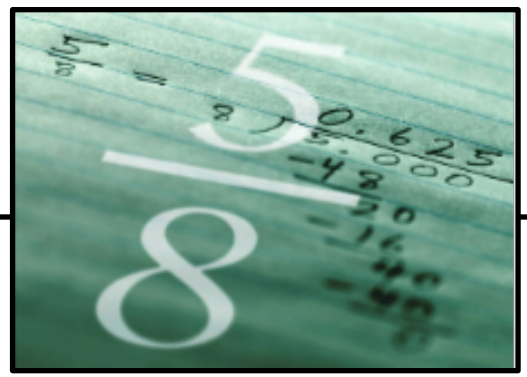


# Try this problem...

# Benchmarks are:

Familiar

0, 1/2, 1, 3/4, etc.

Point of reference

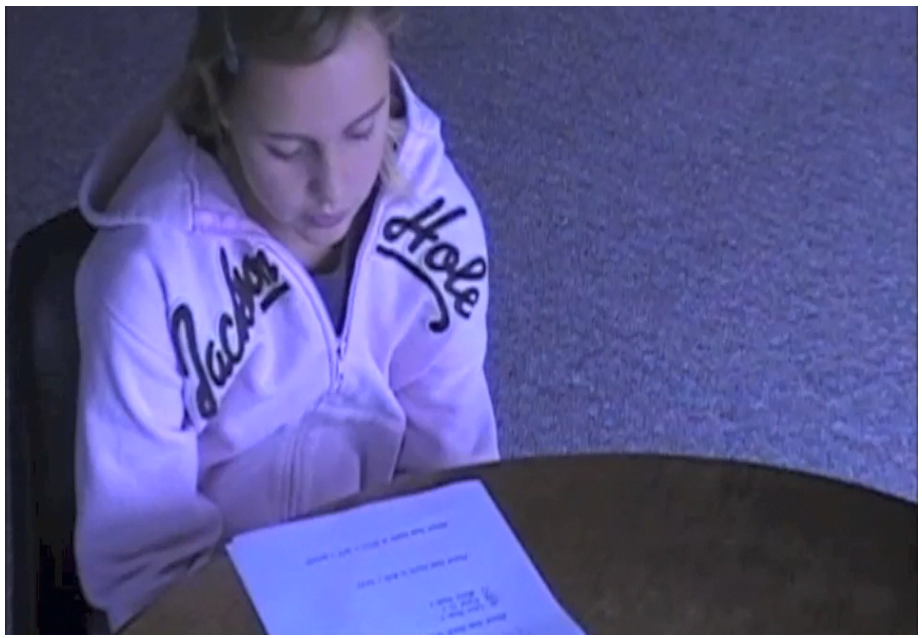
Can be fractions, decimals or percents

# Why Does It Matter?

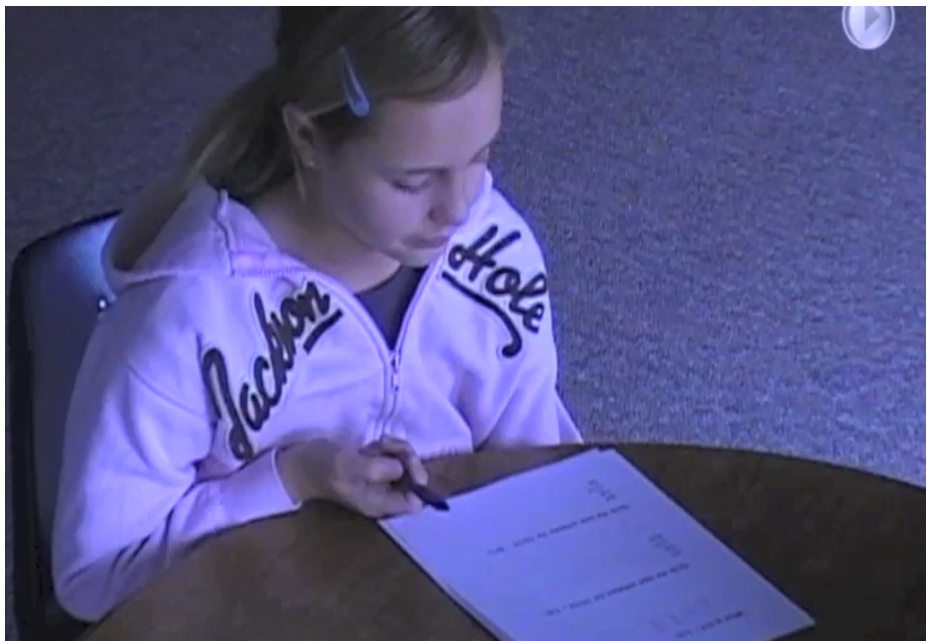
Students can learn algorithms but conceptual understanding is lacking (Moss & Case, 1999)
1/2 + 2/4 = 3/6
Developing an understanding of the magnitude of fractions with the use of benchmarks helps provide a “conceptual foundation” (Reys, Kim & Bay, 1999)
Successful students use benchmark strategies when comparing fractions (Clarke & Roche, 2009)
42% vs 89% success rate

# Benchmark Reasoning Helps!

Estimate: 8/5 + 3/7




Estimate: 12/13 + 7/8



# Your turn…

**Set 1:**

1.) Which is larger: 5/8 or 3/7?

2.) About how much is 7/8 - 10/21?

3.) Which total is more than 1?

a.) 2/5 + 3/7
b.) 1/2 + 4/9
c.) 2/8 + 2/11
d.) 4/7 + 1/2

**Set 2:**

1.) Which is larger?

a.) .27 or 8/13

b.) 3/8 or 63%

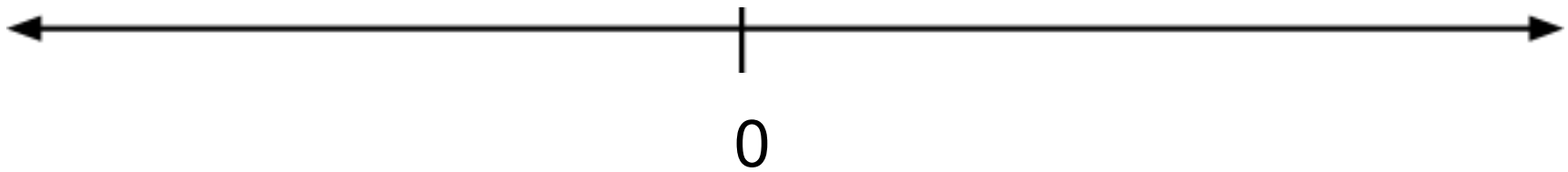
2.) Several pizzas were ordered. Miss Hock ate 8/17 of a pizza. Miss Dunn ate 49% of a pizza and Mr. Kim ate 3/5 of a pizza. Who ate the most?

# Natural Benchmark Use

## Change -17.8 into a percent.

Place these numbers on the number line:

0.28, -1 1/3, 0.5, 2.3, 1 1/4, 38%, -115%, 7/5, 0.56



# Classroom Connections

Model/point out student use when it happens or when a benchmark might be helpful

Choose problems that easily access half and whole benchmarks, then build

Offer problems with fractions, decimals, and percents

# The End

100% Finished!!!
Questions?