

Mathematics!



A Story of Units Parent Handbook

**GRADE 1
MODULE 4**

Grade 1 • Module 4

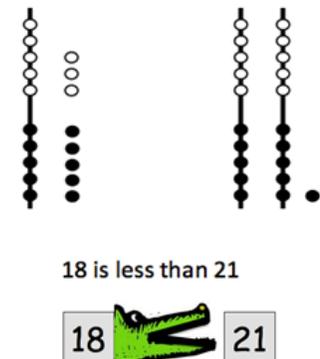
Place Value, Comparison, Addition and Subtraction to 40

OVERVIEW

Module 4 builds upon Module 2's work with place value within 20, now focusing on the role of place value in the addition and subtraction of numbers to 40.

The module opens with Topic A, where students study, organize, and manipulate numbers within 40. Having worked with creating a ten and some ones in Module 2, students now recognize multiple tens and ones. Students use fingers, linking cubes, dimes, and pennies to represent numbers to 40 in various ways: from all ones to tens and ones. They use a place value chart to organize units. The topic closes with the identification of 1 more, 1 less, 10 more, and 10 less, as students learn to add or subtract *like* units.

In Topic B, students compare quantities and begin using the symbols for *greater than* ($>$) and *less than* ($<$). Students demonstrate their understanding of place value when they recognize that 18 is less than 21 since 2 tens already have a greater value than 1 ten 8 ones. To support understanding, the first lesson in the topic focuses on identifying the greater or lesser amount. With this understanding, students label each of the quantities being compared and compare from left to right. Finally, students are introduced to the mathematical symbols, using the story of the alligator whose hungry mouth always opens toward the greater number. The abstract symbols are introduced after the conceptual foundation has been laid.



Topic C focuses on addition and subtraction of tens. Having used concrete models in Topic A to represent 10 more and 10 less, students now recognize that just as $3 + 1 = 4$, $3 \text{ tens} + 1 \text{ ten} = 4 \text{ tens}$. With this understanding, students add and subtract a multiple of 10 from another multiple of 10. The topic closes with the addition of multiples of 10 to numbers less than 40, e.g., $12 + 30$.

In Topic D, students use familiar strategies to add two-digit and single-digit numbers within 40. Students apply the Level 2 strategy of counting on and use the Level 3 strategy of making ten, this time making *the next ten*. For instance, when adding $28 + 5$, students break 5 into 2 and 3 so that they can make *the next ten*, which is 30, or 3 tens, and then add 3 to make 33. The topic closes with students sharing and critiquing peer strategies.

In Topic E, students consider new ways to represent larger quantities when approaching *put together/take apart with total or addend unknown* and *add to with result or change unknown* word problems. Students begin labeling drawings with numerals, and eventually move to tape diagrams to represent the problem pictorially. Throughout this topic, students will continue developing their skills with adding single- and double-digit numbers, introduced in Topic D, during fluency activities.

The module closes with Topic F, focusing on adding like place value units as students add two-digit numbers. The topic begins with interpreting two-digit numbers in varied combinations of tens and ones (e.g., $34 = 3 \text{ tens } 4 \text{ ones} = 2 \text{ tens } 14 \text{ ones} = 1 \text{ ten } 24 \text{ ones}$). This flexibility in representing a given number prepares students for addition with regrouping (e.g., $12 + 8 = 1 \text{ ten } 10 \text{ ones} = 2 \text{ tens}$ or $18 + 16 = 2 \text{ tens } 14 \text{ ones} = 3 \text{ tens } 4 \text{ ones}$). To close the module, students add pairs of numbers with varied sums in the ones to support flexibility in thinking.

Terminology

New or Recently Introduced Terms

> (greater than)

< (less than)

Place value (quantity represented by a digit in a particular place within a number)

Familiar Terms and Symbols

Equal (=)

Numerals

Ones

Tens

Suggested Tools and Representations

Arrow notation

Comparison symbols: $>$, $<$, $=$

Dime

Hide Zero cards

Hundred chart

Number bond

Penny

Place Value Chart

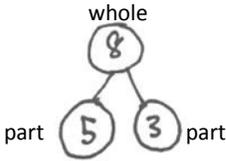
Quick Ten

Rekenrek

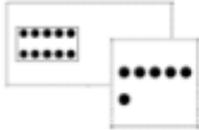
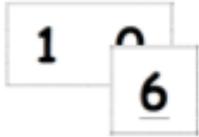
Tape Diagram

