

Objectives:

- Students will divide positive integers from the multiplication table without remainders, as evidenced by them passing one-minute quizzes.
- Students will round monetary amounts to the nearest dollar, as evidenced by them completing a warm-up worksheet where they do so.
- Students will discover the rules of rounding numbers, as evidenced by them completing an in-class activity where they do so.
- Students will round decimal numbers to different place values, as evidenced by them completing a homework assignment where they do so.

Student Materials on Desk Corner:

- Homework #3-8
- Homework Checker
- Warm-up & Notes Checker

Student Materials for Class:

- Homework Log
- Binder Paper
- Pencils

Teacher Materials:

- “Minute Quiz 3-9” for each student
- “Warm-up 3-9” for each student
- “Easy Number Finder” handout with note taking guide on back for each student
- Laptops for each group with access to “Easy Number Finder” web page
- Several copies of “Notes #3-9”
- “Homework #3-9” handout for each student

Homework:

- Homework #3-9
- Continue 1 hour of ALEKS

Time	Activity
10 min	<p style="text-align: center;">MINUTE QUIZ AND ATTENDANCE</p> <p>Minute Quiz and Warm-up When the bell rings, quickly go around and put the minute quiz on each student’s desk, face down. Then, start everyone on the quiz at the same time and give everyone one minute. While students are working on the quiz, pass out the warm-ups so that students can work on them once they’re done with the minute quiz. After the minute is over, have a student collect the minute quizzes and give them to the teacher’s aide (TA) to grade.</p> <p>Attendance, Collect HW, and Warm-up Check While students work on the warm-up, take attendance and have the TA collect homework & stamp homework checkers. At the end of the allotted time, go around and stamp the students’ warm-up & notes checkers.</p>
15 min	<p style="text-align: center;">ACTIVITY EXPLANATION</p> <p>Introduction Using the warm-up, explain to students that we frequently want to use easier numbers. For example, if a hamburger costs 3 dollars and 5 cents (\$3.05), it’s much easier to use 3 dollars (\$3.00). It’s “close enough” to the original amount.</p> <p>Now, explain that there are many ways to get easier numbers. Write on the board a the number “123.456,” and stress that it’s big and complicated—not something we want to work with. Instead, we can use something close, but easier, such as 120 instead. Draw it on the board as shown below, and label it “A” since it’s one of many ways to pick an easy number.</p> $123.456 \xrightarrow[A]{\text{easy}} 120$ <p>Now, explain that another way to make 123.456 easier is to use 123. Draw on the board:</p>

Lesson 3-9 – Rounding Decimals

	$123.456 \xrightarrow[B]{\text{easy}} 123$ <p>The previous two easy numbers removed a lot of numbers. But, removing just one number can still make a number easier to work with. Draw on the board:</p> $123.456 \xrightarrow[C]{\text{easy}} 123.46$ <p>Stress that there are many different ways to pick easy numbers, and we just showed three ways. Today in class, they will be doing an activity in table partners where they are given an “easy number finder” on the computer. Students must figure out what the easy number finder is doing. For example, referencing the previous examples, when we start with 123.456, how does a type A easy number finder pick 120? What is it doing? That’s what students will be figuring out.</p> <p>Logistics Show students the “Easy Number Activity” worksheet (with note taking guide on the back). The top-left corner says which easy number finder they’re going to be using. They should work with their table partners to go through the worksheet and figure out what their easy number finder is doing.</p> <p>Explain that when a group is done with the front of the worksheet, they must check it with me. Then, I will give them a copy of the notes, and they will fill out the back of the worksheet.</p> <p>Finally, discuss with students the problem with laptops getting damaged, particularly keys disappearing. Show students the laptop inventory that was taken, and how each laptop is renumbered with what is missing. When returning laptops, students must first show me or the TA to check for damage. Then, they can put them in the laptop cart in their corresponding, numbered slots.</p>
30 min	<p style="text-align: center;">PAIR ACTIVITY</p> <p>Assign specific students to get laptops for their groups. While they do that, hand out the “Easy Number Activity” worksheet. During this time, the teacher and TA should circulate around the classroom to help students.</p>
25 min	<p style="text-align: center;">ALEKS</p> <p>Any remaining time that students have should be spent on ALEKS. Use this student work time to return graded homework.</p>

Solve the following division problems. You have exactly one minute!

$4 \div 1$

$110 \div 11$

$32 \div 8$

$24 \div 2$

$84 \div 12$

$48 \div 4$

$12 \div 12$

$77 \div 7$

$48 \div 8$

$8 \div 2$

$20 \div 2$

$32 \div 8$

Solve the following division problems. You have exactly one minute!

