



Teacher's Resource Masters

GRADE 3 VOLUME 2

Topics 8-16

- Home-School Connection Letters
- Pick a Project
- enVision®** STEM Activities
- Daily Review
- Reteach to Build Understanding
- Build Mathematical Literacy
- Enrichment
- Fluency Practice/Assessment
- Teaching Tools

Grade 3

Volume 2: Topics 8–16

Topic 8

Use Strategies and Properties to Add and Subtract

Topic 8 Home-School Connection
(English and Spanish)

Topic 8 Pick a Project A–D

enVision® STEM Activity.....8-5, 8-8

Daily Review (D)8-1 through 8-8

Reteach to Build

Understanding (R)8-1 through 8-8

Build Mathematical

Literacy (M)8-1 through 8-8

Enrichment (E)8-1 through 8-8

Topic 9

Fluently Add and Subtract within 1,000

Topic 9 Fluency Practice/Assessment

Topic 9 Home-School Connection
(English and Spanish)

Topic 9 Pick a Project A–C

enVision® STEM Activity.....9-1, 9-5

Daily Review (D)9-1 through 9-7

Reteach to Build

Understanding (R)9-1 through 9-7

Build Mathematical

Literacy (M)9-1 through 9-7

Enrichment (E)9-1 through 9-7

Topic 10

Multiply by Multiples of 10

Topic 10 Home-School Connection
(English and Spanish)

Topic 10 Pick a Project A–D

enVision® STEM Activity.....10-2

Daily Review (D)10-1 through 10-4

Reteach to Build

Understanding (R)10-1 through 10-4

Build Mathematical

Literacy (M)10-1 through 10-4

Enrichment (E)10-1 through 10-4

Topic 11

Use Operations with Whole Numbers to Solve Problems

Topic 11 Home-School Connection
(English and Spanish)

Topic 11 Pick a Project A–C

enVision® STEM Activity.....11-4

Daily Review (D)11-1 through 11-4

Reteach to Build

Understanding (R)11-1 through 11-4

Build Mathematical

Literacy (M)11-1 through 11-4

Enrichment (E)11-1 through 11-4

Topic 12

Understand Fractions as Numbers

Topic 12 Home-School Connection
(English and Spanish)

Topic 12 Pick a Project A–D

enVision® STEM Activity.....12-3, 12-7

Daily Review (D)..... 12-1 through 12-8

Reteach to Build

Understanding (R)..... 12-1 through 12-8

Build Mathematical

Literacy (M) 12-1 through 12-8

Enrichment (E) 12-1 through 12-8

Topic 13

Fraction Equivalence and Comparison

Topic 13 Home-School Connection
(English and Spanish)

Topic 13 Pick a Project A–C

enVision® STEM Activity.....13-2, 13-6

Daily Review (D)..... 13-1 through 13-8

Reteach to Build

Understanding (R)..... 13-1 through 13-8

Build Mathematical

Literacy (M) 13-1 through 13-8

Enrichment (E) 13-1 through 13-8

Topic 14

Solve Time, Capacity, and Mass Problems

Topic 14 Home-School Connection
(English and Spanish)

Topic 14 Pick a Project A–D

enVision® STEM Activity.....14-6, 14-9

Daily Review (D)..... 14-1 through 14-9

Reteach to Build

Understanding (R)..... 14-1 through 14-9

Build Mathematical

Literacy (M) 14-1 through 14-9

Enrichment (E) 14-1 through 14-9

Topic 15

Attributes of Two-Dimensional Shapes

Topic 15 Home-School Connection
(English and Spanish)

Topic 15 Pick a Project A–C

enVision® STEM Activity..... 15-4

Daily Review (D)..... 15-1 through 15-4

Reteach to Build

Understanding (R)..... 15-1 through 15-4

Build Mathematical

Literacy (M) 15-1 through 15-4

Enrichment (E) 15-1 through 15-4

Topic 16

Solve Perimeter Problems

Topic 16 Home-School Connection
(English and Spanish)

Topic 16 Pick a Project A–D

enVision® STEM Activity.....16-1, 16-5

Daily Review (D)..... 16-1 through 16-6

Reteach to Build

Understanding (R)..... 16-1 through 16-6

Build Mathematical

Literacy (M) 16-1 through 16-6

Enrichment (E) 16-1 through 16-6

Teaching Tools.....1 through 33

Name _____

Use Strategies and Properties to Add and Subtract

Dear Family,

Your child is learning strategies to add and subtract numbers using mental math. One strategy for solving addition problems using mental math is to break apart numbers to make a ten, because the ten is easier to add. Here's an example:

Find $157 + 34$.