$$26 \xrightarrow{+10} 36$$

Arrow Nota-



Number Bond



Hide Zero Cards

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40

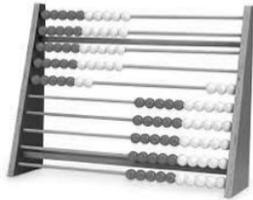
Hundred Chart to 40

tens	ones
3	4

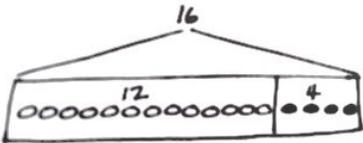
Place Value Chart



Quick Ten



Rekenrek

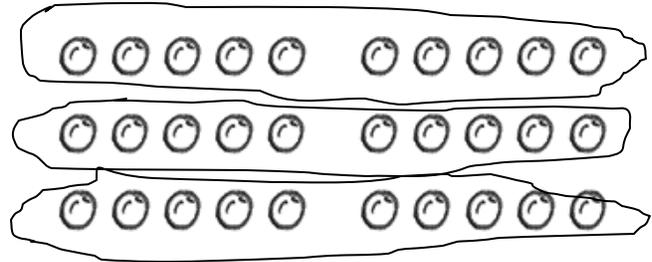


Tape Diagram

Lesson 1

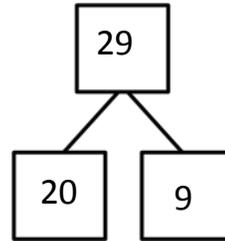
Objective: Compare the efficiency of counting by ones and counting by tens.

Circle groups of 10. Write the number.



There are 30 grapes

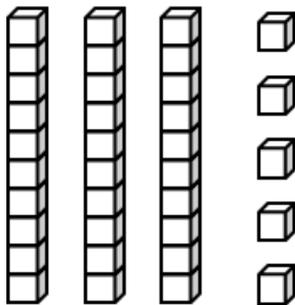
Make a number bond to show tens and ones



Lesson 2

Objective: Use the place value chart to record and name tens and ones within a two-digit number.

Write the tens and ones. Complete the statement.



tens	ones
3	5

There are 35 cubes.

Lesson 3

Objective: Interpret two-digit numbers as either tens and some ones or as all ones.

Count as many tens as you can. Complete each statement. Say the numbers and the sentences.

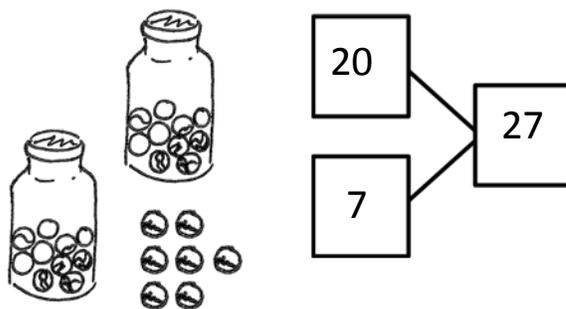


1 ten and 2 ones is the same as 12 ones.

Lesson 4

Objective: Write and interpret two-digit numbers as addition sentences that combine tens and ones.

Fill in the number bond. Complete the sentences.



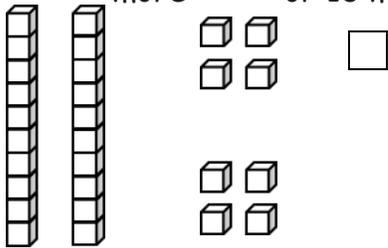
$$20 + 7 = \underline{27}$$

7 more than 20 is 27.

Lesson 5

Objective: Identify 10 more, 10 less, 1 more, and 1 less than a two-digit number.

Draw 1 more or 10 more. You may use a quick ten to show 10 more.



1 more than 28 is 29.

Lesson 6

Objective: Use dimes and pennies as representations of tens and ones.

Fill in the blank. Draw or cross off tens or ones as needed.

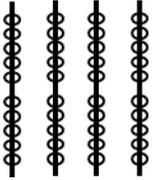


1 less than 24 is 23.

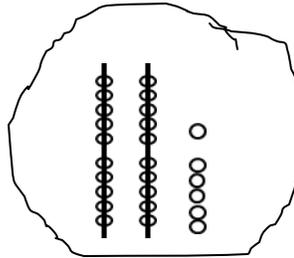
Lesson 7

Objective: Compare two quantities, and identify the greater or lesser of the two given numerals.

For each pair, write the number of items in each set. Circle the set with *fewer* items.



