



## Ideas

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The *Ideas* this month asks students to make estimates and to be alert to the reasonableness of results. Estimating answers and getting approximate results are important skills for consumers when they are doing quick calculations. Alertness to the reasonableness of a result is a valuable skill to accompany calculator usage.

### **IDEAS For Teachers Levels: 1-4**

#### GUESS AND TEST

##### *Objective:*

Experience in estimating quantities and gathering data.

##### *Materials needed:*

- A clock or watch that measures seconds, or timers for measuring 15, 30, and 60 seconds.
- One copy of the worksheet per student.

##### *Review:*

How to measure 15, 30, and 60 seconds.

##### *Directions for teachers:*

1. Ask each student to guess how many times he or she could do the activities in the 15-second category. Have them write their estimates in the "Guess" boxes.

2. Then have students work with partners to time one another in doing the activities.
3. Next, students should compare their "Guess" and "Test" columns.
4. Have them follow the same procedure for the 30-second and 60-second questions.
5. When they have finished guessing and testing, ask them to circle their best guesses.

##### *Extension:*

1. Have students make up Guess-and-Test activities of their own.
2. Make a class "Record Book" for these and other activities.

### **IDEAS For Teachers Levels: 3-4**

#### GUESSTIMATES

##### *Objective:*

Practice in estimating quantities, gathering data, and inspecting data to find the most reasonable answer.

##### *Materials needed:*

- A clock or watch that measures seconds.
- Copies of the worksheet.

##### *Review:*

How to measure seconds and the number of seconds in a minute.

*Directions for teachers:*

1. Ask each student to guess how long it would take her or him to do each of the activities in the box at the top of the page. Have them write their estimates in the "Guess" column.
2. Have the students work with partners to time the activities.
3. For the second exercise, students should answer yes or no based on their past experiences. Have them discuss and defend each answer in this section.

*Extension:*

Have students make up some exercises like those in the second section to try on each other. They should try them out on themselves first.

### **IDEAS For Teachers**    *Levels: 5-6*

#### LEAD-FREE MATH

*Objective:*

Practice in rounding off numbers and estimating the results of addition, subtraction, multiplication, and division with whole numbers.

*Materials needed:*

- Six markers (chips, cubes, pieces of paper, beans, paper clips, or anything else that will fit in the squares on the worksheet) per student.
- Calculators.

*Review:*

How to round off numbers and make estimates.

*Directions for teachers:*

1. Without writing anything down, students should estimate the answer to each example in the squares and put a marker in the square that would give an answer closest to the answer given.
2. For the last two problems, students should put a marker on the

number that will give the indicated answers.

3. When they are finished, the students should check their answers with a calculator.

*Answers:*

184 - 129;  $636 \div 6$ ;  $195 \times 3$ ;  
1289 - 817; 34; 1000.

### **IDEAS For Teachers**    *Levels: 7-8*

#### GETTING THE LEAD OUT

*Objective:*

Practice in rounding off numbers and estimating the results of addition, subtraction, multiplication, and division problems with decimals.

*Materials needed:*

- Seven markers (chips, cubes, pieces of paper, beans, paper clips, or anything else that will fit in the squares on the worksheet) per student.
- Calculators.

*Review:*

How to round off numbers and estimate answers.

*Directions for teachers:*

1. Without writing anything down, students should estimate the answer to each of the examples in the squares and put a marker in the square that would give an answer closest to the number in the answer column.
2. For the last three problems, students should put a marker on the number that will give the indicated approximate answer.
3. Students should check their answers with a calculator when they are finished.

*Answers:*

$9 \div 2$ ;  $50.3 - 30.28$ ;  $0.6\overline{)18.6}$ ;  
 $0.1\overline{)22}$ ; 300; 48.8; 0.84.