You can make a 10 by adding 3 to 157.

Break apart 34 into $3 + 31$.

$$157 + 3 = 160$$

$$160 + 31 = 191$$

$$\text{So, } 157 + 34 = 191.$$

For subtraction, you can use the same strategy of making a ten.

Find $378 - 195$.

It is easier to subtract 200.

If you subtract 200, you subtract 5 more than 195.

You must add 5 to the answer.

$$378 - 200 = 178$$

$$178 + 5 = 183$$

$$\text{So, } 378 - 195 = 183.$$

Help your child practice using mental math to add and subtract. Here are activities you can do together.

Use Mental Math to Add and Subtract

Materials paper and pencil

Write different 3-digit numbers on eight slips of paper. Place the slips of paper in a bag and select two at random. Add the two numbers by making a ten and breaking apart numbers. Then, subtract the lesser number from the greater number using the same mental math strategy.

Observe Your Child

Provide your child with two 3-digit numbers to subtract. Then have him or her check the answer by using addition.

Usar estrategias y propiedades para sumar y restar

Estimada familia:

Su niño(a) está aprendiendo estrategias para sumar y restar números usando el cálculo mental. Una estrategia para resolver problemas de suma usando el cálculo mental es descomponer números para formar una decena, porque es más fácil sumar una decena. Aquí se muestra un ejemplo:

Halla $157 + 34$.

Puedes formar un 10 sumando 3 a 157.

Descompón 34 en $3 + 31$.

$$157 + 3 = 160$$

$$160 + 31 = 191$$

$$\text{Por tanto, } 157 + 34 = 191.$$

Para la resta, puedes usar la misma estrategia de formar una decena.

Resta $378 - 195$.

Es más fácil restar 200.

Si restas 200, restas 5 más que 195.

Debes sumar 5 a la respuesta.

$$378 - 200 = 178$$

$$178 + 5 = 183$$

$$\text{Por tanto, } 378 - 195 = 183.$$

Ayude a su niño(a) a practicar cómo calcular mentalmente para sumar y restar. A continuación se muestran actividades que pueden realizar juntos.

Calcular mentalmente para sumar y restar

Materiales papel y lápiz

Escriba distintos números de 3 dígitos en ocho pedazos de papel. Coloque los pedazos de papel en una bolsa y saque dos al azar. Sumen los dos números formando una decena y descomponiendo números. Luego, resten el número menor del número mayor usando la misma estrategia de cálculo mental.

Observe a su niño(a)

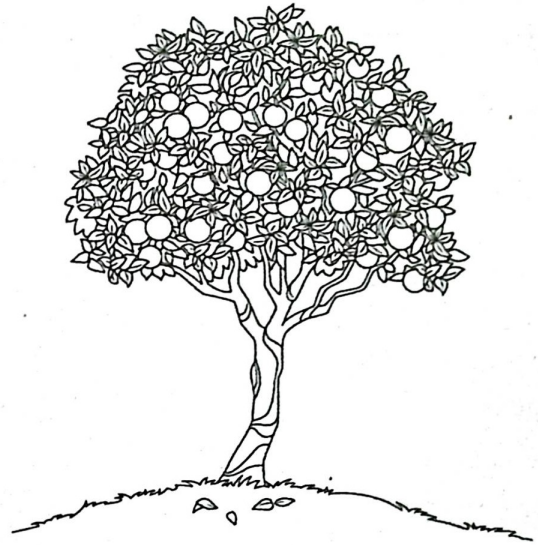
Dele dos números de 3 dígitos para restar y, luego, pídale que use la suma para comprobar la respuesta.

Oranges Are Appealing

Citrus is farmed commercially in states such as Florida, California, Arizona, and Texas. Oranges are one kind of citrus.

The first orange trees in the United States were most likely planted in the 1500s. This was done by the Spanish explorer Ponce de León, near St. Augustine, Florida.

