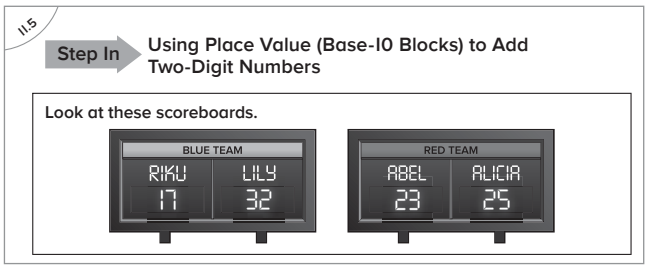
ORIGO STEPPING STONES TEXAS

Core Focus

- Using place value to add and subtract two digit numbers
- Relating and paying with quarters, dimes, nickels, and pennies

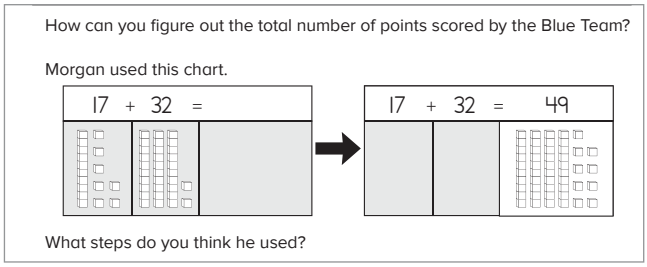
Addition and Subtraction

- After analyzing the tens and ones that make up two-digit numbers, and applying fact strategies like **count-on** and **-back** by tens, Grade 1 students are ready to work with addition and subtraction of two-digit numbers.



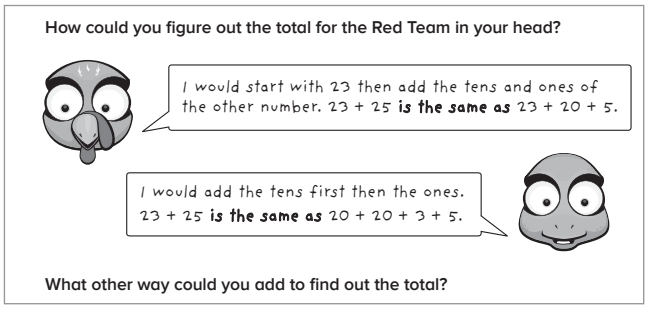
In this lesson, students use base-10 blocks to add two two-digit numbers, e.g. 17 + 32 or 23 + 25.

- Research shows that it is important for early experiences with calculation to be done mentally, and for all experiences to be grounded in hands-on resources and visual models, such as **base-10 blocks** and **money**.



This shows how base-10 blocks can be used to add two-digit numbers.

- Grade 1 students continue to strengthen their mental computation strategies before learning a procedure (algorithm) for doing addition and subtraction in later grades. Paper and pencil calculation will come later, once students have developed sufficient skill with and understanding of simple mental computations.

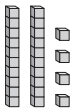


Ideas for Home

- With your child, use a 10 X 10 grid piece of paper to make a hundred chart. Place a counter on one of the squares on the chart. Ask your child to say the number that is ten less or ten more.
- Using the same hundred chart, you and your child can place a counter on the top row of the chart (between 91 and 100). Take turns to roll a six-sided numbered cube. The number shown determines how many tens that player will count back. Play finishes when a player reaches the bottom row (1 - 10). Reverse to add tens.
- Using money situations to add and subtract pennies and dimes are helpful when modelling ones and tens.