# I D E A S

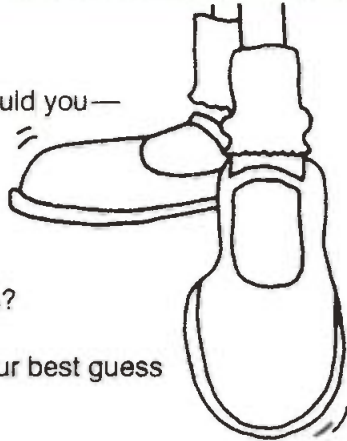
Name \_\_\_\_\_

## Guess and Test

In 15 seconds:

How many times could you—

- tap your foot?
- make a fist?
- blink your eyes?
- snap your fingers?



Go back and circle your best guess

Guess

Test

Guess	Test

In 30 seconds:

- How far could you count by fives?
- How many foods could you name?
- How many times could you tie your shoe?
- How many times could you tap your foot?

Go back and circle your best guess.

Guess

Test

Guess	Test

In 60 seconds:

- How far could you count by ones?
- How many people in your class can you name?
- How many numbers could you write?
- How many times could you tap your foot?

Go back and circle your best guess.

Are you a good guesser?  Yes  No

Guess

Test

Guess	Test

## Guesstimates

How long would it take you to—

- hop 10 times?
- snap your fingers 20 times?
- count backwards from 20?
- count by 5's to 100?
- write the numbers you say when you count by 2's to 50?
- tie your shoe 10 times? (or someone else's)
- write 40 X's on your paper?
- write your name, address, and telephone number?

Guess	Test

Go back and circle your best guess.  
Are you a good guesser?  yes  no



Would you believe—

- Gary hopped 10 times in 5 seconds?
- Ursula counted by 5's to 100 in 10 seconds?
- Emily wrote by 2's up to 40 in 75 seconds?
- Sheila counted backwards from 20 in 5 seconds?
- Steve snapped his fingers 40 times in 3 seconds?

Yes	No

## Lead-Free Math

(No pencils allowed)

55 =

$6 + 97$	$15 \times 25$
$100 - 25$	$184 - 129$

106 =

$636 \div 6$	$\begin{array}{r} 79 \\ + 87 \\ \hline \end{array}$
$\begin{array}{r} 136 \\ - 68 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ \times 6 \\ \hline \end{array}$

585 =

$\begin{array}{r} 834 \\ - 429 \\ \hline \end{array}$	$\begin{array}{r} 195 \\ \times 3 \\ \hline \end{array}$
$19 \overline{)1235}$	$\begin{array}{r} 439 \\ + 316 \\ \hline \end{array}$


472 =

$\begin{array}{r} 75 \\ 233 \\ + 115 \\ \hline \end{array}$	$\begin{array}{r} 1289 \\ - 817 \\ \hline \end{array}$
$\begin{array}{r} 174 \\ \times 3 \\ \hline \end{array}$	$1860 \div 5$

$12 \times$

12
418
34

is approximately 400



10 000
100
1000

$\div 23$  is approximately 40

Use a calculator to check your answers.

# I D E A S

Name \_\_\_\_\_

## Getting The Lead Out

(That is, don't use your pencil to figure these out)

The answer is—

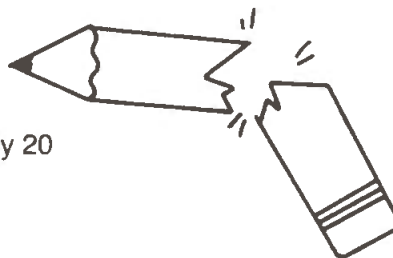
Which one is the problem?

4.5	$4.00 + 0.05$	$8.6 - 2.1$	$0.9 \times 0.5$	$9 + 2$
20.02	$400.04 \div 2$	$50.3 - 30.28$	$1.802 + 2$	$1001 \times 0.2$
21	$45.6 - 1.46$	$6 \overline{)18.6}$	$17.5 + 1.35$	$15.5 \times 0.2$
220	$0.1 \overline{)22}$	$180 + 0.40$	$2.2 \times 10$	$320 - 10.0$

$0.06 \times$

0.3
3
300

is approximately 20



488

4.88

– 0.1 is approximately 500

48.8

84

8.4

$\div 0.03$  is approximately 30

0.84

Check your answers with a calculator

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