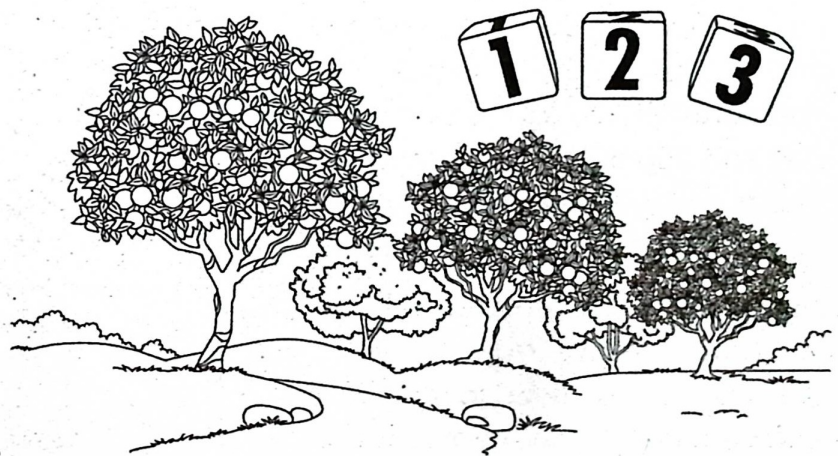
The early settlers saw that Florida's climate and soil were ideal for growing citrus. Citrus has flourished there ever since.



Your Project Plan a Citrus Grove

Plan a citrus grove! Your grove will have 5 sections: oranges, lemons, grapefruits, limes, tangerines. You are going to estimate the number of trees in each section and the amount of fruit each tree will grow.

Toss 3 number cubes. After each toss, use the numbers to record a 3-digit number, in any order. Toss the cubes five times to record a total of five 3-digit numbers. Each 3-digit number represents the number of trees in one section of your citrus grove. Round each 3-digit number to estimate how many trees you need to plant in each section. Record your estimates.



Next, toss 2 number cubes. After each toss, use the numbers to record a 2-digit number, in any order. Toss the cubes five times to record a total of five 2-digit numbers. Assign one 2-digit number to each of your sections. Round each 2-digit number to estimate how much fruit will grow on each tree in a section. Record your estimates.

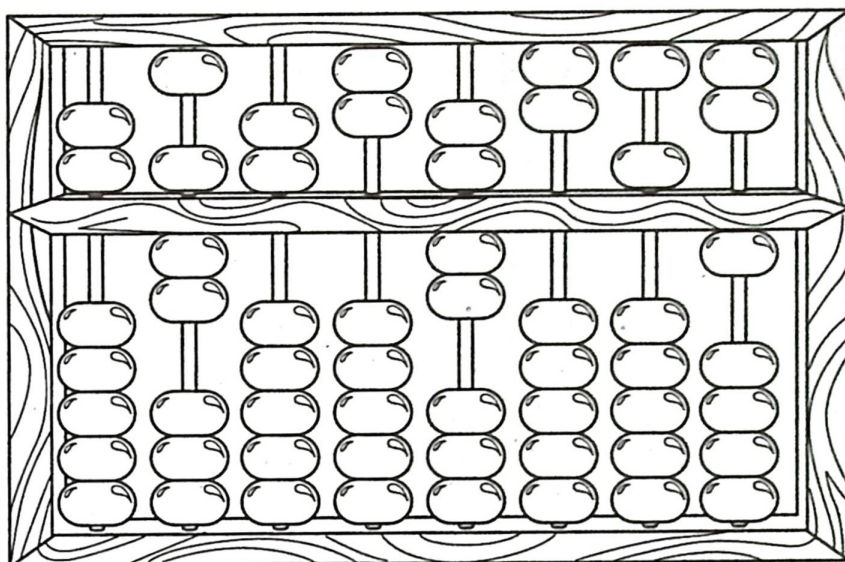
Create a poster. Show the estimate for the number of trees in each section and the estimate for the amount of fruit that will grow on each tree in each section. Make sure your labels are clear. What do you notice about the estimates?

You Can Count on Me

You may use a calculator in your class or at home. But have you ever wondered what people used *before* the calculator was invented?

Many thousands of years ago, people used a device called an abacus to add and subtract numbers.

The abacus was designed with beads that you would slide along wires. Certain beads had greater values, so you could add or subtract greater numbers with greater place values.



Your Project Make a Mental Math Game

Make a mental math game! Use number cubes. You make all the rules. In the game, you have to either add or subtract—or both—using mental math.

