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en**Vi**sionMATH™

**Curriculum Night Overview**  
Lake Washington School District

PEARSON

# About enVisionMATH

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**“enVisionMATH provides a unique structure where students interact with the mathematics first and then visualize the mathematics through the visual learning features to create concrete understanding.”**



# Program Philosophy

## Problem-Based Interactive Learning

**Research says:**

*Understanding develops when solving a problem.*

### 2 Develop the Concept: Interactive

10-15 min **Interactive Learning**

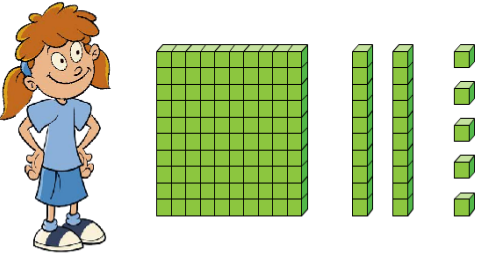
**Overview** Students understand our number system is based on groups of ten and that the first three place values are ones, tens, and hundreds.

**Essential Question** How can you read and write a number in the hundreds?

## A Visual Learning Approach

Hundreds

Place-value blocks can be used to show one hundred twenty-five.



100 + 20 + 5 = 125

Visual Learning Animations  
make each lesson come alive.

# Instructional Design

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## Four Step Lesson Design

enVision takes a singular four step lesson approach across all grades, all topics.

Consistency of the program benefits teachers and students through K – 5 math experience.

1. **Daily Spiral Review**
2. **Develop the Concept: Interactive**
3. **Develop the Concept: Visual**
4. **Close/Assess and Differentiate**



# 2. Develop the Concept: Interact

“Students learn best when they have the opportunity to interact with teachers and with other students.”

Students develop the math concept in a problem-based activity.

Pose the Problem: Students work on a problem (hands on and in partners) before receiving explicit instruction.

## 2 Develop the Concept: Interactive

Hands-On

### 10–15 min Interactive Learning

**Overview** Students understand our number system is based on groups of ten and that the first three place values are ones, tens, and hundreds.

**Essential Question** How can you read and write a number in the hundreds?

**Materials** Place-value blocks or Teaching Tool 24, Interactive Learning Recording Sheet 1

**Vocabulary** **place value**

Engage

**Set the Purpose** You know how to read and write numbers having one digit or two digits, such as 7 or 83. Today, you will learn how to read and write numbers having three digits.

**Connect** Where have you seen numbers in the hundreds? [Possible answers: money amounts, distances (in miles), number of items in a collection]

**Pose the Problem** How can you use place-value blocks to show 345? Make a list of other ways you can think of to write 345. Distribute place-value blocks. Give students time to work in small groups and share their responses.

**Academic Vocabulary** **Place value** tells you the value of each digit in a number according to its position in the number. Draw a place-value chart on the board, showing hundreds, tens, and ones. How is the tens place related to the ones place? [Its value is 10 times as great.] What place has a value 10 times as great as the tens place? [hundreds place]

**Use Common Objects** Distribute the recording sheet to small groups. Have the class work together to fill in the chart on the recording sheet for the number 345. How many hundreds blocks do you need to show 345? [3] How many tens? [4] How many ones? [5]

**Small-Group Interaction** Have students make a drawing of the place-value blocks on their recording sheets. Have students work in pairs to complete the recording sheet. Repeat the process above for the number 367 and then for 209.



Extend

Show 1 hundreds block, 2 tens blocks, and 10 ones blocks. Look at these place-value blocks. What number do the blocks show? What can you do to make it easier to see the number? [130. Trade the ten ones for one tens block.]

eTools Place-Value Blocks  
www.pearsoned.com/ednet

**Link to Investigations, Second Edition**  
Joint-Usage Master Plan  
Blended Instruction [Plan 1]:  
Topic 1 and Units 1, 3, and 8

# 3. Develop the Concept: Visual

Visual Learning Bridge: step by step bridge between the problem-based activity and the lesson exercises.

Bridge can be taught through print or as a digital animation.

**Develop the Concept: Visual**

**Visual Learning**

**Hundreds**

How can you read and write a number in the hundreds?  
All numbers are made from the **digits** 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9.  
**Place value** is the value of the place a digit has in a number.