$4 \div 1$

$110 \div 11$

$32 \div 8$

$24 \div 2$

$84 \div 12$

$48 \div 4$

$12 \div 12$

$77 \div 7$

$48 \div 8$

$8 \div 2$

$20 \div 2$

$32 \div 8$

Solve the following division problems. You have exactly one minute!

$4 \div 1$

$110 \div 11$

$32 \div 8$

$24 \div 2$

$84 \div 12$

$48 \div 4$

$12 \div 12$

$77 \div 7$

$48 \div 8$

$8 \div 2$

$20 \div 2$

$32 \div 8$

Solve the following division problems. You have exactly one minute!

$110 \div 11$

$7 \div 1$

$55 \div 11$

$60 \div 5$

$8 \div 4$

$72 \div 9$

$20 \div 5$

$40 \div 4$

$55 \div 5$

$8 \div 8$

$45 \div 9$

$72 \div 9$

Solve the following division problems. You have exactly one minute!

$110 \div 11$

$7 \div 1$

$55 \div 11$

$60 \div 5$

$8 \div 4$

$72 \div 9$

$20 \div 5$

$40 \div 4$

$55 \div 5$

$8 \div 8$

$45 \div 9$

$72 \div 9$

Solve the following division problems. You have exactly one minute!

$110 \div 11$

$7 \div 1$

$55 \div 11$

$60 \div 5$

$8 \div 4$

$72 \div 9$

$20 \div 5$

$40 \div 4$

$55 \div 5$

$8 \div 8$

$45 \div 9$

$72 \div 9$

Numeracy
Minute Quiz 3-9 C

Name:
Date:

Period:

Solve the following division problems. You have exactly one minute!

$6 \div 2$

$24 \div 2$

$77 \div 11$

$64 \div 8$

$8 \div 1$

$84 \div 12$

$77 \div 11$

$11 \div 1$

$1 \div 1$

$9 \div 3$

$88 \div 11$

$36 \div 12$

Numeracy
Minute Quiz 3-9 C

Name:
Date:

Period:

Solve the following division problems. You have exactly one minute!

$6 \div 2$

$24 \div 2$

$77 \div 11$

$64 \div 8$

$8 \div 1$

$84 \div 12$

$77 \div 11$

$11 \div 1$

$1 \div 1$

$9 \div 3$

$88 \div 11$

$36 \div 12$

Numeracy
Minute Quiz 3-9 C

Name:
Date:

Period:

Solve the following division problems. You have exactly one minute!

$6 \div 2$

$24 \div 2$

$77 \div 11$

$64 \div 8$

$8 \div 1$

$84 \div 12$

$77 \div 11$

$11 \div 1$

$1 \div 1$

$9 \div 3$

$88 \div 11$

$36 \div 12$

Write each price to the nearest dollar.

Ex) \$5.99 is about \$6.00

1) \$1.99 is about _____

2) \$3.05 is about _____

3) \$7.95 is about _____

4) \$0.99 is about _____

5) \$2.75 is about _____

6) \$6.25 is about _____

7) \$3.95 is about _____

8) \$4.50 is about _____

9) \$8.85 is about _____

10) \$7.10 is about _____

11) \$4.65 is about _____

Write each price to the nearest dollar.

Ex) \$5.99 is about \$6.00

1) \$1.99 is about _____

2) \$3.05 is about _____

3) \$7.95 is about _____

4) \$0.99 is about _____

5) \$2.75 is about _____

6) \$6.25 is about _____

7) \$3.95 is about _____

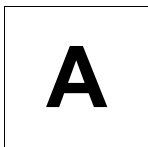
8) \$4.50 is about _____

9) \$8.85 is about _____

10) \$7.10 is about _____

11) \$4.65 is about _____

Type



Easy Number

Name:

Date:

Period:

Step 1: Using the computer, guess some numbers and see what easy number you get. Write them on the following table:

Number	Easy Number	Number	Easy Number	Number	Easy Number
123.456	120				
456.789	460				

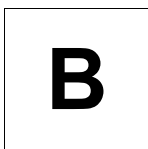
Step 2: What is the Type A *Easy Number Finder* doing? Write the rules below.

Step 3: Using the rules that you described in step 2, predict what easy number you will get for the following numbers. Then, use the *Easy Number Finder* to check your predictions.

Number	Prediction for Easy Number	Actual Easy Number
247.3		
12.53		
2345.67		

Step 4: Did your predictions match the actual easy numbers? What changes do you want to make to your rules from step 2?

