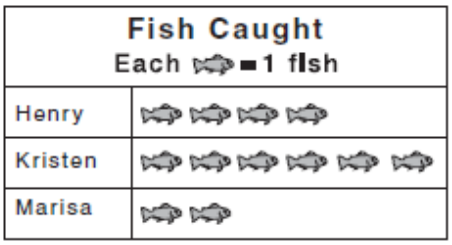
Warmup

Look at the graph. How many fish did Henry and Kristen catch all together? Write a number sentence to support your answer.



4	6	10	12
A	**B**	**C**	**D**

Write these numbers in expanded notation

12_____ 104 _____

68_____ 185 _____

Show your answer on a bar model, ten frame or number line

9 + 6 = _____

Draw coins to show $.35 two different ways

Grade 2- Comparing Numbers

NS 1.2 Use words, models, and expanded forms to represent numbers
NS 1.3 Order and compare whole numbers to 1,000 by using the symbols <, =, >.
2.NBT.3 Read and write numbers to 1,000 using base-ten numerals, number names and expanded form
2.NBT.4 Compare two three-digit numbers based on meanings of the hundreds, tens and ones digits, using >, =, and < symbols to record the results of comparisons.

Objectives:

- Students will build two digit numbers with concrete models.
- Students will write expanded notation with number models.
- Students will compare numbers using their models and drawings.
- Students will express the numbers as inequalities using greater than and less than symbols.

Vocabulary: greater than, less than, place value

Model:
Build 2 digit numbers using the tens and ones blocks. Show how to draw the number model and attach the expanded notation to the written model.

We do:
Give students 3 numbers to build, draw and write in expanded notation. Have them work with a partner to check each other's numbers for correct models and justify their answer. Choose students to show their work to the class and explain their models and drawings.
When students justify their answer, ask questions that deepen their understanding of using tens and ones "Why can't we just count out 36 ones to represent the number?"

***Extension**- build 3 digit numbers when students are comfortable with 2 digit numbers.

Model:
Choose 2 numbers to compare (62 and 56). Ask students if they know which is the larger or "greater" number. They may be able to identify which is greater, but tell them they will need to prove it.

- Model drawing each number and writing the expanded notation on the practice page.
- Show how the 60 in 62 has more tens than 50 in 56 in the drawing and in expanded notation.
- Ask why 62 is more than 56? (Answer: because 62 has 6 tens and 56 has only 5 tens)
- Ask why 56 isn't greater than 62 because it has 6 ones which is more than 2 ones. Students will have to explain that the 10s are worth more than the ones.

We do:

- Students should compare 42 and 24 along with you. They should use the Comparing Numbers practice page provided, creating drawings and adding expanded notation.
- Students compare their drawings with their partners deciding which number is greater and which number is the least.
- Students compare 74 and 77 on the practice template and discuss with their partner which is the greatest and the least.
- Choose one set of partners to show their work to the class.
- Ask them why 77 is larger. Encourage a class conversation about the fact that with these two numbers there are the same tens, so to figure out which is greatest, they need to look at the ones.

You try:

- Teach students to play a game called "The Greatest Number" in pairs.
- Each pair of students receives 1 set of number cards 1-9 or playing cards minus the 10 and face cards.
- Each student in the pair takes turn choosing 2 cards and making the biggest number they can. There is a place for each partner to write their name and number on the recording sheet.
- The students should draw models and write the expanded notation for each number on their sheet.
- Students decide which number is greater and put a star next to the greatest number in the box.
- The student who has the greatest number should justify their reasoning by referring to the documentation on their sheet.
- Both partners record the numbers as an inequality in the "Compare" column.

One side of the game recording sheet is for 2 digit numbers, and one side is for 3 digits. After the students have played for 5-10 minutes, have a few partners justify their greatest numbers to the class.

***Extension:** Have students play "The Least Number". Students should attempt to make the least number they can out of the cards drawn.
Students can play with 3 digit numbers by choosing 3 cards instead of 2.

Application to word problems:
Model word problem with the class and then have students do one on their own. You can use this as an "exit ticket" to check for understanding.

Practice Building Numbers

	Model Drawing	Expanded Notation
____ ____		____ + ____
____ ____		____ + ____
____ ____		____ + ____
____ ____		____ + ____

Practice Comparing Numbers

	Model Drawing	Expanded Notation	Compare
____ ____		____ + ____	____ ◯ ____ ____ is greater than____ ____ ◯ ____ ____ is less than____
____ ____		____ + ____	

	Model Drawing	Expanded Notation	Compare
____ ____		____ + ____	____ ◯ ____ ____ is greater than____ ____ ◯ ____ ____ is less than____
____ ____		____ + ____	

Greatest Number Game

	Model Drawing	Expanded Notation	Compare
Partner 1: _____ _____		_____ + _____	_____ ◯ _____ **____is greater than____** **____is equal to____**
Partner 2: _____ _____		_____ + _____	

	Model Drawing	Expanded Notation	Compare
Partner 1: _____ _____		_____ + _____	_____ ◯ _____ **____is greater than____** **____is equal to____**
Partner 2: _____ _____		_____ + _____	

Greatest Number Game

	Model Drawing	Expanded Notation	Compare
Partner 1: ____ ____ ____		____ + ____ + ____	____ ◯ ____ ____ **is greater than**____ ____**is equal to**____
Partner 2: ____ ____ ____		____ + ____ + ____	

	Model Drawing	Expanded Notation	Compare
Partner 1: ____ ____ ____		____ + ____ + ____	____ ◯ ____ ____ **is greater than**____ ____**is equal to**____
Partner 2: ____ ____ ____		____ + ____ + ____	

Lisa has 68 marbles. Josh has 86 marbles. Who has the most marbles? Who has the least marbles? Show how you know.

Draw Model **Expanded Notation**

68

86

Compare

____ ◯ ____ ____ ◯ ____

____ is greater than_____ **____ is less than_____**

The second graders were taking a field trip. One bus carried 132 kids and the other bus carried 123 kids. Which bus has the most kids? Show how you know.

	Draw Model	**Expanded Notation**
123		
132		

Compare

____ ◯ ____ ____ ◯ ____

____ is greater than_____ **____ is less than_____**

Mrs. Jackson made cookies for her class. She put 146 chocolate chips and 163 raisins into the batter. Did she use more chocolate chips or raisins? Show how you know.

Draw Model **Expanded Notation**

146

163

Compare

____ ◯ ____ ____ ◯ ____

____ is greater than_____ **____ is less than_____**

Least Number

	Model Drawing	Expanded Notation	Compare
Partner 1: _____ _____		_____ + _____	_____ ◯ _____ **___is less than___** **___is equal to___**
Partner 2: _____ _____		_____ + _____	

	Model Drawing	Expanded Notation	Compare
Partner 1: _____ _____		_____ + _____	_____ ◯ _____ **___is less than___** **___is equal to___**
Partner 2: _____ _____		_____ + _____	

Least Number

	Model Drawing	Expanded Notation	Compare
Partner 1: ____ ____ ____		____ + ____ + ____	____ ◯ ____ **____ is less than_____** **___is equal to___**
Partner 2: ____ ____ ____		____ + ____ + ____	

	Model Drawing	Expanded Notation	Compare
Partner 1: ____ ____ ____		____ + ____ + ____	____ ◯ ____ **____ is less than_____** **___is equal to___**
Partner 2: ____ ____ ____		____ + ____ + ____	