Our fingers are sometimes called digits. How could that help you remember that 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 are called digits?  
[Sample response: We have 10 fingers and there are 10 digits.] What digits are in the number 125? [1, 2, and 5]

You can show 125 in different ways. One way you can show 125 is to use place-value blocks.

1 hundred, 2 tens, 5 ones

**Lesson 1-1**

**Hundreds**

How can you read and write a number in the hundreds?  
All numbers are made from the **digits** 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9.  
**Place value** is the value of the place a digit has in a number.

**Another Example** How can you show numbers on a place-value chart?

The place-value chart shows the value of each digit in 805.

8	0	5
Hundreds	Tens	Ones

The value of the 8 is 8 hundreds, or 800. The value of the 0 is 0 tens, or 0. The value of the 5 is 5 ones, or 50.

**Try It!**

- 1, expanded to one, 800 can be written as 800 + 50. Why are these only 2 addends in this expanded form?  
There are no ones in 850. The sum of 800 and 50 is 850.

**Do you know HOW?**

For 1–3, write each number in standard form.

- 234
- $400 + 50 + 3$
- 653
- eight hundred twenty-nine
- 879

**Do you UNDERSTAND?**

- How does a place-value chart show the value of a number?  
**See margin.**
- The example at the top of the page uses the number 125. What is the value of each digit in 125?  
1: 100, 2: 20, 5: 5
- How do you know that 37 and 307 do not have the same number?  
In 37, the 3 is in the tens place. In 307, the 3 is in the hundreds place.

**Place-value** blocks can be used to show one hundred twenty-five.

Place-value blocks can be used to show one hundred twenty-five.

Place-value blocks can be used to show one hundred twenty-five.

After the Bridge, students complete independent work and problem solving questions.

# 4. Close/Assess and Differentiate

Quick Checks at the end of each lesson informs teachers of student progress along the way, giving information to differentiate instruction.

### 4 Close/Assess and Differentiate

**Close**

**Essential Understanding** Some real-world problems involving joining, separating, part-part-whole or comparison can be solved using addition. There are certain addition relationships that are always true and can be used to simplify calculations. In this lesson we learned different ways to model addition and use properties of addition to help us solve problems.

**Assess**

Use the **Quick Check** to assess students' understanding.

Quick Check Master

Name: \_\_\_\_\_

1. Write the number sentence that represents each situation.

a. There are 5 red marbles and 3 blue marbles in a bag. How many marbles are there in all?

b. There are 10 students in a class. 4 are boys. How many girls are there in the class?

2. Draw a picture to show how you solve each problem.

a.  $5 + 3 = ?$

b.  $10 - 4 = ?$

3. Write a number sentence that represents each situation.

a. There are 10 students in a class. 4 are boys. How many girls are there in the class?

b. There are 5 red marbles and 3 blue marbles in a bag. How many marbles are there in all?

4. Write a number sentence that represents each situation.

a. There are 10 students in a class. 4 are boys. How many girls are there in the class?

b. There are 5 red marbles and 3 blue marbles in a bag. How many marbles are there in all?

See students' samples at the right.

Exercises 1–3 are worth 1 point each. Use the rubric to score Exercise 4.

Exercise 4

**Writing to Explain** Students apply an understanding of the Identity Property of Addition to explain how to solve  $5 + 0 = 5$ .

**ELL: Model Thinking Aloud** Guide students by modeling the thought process you might follow to explain adding zero. Here are some examples: *What does it mean to add?* [to put groups together] *What if you have a group of 0?* [nothing to add] *How could you draw a group of 0?* [draw a group with nothing in it, like an empty box or jar.]

**Student Samples**

**4-point answer** The student has given a clear and complete explanation for finding the sum of  $5 + 0$ , has drawn a suitable picture, and has included the related number sentence.

**3-point answer** The student has given an adequate explanation for finding the sum of  $5 + 0$  and has drawn a suitable picture.

**2-point answer** The student has given a vague explanation for finding the sum of  $5 + 0$  and has drawn a picture.

**1-point answer** The student has given the correct sum without an explanation or picture.

### Differentiated Instruction

Intervention

Addition Properties

10 min

**Materials** [per group] Two-color counters (for Teaching Tool 21), 5 index cards (4 with "+" and 1 with "=")

• Write on the board:  
 $3 + 5 = 5 + 3$ ,  $7 + 0 = 0 + 7$ , and  $8 + (3 + 5) = (8 + 3) + 5$ .