Type



Easy Number

Name:

Date:

Period:

Step 1: Using the computer, guess some numbers and see what easy number you get. Write them on the following table:

Number	Easy Number	Number	Easy Number	Number	Easy Number
123.456	123				
456.789	457				

Step 2: What is the Type B *Easy Number Finder* doing? Write the rules below.

Step 3: Using the rules that you described in step 2, predict what easy number you will get for the following numbers. Then, use the *Easy Number Finder* to check your predictions.

Number	Prediction for Easy Number	Actual Easy Number
27.3		
132.53		
24.67		

Step 4: Did your predictions match the actual easy numbers? What changes do you want to make to your rules from step 2?

Type

C**Easy Number**

Name:

Date:

Period:

Step 1: Using the computer, guess some numbers and see what easy number you get. Write them on the following table:

Number	Easy Number	Number	Easy Number	Number	Easy Number
123.456	123.46				
456.789	456.79				

Step 2: What is the Type C *Easy Number Finder* doing? Write the rules below.

Step 3: Using the rules that you described in step 2, predict what easy number you will get for the following numbers. Then, use the *Easy Number Finder* to check your predictions.

Number	Prediction for Easy Number	Actual Easy Number
7.345		
12.530		
732.653		

Step 4: Did your predictions match the actual easy numbers? What changes do you want to make to your rules from step 2?

Easy Number Finder

- Type A Easy Number
- Type B Easy Number
- Type C Easy Number

Number:

[Get Easy Number](#)

The easy number for 123.456 is **120**

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>Numeracy - Easy Number Finder</title>
    <script language="JavaScript">
      function myround()
      {
        // Get which radio button is selected.
        var radioIndex = -1;
        var radioButtons = document.getElementById('myform').roundtype;
        for (var i = radioButtons.length-1; i > -1; i--)
        {
          if (radioButtons[i].checked == true)
          {
            radioIndex = i;
            break;
          }
        }

        // Get the place value to round to, which is the selected radio button.
        var place = radioButtons[radioIndex].value;

        // Get the number that needs to be rounded.
        var num = parseFloat(document.getElementById('num').value);

        // Declare a variable to store the rounded number.
        var ans;

        // Do different stuff if we're scaling to decimals (such as .1 or .01)
        // or to whole numbers (such as 1 or 10).
        if (place < 1)
        {
          // Get the digit before the rounded place value.
          var prevDigit = Math.round((num / place - Math.floor(num / place)) * 10);

          // Get the scaled portion of the number that is kept.
          ans = Math.floor(num / place);

          // See if we need to add for rounding.
          if (prevDigit >= 5)
          {
            ans ++;
          }

          // Scale down the rounded number.
          ans = ans * place;
        }
        else
        {
          ans = Math.round(num / place) * place;
        }

        // Fix any extra decimals (such as 123.46000000000001).
        // Calculate the number of decimals to keep.
        var decimals = 0;
        var tmp = place;
        while (tmp < .9)
        {
          decimals++;
          tmp *= 10;
        }
        // Keep the specified number of decimals.
        ans = ans.toFixed(decimals);

        // Print the easy number.
        document.getElementById('ans').innerHTML = 'The easy number for ' + num + ' is <b>' + ans + '</b>';

        // Focus on the text box, so that students can easily change the
        // number.
        document.getElementById('num').focus();