___40___

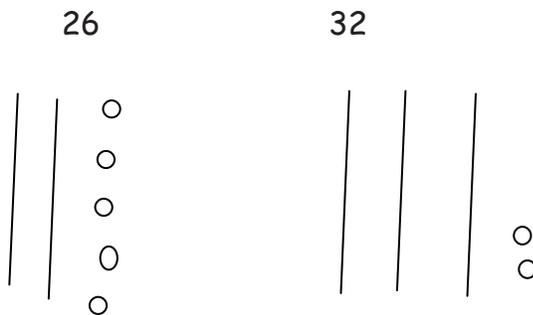


___26___

Lesson 8

Objective: Compare quantities and numerals from left to right.

Draw quick tens and ones to show each number. Label the first drawing as *less (L)*, *greater (G)*, or *equal to (E)* the second. Write a phrase from the word bank to compare the numbers



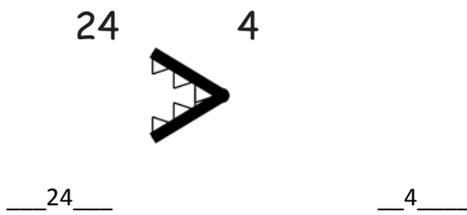
is greater than
is less than
is equal to

26 ___ is less than _____ 32

Lesson 9

Objective: Use the symbols $>$, $=$, and $<$ to compare quantities and numerals.

Write the numbers in the blanks so that the alligator is eating the *greater* number. With a partner, compare the numbers out loud, using *is greater than*, *is less than*, or *is equal to*. Remember to start with the number on the left.



Lesson 10:

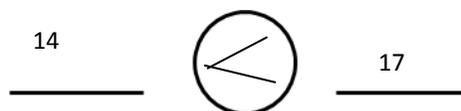
Objective: Use the symbols $>$, $=$, and $<$ to compare quantities and numerals.

Underline the correct words to make the sentence true. Use $>$, $<$, or $=$ and numbers to write a true number sentence.

1 ten 4 ones

is greater than
is less than
is equal to

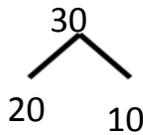
17



Lesson 11:

Objective: Add and subtract tens from a multiple of 10.

Complete the number bonds and number sentences to match the picture.



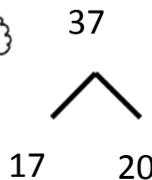
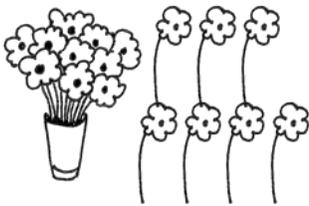
 3 tens = 2 tens + 1 ten

$$30 = 20 + 10$$

Lesson 12:

Objective: Add tens to a two-digit number.

Fill in the missing numbers to match the picture. Complete the number bond to match.



$$17 + \underline{20} = \underline{37}$$

Use arrow notation to solve

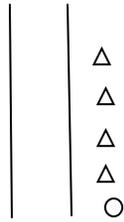
$$17 \xrightarrow{+20} 37$$

Lesson 13:

Objective: Use counting on and the make ten strategy when adding across a ten.

Draw quick tens, ones, and number bonds to solve. Complete the place value chart

$$\begin{array}{r} 21 + 4 = \underline{25} \\ \swarrow \searrow \\ 20 \quad 1 \end{array}$$



tens	ones
2	5

Lesson 14:

Objective: Use counting on and the make ten strategy when adding across a ten.

Make a number bond to solve. Show your thinking with number sentences or the arrow way. Complete the place value chart.

$$\begin{array}{r} 25 + 6 = \underline{31} \\ \swarrow \searrow \\ 20 \quad 5 \end{array}$$

tens	ones
3	1

$$5 + 6 = 11$$

$$20 + 11 = 31$$

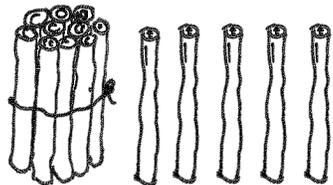
or

$$25 \xrightarrow{+5} 30 \xrightarrow{+1} 31$$

Lesson 15:

Objective: Use single-digit sums to support solutions for analogous sums to 40.

Solve the problem.



$$15 + 3 = 18$$

Solve the problem. Show the 1-digit addition sentence that helped you solve.

$$23 + 6 = \underline{\quad 29 \quad}$$

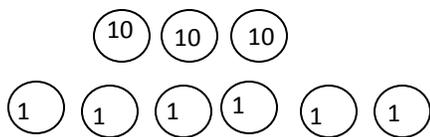
$$\underline{\quad\quad\quad} 3 + 6 = 9 \underline{\quad\quad\quad}$$

Lesson 16:

Objective: Add ones and ones or tens and tens.