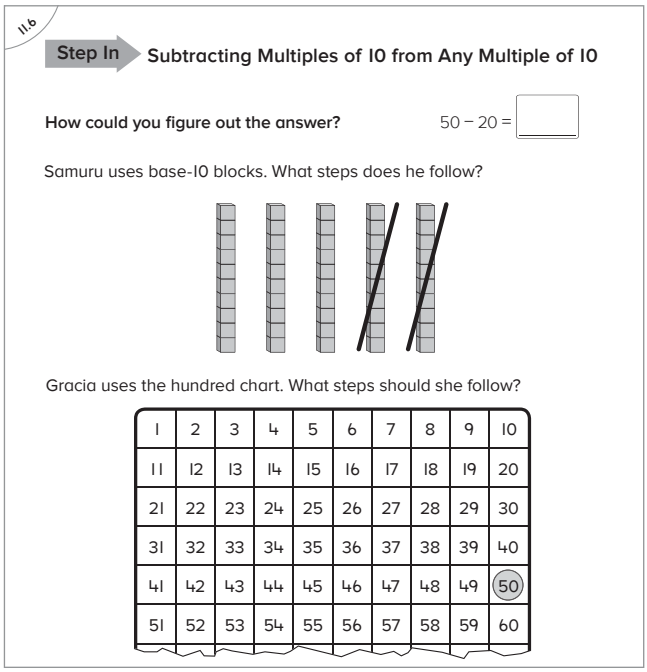
Glossary

- **Base-10 place value** means that the value of digits in a number is determined by their position. Both 43 and 34 have the digit 4. The 4 In 43 represents 4 **tens** and the 4 in the 34 represents 4 **ones**.
- These are **base-10 blocks**. They are used to build numbers showing **tens** and **ones**.



120815

- It is important that students spend a lot of time discovering these base-10 place value rules while using a hundred chart and concrete objects. These experiences in Grades 1 and 2 set the foundation for transitioning to using and eventually mastering the vertical algorithm in Grades 3 and 4.


11.6

Step In **Subtracting Multiples of 10 from Any Multiple of 10**

How could you figure out the answer? 50 − 20 = ____

Samuru uses base-10 blocks. What steps does he follow?

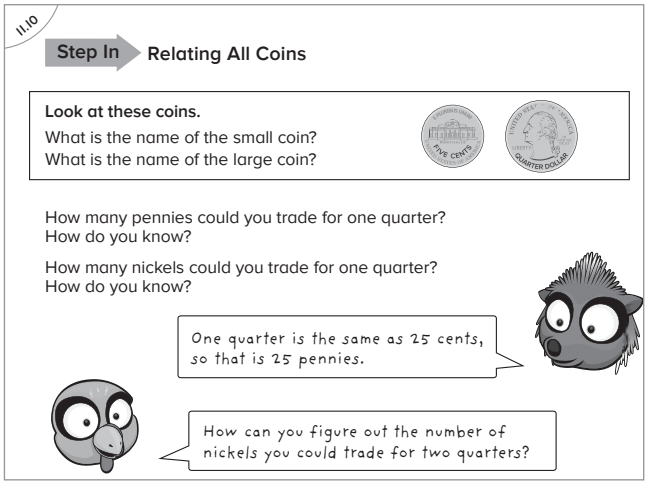
Gracia uses the hundred chart. What steps should she follow?

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
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60

In this lesson, students use base-10 blocks or a hundred chart to subtract multiples of ten.

Money

- The quarter and the nickel are each related to pennies. Students can use pennies to show the value of each coin and then figure out the number of quarters or nickels that are needed to represent one dollar.


11.10

Step In **Relating All Coins**

Look at these coins.
What is the name of the small coin?
What is the name of the large coin?

How many pennies could you trade for one quarter?
How do you know?

How many nickels could you trade for one quarter?
How do you know?

One quarter is the same as 25 cents, so that is 25 pennies.

How can you figure out the number of nickels you could trade for two quarters?

In this lesson, students explore the relationships between quarters, dimes, nickels, and pennies.

- As students learn about money by making change and paying with coins, their understanding of place-value concepts is also deepened.

Ideas for Home

- Play with money with your child. Because our monetary system is **base-10**, ignore the decimal points in three-digit prices and use the numbers when comparing, adding, or subtracting (e.g., $1.55 becomes 155 cents).
- Use only pennies and dimes, because these relate well to the ones (pennies), tens (dimes), place values in our number system. For instance, pay $2.95 by using 29 dimes, and 5 pennies. Your child can combine the quantities by place value similarly to using base-10 blocks.
- Nickels and quarters require more complicated thinking, so if you and your child want to use those, it is recommended that you begin with smaller prices.