        // Return false so that we don't load a new page when submitting.
        return false;
      }
      function clearans()
      {
        document.getElementById('ans').innerHTML = '';
      }
    </script>
  </head>
  <body>
    <font size="+2"><b>Easy Number Finder</b></font><br><br>
    <form onsubmit="return myround();" id='myform'>
      <input type="radio" name="roundtype" value="10" checked>Type A Easy Number<br>
      <input type="radio" name="roundtype" value="1">Type B Easy Number<br>
      <input type="radio" name="roundtype" value=".01">Type C Easy Number<br>
      <br>
      Number: <input type="text" id="num" onkeypress="clearans();">
      <input type="button" onclick="myround();" value="Get Easy Number">
    </form>
    <br>
    <div id="ans"></div>
  </body>
</html>
```



Sharing a website on your computer

You can use the Apache web server software included with Mac OS X to host a website on your computer. Before doing so, you should already know how to create HTML pages and build websites.

To host a website on your computer:

- 1 Use the HTML editor of your choice to create your website. For your site's homepage, use the filename "index.html" so that web browsers can locate and open it automatically.
- 2 Put all of your website's pages, graphics, and any media files in your home directory's Sites folder.

The existing index.html page will be replaced with your new index.html page.

- 3 Choose Apple > System Preferences, and then click Sharing.
- 4 Select the Web Sharing checkbox.

To view webpages you put in your Sites folder, open a web browser and go to `http://your.computer.address/~yourusername/`.

For "yourusername," use your short user name, and make sure you include the ending slash (/). To find your short user name, open Accounts preferences and select your account in the list. Your short user name is displayed below your name.

To view pages you put on your hard disk in Library/WebServer/Documents, go to `http://your.computer.address`.

To find your computer's address, select Web Sharing in Sharing preferences. The address is displayed in the window.

To learn more, open the index.html file in Library/WebServer/Documents/manual/.

Related Topics

[web sharing](#)

Introduction

Rounding a number makes it _____, but _____ to use.

Ex: You ordered 5 hamburgers from In-n-Out. Each hamburger costs \$2.95. About how much is the total cost?

\$2.95 is about _____. So, $\$3 \times 5 =$ _____.

How to Round Numbers

Steps:

- Decide which is the _____
- Increase it by 1 if the next digit is _____ (this is called _____)
- Leave it the same if the next digit is _____ (this is called _____)

In other words, if the first digit removed is 5 or more, then _____ the last digit remaining by 1.

Ex: Round 123.456 to the nearest _____.

The last digit to keep is the tenths digit, which is a _____. Let's underline it: 123.456
The next digit is a _____. So, we want to round _____, which gives us _____ as the answer.

Ex: Round 123.456 to the nearest _____.

The last digit to keep is the tens digit, which is a _____. Let's underline it: 123.456
The next digit is a _____. So, we want to round _____, which gives us _____ as the answer.

Ex: Round 123.456 to the nearest _____.

“Nearest whole number” means we're getting rid of the _____ and only keeping the _____.

So, the last digit to keep is the _____ digit, which is a 3. Let's underline it: 123.456
The next digit is a _____. So, we want to round down, which gives us _____ as the answer.

Why does 5 Round up?

Think about a sport, such as basketball or soccer. You want the _____ number of players on each team.

- 0, 1, 2, 3, and 4 are on team “_____”
- 5, 6, 7, 8, and 9 are on team “_____”

Introduction

Rounding a number makes it less accurate, but easier to use.

Ex: You ordered 5 hamburgers from In-n-Out. Each hamburger costs \$2.95. About how much is the total cost?

\$2.95 is about \$3.00. So, $\$3 \times 5 = \15 .

How to Round Numbers

Steps:

- Decide which is the last digit to keep
- Increase it by 1 if the next digit is 5 or more (this is called *rounding up*)
- Leave it the same if the next digit is less than 5 (this is called *rounding down*)

In other words, if the first digit removed is 5 or more, then increase the last digit remaining by 1.

Ex: Round 123.456 to the nearest tenth.

The last digit to keep is the tenths digit, which is a 4. Let's underline it: 123.456
The next digit is a 5. So, we want to round up, which gives us 123.45 as the answer.

Ex: Round 123.456 to the nearest ten.

The last digit to keep is the tens digit, which is a 2. Let's underline it: 123.456
The next digit is a 3. So, we want to round down, which gives us 120 as the answer.

Ex: Round 123.456 to the nearest whole number.

“Nearest whole number” means we're getting rid of the decimals and only keeping the whole numbers.

So, the last digit to keep is the ones digit, which is a 3. Let's underline it: 123.456
The next digit is a 4. So, we want to round down, which gives us 123 as the answer.

Why does 5 Round up?

Think about a sport, such as basketball or soccer. You want the same number of players on each team.

- 0, 1, 2, 3, and 4 are on team “down”
- 5, 6, 7, 8, and 9 are on team “up”

Find the price of three items. Then, round the prices to the nearest dollar.

Item	Price	Rounded Price
Ex) <i>Snickers Candy Bar</i>	<i>\$0.50</i>	<i>\$1.00</i>
Ex) <i>In-n-Out Hamburger</i>	<i>\$2.95</i>	<i>\$3.00</i>
Ex) <i>Three burritos from the taqueria across the street</i>	<i>\$17.35</i>	<i>\$17.00</i>
1)		
2)		
3)		

Answer the following rounding questions.

Ex) See your notes for examples!

4) Round 382 to the nearest hundred.

5) Round 148 to the nearest hundred.

6) Round 653 to the nearest hundred.

7) Round 3.141 to the nearest tenth.

8) Round 4.253 to the nearest tenth.

9) Round 7.58 to the nearest tenth.

10) Round 8.395 to the nearest hundredth.