• Have students model each addition sentence using two-color counters. (For example: 3 yellow + 3 red + 5 red = 8 yellow + 3 yellow + 5 red.)

• Ask students to explain how the number sentence shows the Commutative, Identity, and Associative Properties, respectively.

• Repeat the activity, with new number sentences.

On-Level

Tic Tac Toe

10 min

**Materials** Two number cubes, 20 squares in one color and 20 in another color, Center Activity 2-1 #4

On each turn, a student or team of two tosses two cubes to display two different one-digit numbers, and then applies the Commutative Property of Addition. That student or team orders the addends in two different ways, and verifies that the sum is the same for each way.

**ELL: Report Back** To check understanding, ask a student to repeat and complete this sentence: The [Commutative Property of Addition] permits you to change the order of the addends in any way and the total remains the same.

Advanced

Tic Tac Toe

10 min

**Materials** Two number cubes, 20 squares in one color and 20 in another color, Center Activity 2-1 #4A

On each turn, a student or team tosses two cubes and adds 9 to the two single-digit numbers. That student or team explains how to apply the Associative Property of Addition by grouping the three addends in two different ways to determine the sum.

Reaching Master

Addition Meaning and Properties

10 min

**Materials** [per group] Two-color counters, 10 index cards (5 with "+" and 5 with "=")

• Write on the board:  
 $3 + 5 = 5 + 3$ ,  $7 + 0 = 0 + 7$ , and  $8 + (3 + 5) = (8 + 3) + 5$ .

• Have students model each addition sentence using two-color counters. (For example: 3 yellow + 3 red + 5 red = 8 yellow + 3 yellow + 5 red.)

• Ask students to explain how the number sentence shows the Commutative, Identity, and Associative Properties, respectively.

• Repeat the activity, with new number sentences.

Precision Master

Addition Meaning and Properties

10 min

**Materials** [per group] Two-color counters, 10 index cards (5 with "+" and 5 with "=")

• Write on the board:  
 $3 + 5 = 5 + 3$ ,  $7 + 0 = 0 + 7$ , and  $8 + (3 + 5) = (8 + 3) + 5$ .

• Have students model each addition sentence using two-color counters. (For example: 3 yellow + 3 red + 5 red = 8 yellow + 3 yellow + 5 red.)

• Ask students to explain how the number sentence shows the Commutative, Identity, and Associative Properties, respectively.

• Repeat the activity, with new number sentences.

Enrichment Master

Add 8 Us

10 min

**Materials** [per group] Two-color counters, 10 index cards (5 with "+" and 5 with "=")

• Write on the board:  
 $3 + 5 = 5 + 3$ ,  $7 + 0 = 0 + 7$ , and  $8 + (3 + 5) = (8 + 3) + 5$ .

• Have students model each addition sentence using two-color counters. (For example: 3 yellow + 3 red + 5 red = 8 yellow + 3 yellow + 5 red.)

• Ask students to explain how the number sentence shows the Commutative, Identity, and Associative Properties, respectively.

• Repeat the activity, with new number sentences.

## Using the Quick Check as a guide, teachers can differentiate for student needs.

eTools Counters

www.pearsonedment.com

Math Facts Practice: Addition

www.pearsonedment.com

eTools Place-Value Blocks

www.pearsonedment.com

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# Differentiated Instruction Opportunities

## Meeting Individual Needs

### Below Level

#### Considerations for Below-Level Students

Students experiencing difficulty comparing numbers will benefit from numerous opportunities designed to reinforce understanding of place-value concepts.

- Have students record numbers in a place-value chart and use the tool to give the value of each digit.
- Ask students to create a model of a number with place-value blocks and use the model to write the number in expanded form.

#### Below-Level Activity

Use with Lesson 1

#### Name That Number



15 min

#### Materials

Place-value blocks or Teaching Tool 24, container, strips of paper each labeled with one of the following numbers: 537; 719; 2,945; 84; 621; 3,742; 55; 1,068

- Put the paper strips in a container. Have the first

### Advanced

#### Considerations for Advanced Students

Students who quickly master place-value concepts can learn how to use this knowledge to show money amounts in different ways.