The rules might be like this: Find a partner. Toss 3 number cubes. After your toss, make a 3-digit number by writing the numbers in any order. Then toss 2 number cubes. After your toss, make a 2-digit number by writing the numbers in any order. Your partner has to add the 3-digit and the 2-digit numbers using mental math. Then your partner uses mental math to subtract the lesser number from the greater number. You decide the rules!

How do you score in the game? How do you win? Is there a way to get bonus points? You decide!

Mental Math

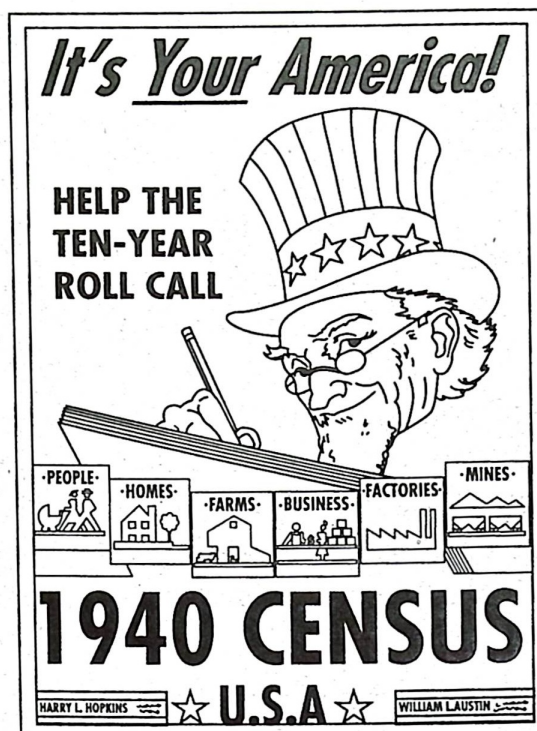
?



Making Sense of the Census

A census is an official count or survey of a population. In the United States, a national census takes place every 10 years.

A census records various details of a population. The data collected may be useful to help communities that need to build new schools or roads. A census is also important to see how families grow and how the population changes in certain areas.



Your Project Design a Class Census and Give an Estimation Test

Conduct a class census and survey the students in your class. You should develop two categories, such as the number of days until each student's birthday and the number of pages read each week. Be creative!

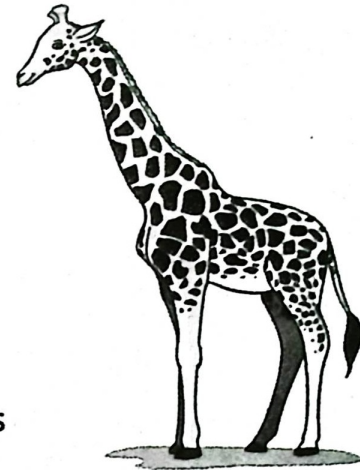
After you collect the data, make a display. Label your data clearly.

Now it is test time! Ask a partner to look at the data you collected. Then ask questions about your data, using estimation. For example, you might ask your partner to estimate the sum of a row, ask if the sum is greater or less than another number in the data set, or estimate differences among the data. Take turns, and make sure to have your partner explain how he or she found his or her answers.

	Days Until Next Birthday	Number of Pages Read Each Week
Martin	35	412
Vy	192	288
Yolanda	8	192
Sandra	59	188
Karl	348	96

The Giraffe

Did You Know? The giraffe is the tallest living land mammal. It ranges in height from about 6 ft (180 cm) at birth to about 18 ft (550 cm) at full maturity. Its neck can be up to 7 ft (210 cm) long. Its diet mainly consists of leaves from trees, which is why some people believe the giraffe has such a long neck.



A zoologist records the heights in centimeters of some giraffes she is studying.

	Adult Female	Adult Male	Young Male	Baby Female
Height	445 cm	525 cm	256 cm	195 cm

- 1 She estimates that the baby female giraffe is about 200 cm. What place could she have rounded to?

- 2 She rounds the heights of the adult male and adult female to the nearest hundred.
The height of the adult male is about _____ centimeters.
The height of the adult female is about _____ centimeters.
- 3 Another zoologist recommends that they round the heights to the nearest ten for more accuracy. What is the height of the young male rounded to the nearest ten? _____
- 4 **Extension** A zoologist estimates that the leaves of a tree are about 400 centimeters off the ground. Which giraffes are most likely to be able to reach the leaves? Explain.