Draw dimes and pennies to help you solve the addition problem.

$$16 + 20 = \underline{\quad 36 \quad}$$



Lesson 17:

Objective: Add ones and ones or tens and tens.

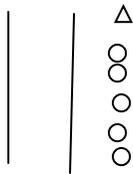
Solve the problems by drawing quick tens and ones or a number bond.

$$\begin{array}{c} 25 + 1 = \underline{26} \\ \swarrow \quad \searrow \\ 20 \quad 5 \end{array}$$

$$5 + 1 = 6$$

$$6 + 20 = 26$$

or



Lesson 18:

Objective: Share and critique peer strategies for adding two-digit numbers.

Circle the student work that correctly solves the addition problem

$$16 + 5$$

$$\begin{array}{l} 16 + 5 = 21 \\ \swarrow \quad \searrow \\ 4 \quad 12 \\ 16 + 4 = 20 \\ 20 + 1 = 21 \end{array}$$

$$\begin{array}{l} 16 + 5 = 21 \\ \swarrow \quad \searrow \\ 1 \quad 15 \\ 16 + 1 = 17 \\ 17 + 4 = 21 \end{array}$$

$$16 \xrightarrow{+3} 19 \xrightarrow{+2} 21 \xrightarrow{+1} 22$$

Fix the work that was incorrect by making new work in the space below with the matching number sentence.

$$16 \xrightarrow{+4} \quad \quad \quad$$

$$20 \xrightarrow{+1} 21$$

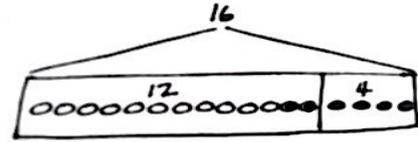
Lesson 19:

Objective: Use tape diagrams as representations to solve *put together/take apart with total unknown* and *add to with result unknown* word problems.

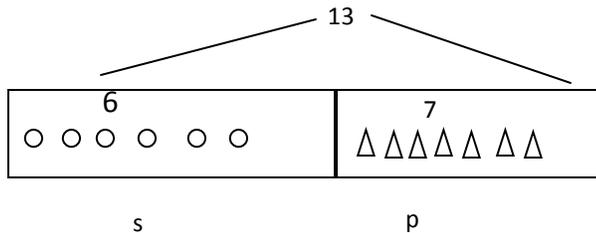
Read the word problem.

Draw a tape diagram and label.

Write a number sentence and a statement that matches the story.



Lee saw 6 squash and 7 pumpkins growing in his garden. How many vegetables did he see growing in his garden?



$$6 + 7 = 13$$

Lee saw 13 vegetables.

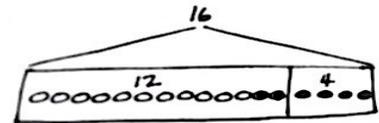
Lesson 20:

Objective: Recognize and make use of part-whole relationships within tape diagrams when solving a variety of problem types.

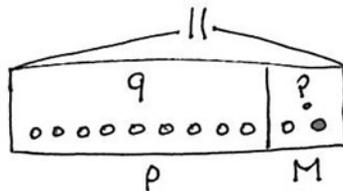
Read the word problem.

Draw a tape diagram and label.

Write a number sentence and a statement that matches the story



Nine dogs were playing at the park. Some more dogs came to the park. Then there were 11 dogs. How many more dogs came to the park?



$$9 + \boxed{2} = 11$$

2 more dogs came to the park.

Lesson 21:

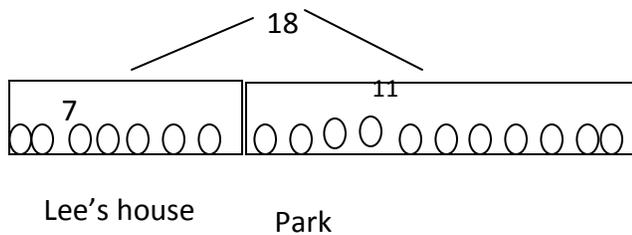
Objective: Recognize and make use of part-whole relationships within tape diagrams when solving a variety of problem types.

Read the word problem.

Draw a tape diagram and label.

Write a number sentence and a statement that matches the story.