### ELL



#### Considerations for ELL Students

Repeated oral language practice with the terms used to indicate place value will help English learners read, write, compare, and order numbers.

- **Beginning** Have students write the place value terms *ones*, *tens*, *hundreds*, and *thousands* on index cards. Read each word together. Then have students arrange the cards from least to greatest value.
- **Intermediate** Provide students with word cards for *ones*, *tens*, *hundreds*, and *thousands*. Read each word together. Then have students arrange the cards across a pocket chart. Write the following numbers on the board: 153; 45; 3,590; 5,200. As you point to each number, have students hold up the word card that names the place value of the digit 5.

**Advanced** Write the word *period* on the board and have students read the word aloud. Remind them that in math a period is a group of three digits in a number, separated by a comma. Write 4,782 on the board. Ask students how the comma can help them read the number. (You read the number, saying the name of the period when you get to the comma.) Have students say the number and identify the place value of each digit.

### Special Needs

#### Considerations for Special Needs Students

Repeated use of place-value blocks will help special needs students grasp the concept of place value, which is needed to compare numbers.

- Write a 2-digit number on the board. Have a student model the number with place-value blocks. Then have students use the model to write the number in expanded form. Repeat the process with various 3-digit and 4-digit numbers.
- Once students are proficient at creating a model of a number, switch tasks. Display models of 2-digit, 3-digit, and 4-digit numbers and have students express each in standard form.
- Have a student express any given number first as a model of place-value blocks, then as a pictorial model, and finally in standard/expanded form. Concrete → Pictorial → Abstract

#### Special Needs Activity

Use with Lesson 1-2

#### Name the Numbers

Built in guidance for teachers to reach all students.

# Problem – Solving Process

Skills and strategies are taught in problem-solving lessons, at least one lesson per topic.

## 3 Develop the Concept: Visual

### Visual Learning

#### Problem Solving Draw a Picture and Write a Number Sentence

Jeff is setting up the sand-painting booth at the school carnival. He put the sand from one bag of sand into 5 buckets. If each bucket has the same amount of sand, how much sand is in each bucket?



What is the total amount of sand? [45 pounds] How many buckets are being filled with sand? [5 buckets]

#### Plan and Solve

Use a diagram to show what you know.

45 pounds

?	?	?	?	?
---	---	---	---	---

Amount of sand in each bucket

You know the total amount of sand and that there are 5 buckets. Draw a picture to show how much sand is in each bucket.

### Visual Learning

**Purpose** Call students' attention to the Visual Learning diagram at the top of the page. In this lesson you will draw a picture and write a number sentence to solve problems.

#### Example

Draw a diagram for the prize problem different from the diagram for the sand problem? [The sand problem is a sharing problem. You know the number of groups, but not how many are in each group. The prize problem is a repeated subtraction problem. You know how many are in each group, but not how many groups there are.]

Can you see if their explanation is correct by testing it. Suppose Alison sets the 48 prizes in 4 rows. How many prizes are in each row? [12 prizes] Did the number in each row increase or decrease if the number of rows decreased? [The number in each row increased.]

### Problem Solving

#### 8-6 Draw a Picture and Write a Number Sentence

Jeff is setting up the sand-painting booth at the school carnival. He put the sand from one bag of sand into 5 buckets. If each bucket has the same amount of sand, how much sand is in each bucket?



#### Another Example

Alison is setting up the prize booth. She has 48 prizes. She will put 8 prizes in each row. How many rows can she make?



#### Plan and Solve

Use a diagram to show what you know.

48 prizes

8	8	8	8	8	8	8	8
---	---	---	---	---	---	---	---

Prizes in each row

#### Answer

Write a number sentence.

$48 \div 8 = 6$

Alison can make 6 rows.

#### Check

Make sure the answer is reasonable. Use multiplication or repeated addition to check.

$6 \times 8 = 48$

or

$8 + 8 + 8 + 8 + 8 + 8 = 48$

#### Explain

1. Explain how you can check the quotient in division by using either multiplication or addition. See margins.
2. Number Sense: If Alison wants fewer than 6 rows of prizes, should she put more or fewer prizes in each row? Explain your thinking. See margins.

