MasterMath

Number Sense

ESTIMATING WITH FRACTIONS
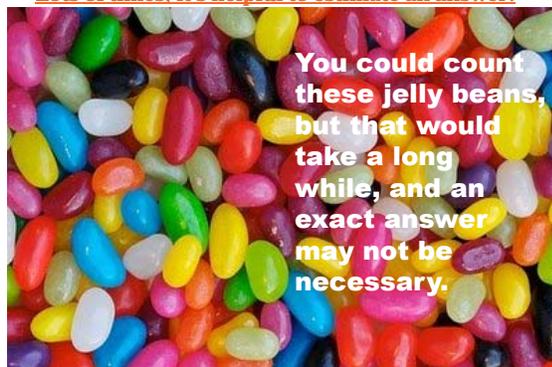

Lots of times, it's helpful to estimate an answer:

You could count these jelly beans, but that would take a long while, and an exact answer may not be necessary.

ESTIMATING WITH FRACTIONS

Lots of times, it's helpful to estimate an answer:

1. In a multiple choice test, you may be able to eliminate potential answers by estimating.

   Example:
   Joe was at bat 24 times, and made 13 hits. What was his batting average.

   a .153   b .368   c .541   d. .296

ESTIMATING WITH FRACTIONS

Example:
Joe was at bat 24 times, and made 13 hits. What was his batting average.

a .153   b .368   c .541   d. .296

13/24 ≈ 12/24 = ½ = .500

a .153   b .368   c .541   d. .296

ESTIMATING WITH FRACTIONS

Lots of times, it's helpful to estimate an answer:

2.   Often, you need to know if you have enough of something: enough time, enough money, etc.

Example:
You have $43.00, and you want to buy presents for your family. You want to get: 1) a shirt for your brother that costs $11.85; 2) a tool for your father that costs $21.25; and 3) vase for your mother that costs $19.95. Do you have enough money?

ESTIMATING WITH FRACTIONS

Example:
You have $43.00, and you want to buy presents for your family. You want to get: 1) a shirt for your brother that costs $11.85; 2) a tool for your father that costs $21.25; and 3) vase for your mother that costs $19.95. Do you have enough money?

$11.85 ≈ $12.00
$21.25 ≈ $21.00
$19.95 ≈ $20.00

$12.00
+$21.00
+$20.00
$53.00

ESTIMATING WITH FRACTIONS

Slide 1:

Methods of Estimating with Fractions:

Convert fraction to Compatible Numbers or Benchmarks

(numbers that are easy to compute mentally)

0, ¼, 1/3, ½, 2/3, ¾, and 1 are easier to compute mentally

31/60 ≈ ½, but a little larger (30/60 = ½)

5/16 ≈ 1/3, but a little smaller (5/15 = 1/3)

100 ½ ≈ 100

ESTIMATING WITH FRACTIONS

Slide 2:

Decrease the Numerator: $\frac{5}{8}$ $\frac{4}{8} = \frac{1}{2}$ Rounding Down

Increase the Numerator: $\frac{5}{8}$ $\frac{6}{8} = \frac{3}{4}$ Rounding Up

ESTIMATING WITH FRACTIONS

Slide 3:

Decrease the Denominator: $\frac{3}{7}$ $\frac{3}{6} = \frac{1}{2}$ Rounding Up

Increase the Denominator: $\frac{5}{9}$ $\frac{5}{10} = \frac{1}{2}$ Rounding Down

ESTIMATING WITH FRACTIONS

You try it!

3/5 of 80

(hint: "of" means multiply)

ESTIMATING WITH FRACTIONS

You try it!

3/5 ≈ ½, but a little larger

So 3/5 of 80 ≈ ½ of 80 ≈ 40

The actual answer will be a little more than 40 since 3/5 is a little more than 1/2

ESTIMATING WITH FRACTIONS

You try it!

6 ½ x 2 ⅛ =

ESTIMATING WITH FRACTIONS

You try it!

$6 \frac{1}{2} \times 2 \frac{1}{8} =$

$6 \frac{1}{2} \approx 7$, but a little smaller
$2 \frac{1}{8} \approx 2$, but a little bigger
$7 \times 2 = 14$

ESTIMATING WITH FRACTIONS

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You try it!

$3/5 \times 3/8$

ESTIMATING WITH FRACTIONS

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You try it!

$3/5 \times 3/8$

$3/5 \approx \frac{1}{2}$, but a little bigger
$3/8 \approx \frac{1}{2}$, but a little smaller
$\frac{1}{2} \times \frac{1}{2} = 1/4$

You're better off if you can round one number up, and the other down. If you round both up, your estimate will be higher than the actual answer. If you round both down, your estimate will be lower than the actual answer

ESTIMATING WITH FRACTIONS

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You try it!
2 ⅞ x 5 ⅛

ESTIMATING WITH FRACTIONS

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You try it!
2 ⅞ x 5 ⅛

$$2 \tfrac{7}{8} \times 5 \tfrac{1}{8}$$
$$3 \times 5 = 15$$

$$2 \tfrac{7}{8} \approx 2 \tfrac{8}{8} = 3$$
$$5 \tfrac{1}{8} \approx 5 \tfrac{0}{8} = 5$$

ESTIMATING WITH FRACTIONS

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You try it!

Now, try it on your own. Go to MasterMath.info,
download *Estimating with Fractions*,
and test your skill.

ESTIMATING WITH FRACTIONS

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