Darnell walked 7 minutes to Lee's house. Then he walked to the park. Darnell walked for a total of 18 minutes. How many minutes did he walk to get to the park?



$$7 + \boxed{11} = 18$$

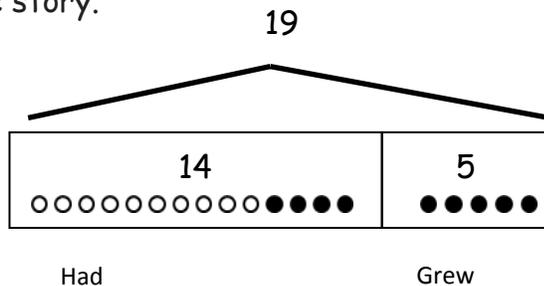
Darnell walked 11 minutes to the park.

Lesson 22:

Objective: Write word problems of varied types.

Use the tape diagrams to write a variety of word problems. Use the word bank if needed. Remember to label your model after you write

the story.



I had 14 flowers. Then 5 more grew. How many flowers do I have now?

Topics (Nouns)

flowers	goldfish	lizards
stickers	rockets	cars
frogs	crackers	marbles

Actions (Verbs)

hide	eat	go away
give	draw	get
collect	build	play

Lesson 23:

Objective: Interpret two-digit numbers as tens and ones, including cases with more than 9 ones.

Match the place value charts that show the same amount.

tens	ones
2	2

tens	ones
3	6

tens	ones
2	16

tens	ones
3	4

tens	ones
2	14

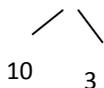
tens	ones
1	12

Lesson 24:

Objective: Add a pair of two-digit numbers when the ones digits have a sum less than or equal to 10.

Solve using number bonds. Write the two number sentences that show that you added the ten first.

$$13 + 26 = \underline{\quad 39 \quad}$$



$$26 + 10 = \underline{\quad 36 \quad}$$

$$\underline{\quad 36 \quad} + \underline{\quad 3 \quad} = \underline{\quad 39 \quad}$$

Lesson 25:

Objective: Add a pair of two-digit numbers when the ones digits have a sum less than or equal to ten.

Solve using number bonds. This time, add the ones first. Write the 2 number sentences to show what you did.

$$\begin{array}{r} 26 + 13 = \underline{\quad} \\ \swarrow \quad \searrow \\ 3 \quad 10 \end{array}$$

$$26 + 3 = 29$$

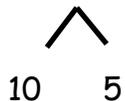
$$29 + 10 = 39$$

Lesson 26:

Objective: Add a pair of two-digit numbers when the ones digits have a sum greater than ten.

Solve using a number bond to add ten first. Write the 2 addition sentences that helped you.

$$19 + 15 = \underline{34}$$

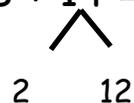


$$19 + 10 = \underline{29}$$

$$\underline{29} + 5 = \underline{34}$$

Solve using a number bond to make a ten first. Write the 2 number sentences that helped you.

$$18 + 14 = \underline{32}$$



$$18 + 2 = \underline{20}$$

$$20 + 12 = \underline{32}$$

Lesson 27:

Objective: Add a pair of two-digit numbers when the ones digits have a sum greater than ten.

Solve using number bonds with pairs of number sentences.

$$\begin{array}{r} 19 + 12 = \underline{\quad} \\ \swarrow \quad \searrow \\ 10 \quad 2 \end{array} \qquad \begin{array}{l} 19 + 10 = 29 \\ 29 + 2 = 31 \end{array}$$

or

$$\begin{array}{r} 19 + 12 = \underline{\quad} \\ \swarrow \quad \searrow \\ 1 \quad 11 \end{array} \qquad \begin{array}{l} 19 + 1 = 20 \\ 20 + 11 = 31 \end{array}$$

Lesson 28:

Objective: Add a pair of two-digit numbers with varied sums in the ones.

Solve using quick ten drawings, number bonds, or the arrow way. Check the rectangle if you made a new ten.

$$23 + 12 = 35$$


$$15 + 13 = \underline{28}$$

$$15 \xrightarrow{+10} 25 \xrightarrow{+3} 28$$

Lesson 29:

Objective: Add a pair of two-digit numbers with varied sums in the ones.

Solve using quick ten drawings, number bonds, or the arrow way.

$$\begin{array}{c} 13 + 16 = \underline{\quad 29 \quad} \\ \swarrow \quad \searrow \\ 10 \quad 3 \end{array} \quad \text{OR}$$

$$\begin{array}{c} +10 \quad +3 \\ 16 \Rightarrow 26 \Rightarrow 29 \end{array}$$

OR