#### Answers

1. You can check the quotient by using a multiplication fact that is in the same fact family as the division fact. You can also use repeated addition to check that the sum matches the dividend in the division exercise.
2. She should put more prizes in each row. If you increase the number in each row, you will have fewer rows.

Name: Merek Teaching Tool 1

### Problem-Solving Recording Sheet

**Problem:** *Carla says that since 9 is greater than 1, the number 996 is greater than 1,330. Do you agree? Why or why not?*

<b>Find?</b> Is 996 greater than 1,330?	<b>Know?</b> Comparing numbers: if all about the place value, number with the largest digit in the highest place value has the greatest value.	<b>Show the Problem?</b> 996: <table border="1"><tr><td>9</td><td>9</td><td>6</td></tr></table> 1,330: <table border="1"><tr><td>1</td><td>3</td><td>3</td><td>0</td></tr></table>	9	9	6	1	3	3	0	<b>Solution?</b>
9	9	6								
1	3	3	0							
<b>Answer?</b>	<b>Check? Reasonable?</b>									

**Strategies?**

Show the Problem:

- Circle the Place Value
- Circle an Expanded Form
- Make a Model
- Make a Chart
- Use a Number Line
- Use a Place Value Chart
- Use a Base Ten Blocks
- Use a Number Line
- Use a Place Value Chart
- Use a Base Ten Blocks
- Use a Number Line

Problem solving practice accompanies every lesson.

# Student Materials

K – 2nd

How many cubes are there in all?

Make 2 groups of cubes. Each group is a **part**.

Add the parts to find the **sum**.

You can write an **addition sentence** to show the parts and the whole.

12 is the **sum**!

Use the plus sign to add the parts.

$4 + 8 = 12$

4 plus 8 equals 12.

The 2 parts together make the **whole**.

**Guided Practice**  
Write an addition sentence for the picture.

1.  $4 + 2 = 6$

2.  $+ =$

3.  $+ =$

4.  $+ =$

**Independent Practice**  
Write an addition sentence for the picture.

5.  $+ =$

6.  $+ =$

7.  $+ =$

8.  $6 + \square = 12$

**Word Bank**  
part sum  
whole plus (+)  
add equals (=)  
addition sentence

**Algebra** Fill in the missing part, then complete the addition sentence.

Do you understand? You have some red cubes and some blue cubes. How can you show how many cubes in all?

4 four five 5

Primary students will work from a color, folded consumable each day.

3rd – 5th

**enVisionMATH**

Scott Foresman-Addison Wesley

**Review What You Know!**

**Vocabulary**  
Choose the best term from the box.  
• breaking apart • product  
• factor • multiples

1. In the number sentence  $8 \times 3 = 24$ , 8 is 3's  $\square$ .

2. In the number sentence  $2 \times 6 = 12$ , 12 is the  $\square$ .

3.  $191 \div 67 = (191 \div 9) + 58$  is an example of using the 2 strategy.

4. Tell me  $\square$  of the number 3, multiply numbers by 3.

**Skip Counting**  
Find the term that comes next in the pattern.

5. 2, 4, 6, 8,  $\square$  6. 20, 25, 30, 35,  $\square$

7. 6, 9, 12, 15,  $\square$  8. 8, 16, 24, 32,  $\square$

9. 7, 14, 21, 28,  $\square$  10. 11, 22, 33, 44,  $\square$

**Multiplication**  
Copy each array and circle equal groups of 3.

11.  $\begin{array}{cc} \square & \square \\ \square & \square \end{array}$  12.  $\begin{array}{ccc} \square & \square & \square \\ \square & \square & \square \end{array}$

13. **Writing to Explain** Henry is thinking of a whole number. He multiplies the number by 5, but the result is less than 5. What number is Henry thinking about? Explain.

How many rooms are in the White House? You will find out in Lesson 3-6.

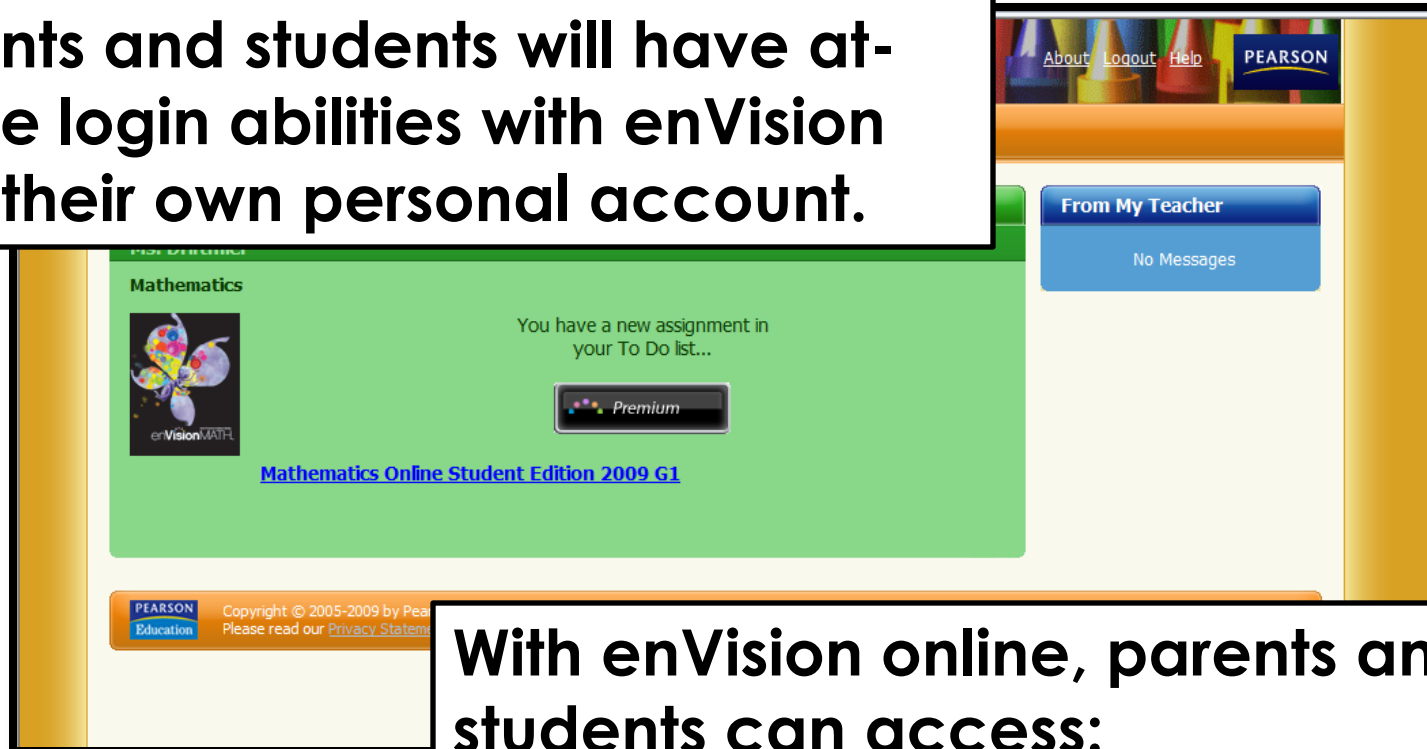
How many miles long is the Appalachian Trail? You will find out in Lesson 3-3.

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Intermediate grades will use hard bound color text books.

# Home-School Connection

Parents and students will have at-home login abilities with enVision and their own personal account.

A screenshot of the enVision online student interface. The top navigation bar includes links for 'About', 'Logout', and 'Help', along with the 'PEARSON' logo. Below this is a blue button labeled 'From My Teacher' with the text 'No Messages' underneath. The main content area has a green background and features a 'Mathematics' header. On the left is a colorful butterfly icon with 'enVisionMATH' text. In the center, a message reads 'You have a new assignment in your To Do list...' with a 'Premium' badge below it. At the bottom of the green area is a link for 'Mathematics Online Student Edition 2009 G1'. The footer contains the 'PEARSON Education' logo and copyright information: 'Copyright © 2005-2009 by Pearson Education. Please read our Privacy Statement.'

With enVision online, parents and students can access:

- Student textbook
- Practice Worksheets
- Digital Activities
- Computer Games