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Add and Subtract Two-Digit Numbers Without Regrouping

Learning Notes

Children learn to add and subtract two-digit numbers without regrouping and to apply the concept of “tens” and “ones” to math problems.

Materials

- sets of tens manipulatives: craft sticks, straws, or coffee stirrers in sets of 10 (rubber banded together); multilink cubes or connecting chains (snapped together to make tens); beans or small candies placed in sets of 10 in paper cups. Left loose as individual pieces, any of these items represent ones.
- 3" x 5" (8 cm x 13 cm) index cards numbered 1–100
- Tens and Ones Mat, which can be drawn on a piece of paper, as shown in the example on the right.

tens	ones

Teaching the Lesson

Before beginning the activities, show the children a number written on an index card and have the children make the number using the math manipulatives and the Tens and Ones Mat. Have the children make several numbers in this manner.

Model how to use the Tens and Ones Mat and manipulatives to make different addition and subtraction problems without regrouping. (See the examples below.)

$\begin{array}{r} 22 \\ +43 \\ \hline 65 \end{array}$	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; padding: 2px;">tens</th> <th style="width: 50%; padding: 2px;">ones</th> </tr> </thead> <tbody> <tr> <td style="border: 1px solid black; height: 20px;"> </td> <td style="border: 1px solid black; height: 20px;"> </td> </tr> <tr> <td style="border: 1px solid black; height: 20px;"> </td> <td style="border: 1px solid black; height: 20px;"> </td> </tr> <tr> <td style="border: 1px solid black; height: 20px;"> </td> <td style="border: 1px solid black; height: 20px;"> </td> </tr> <tr> <td style="border: 1px solid black; height: 20px;"> </td> <td style="border: 1px solid black; height: 20px;"> </td> </tr> <tr> <td style="border: 1px solid black; height: 20px;"> </td> <td style="border: 1px solid black; height: 20px;"> </td> </tr> <tr> <td style="border: 1px solid black; height: 20px;"> </td> <td style="border: 1px solid black; height: 20px;"> </td> </tr> <tr> <td style="border: 1px solid black; height: 20px;"> </td> <td style="border: 1px solid black; height: 20px;"> </td> </tr> <tr> <td style="border: 1px solid black; height: 20px;"> </td> <td style="border: 1px solid black; height: 20px;"> </td> </tr> </tbody> </table>	tens	ones																	<p>= 22 (2 tens, 2 ones)</p> <p>add = 43 (4 tens, 3 ones)</p>	$\begin{array}{r} 37 \\ -11 \\ \hline 26 \end{array}$	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; padding: 2px;">tens</th> <th style="width: 50%; padding: 2px;">ones</th> </tr> </thead> <tbody> <tr> <td style="border: 1px solid black; height: 20px;"> </td> <td style="border: 1px solid black; height: 20px;"> </td> </tr> <tr> <td style="border: 1px solid black; height: 20px;"> </td> <td style="border: 1px solid black; height: 20px;"> </td> </tr> <tr> <td style="border: 1px solid black; height: 20px;"> </td> <td style="border: 1px solid black; height: 20px;"> </td> </tr> <tr> <td style="border: 1px solid black; height: 20px;"> </td> <td style="border: 1px solid black; height: 20px;"> </td> </tr> <tr> <td style="border: 1px solid black; height: 20px;"> </td> <td style="border: 1px solid black; height: 20px;"> </td> </tr> <tr> <td style="border: 1px solid black; height: 20px;"> </td> <td style="border: 1px solid black; height: 20px;"> </td> </tr> <tr> <td style="border: 1px solid black; height: 20px;"> </td> <td style="border: 1px solid black; height: 20px;"> </td> </tr> <tr> <td style="border: 1px solid black; height: 20px;"> </td> <td style="border: 1px solid black; height: 20px;"> </td> </tr> </tbody> </table>	tens	ones																	<p>37 (3 tens 7 ones)</p> <p>subtract ← 11 (1 ten, 1 ones)</p>
tens	ones																																								
tens	ones																																								

Have the children complete the unit activities. Remind the children to always start on the ones side whenever they add or subtract.

Learning Tip

For children who are having difficulty with this procedure, give them a self-sticking note. Place the note over the tens side of the math problem and do the adding/subtracting on the ones side and record the answer. Remove the note and do the adding/subtracting on the tens side and record the answer.

5

How to

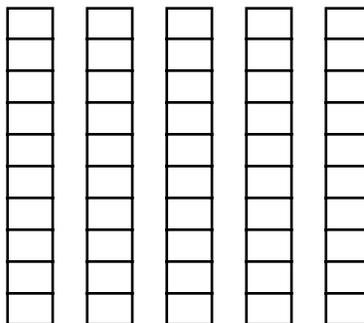
Regroup When Subtracting

Teaching the Lesson *(cont.)*

Model for the children how to regroup when subtracting one number from another. Remind the children to always start on the ones side.

Remind children that in the math problem, $50 - 29$, that 9 ones can not be subtracted from 0 ones. The children will need to regroup (“borrow”) a ten from the 5 tens.

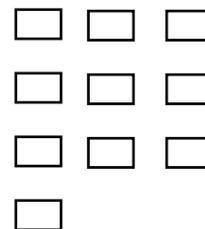
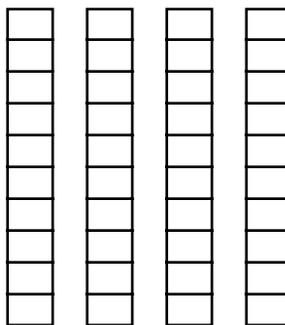
$$\begin{array}{r} 50 \\ - 29 \\ \hline \end{array}$$



5 tens
0 ones

To regroup, the children will subtract a ten from the 5 tens. To do this, change the 5 (tens) to 4 (tens). Move the borrowed ten to the ones side and “break” it apart (show it as 10 ones). Now there are 4 tens and 10 ones.

$$\begin{array}{r} 4 \ 10 \\ \cancel{5} 0 \\ - 29 \\ \hline \end{array}$$

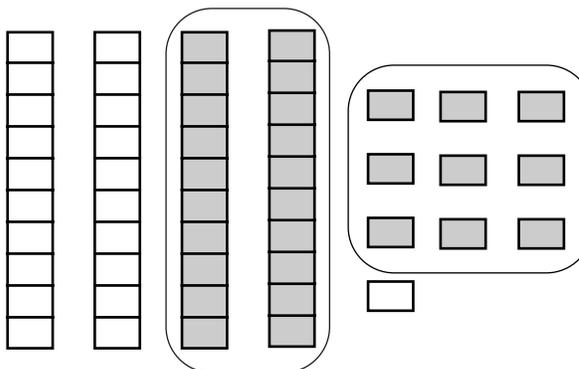


4 tens
10 ones

Subtract the 9 ones from the 10 ones and write the answer.

Subtract the 2 tens from the 4 tens and write the answer.

$$\begin{array}{r} 4 \ 10 \\ \cancel{5} 0 \\ - 29 \\ \hline \end{array}$$



Subtract
2 tens

Subtract
9 ones

Give the children many opportunities to use manipulatives to do the regrouping before introducing paper-and-pencil work sheets. The more experience the children have in actually going through the process of regrouping, the easier it will be for the children when they tackle paper-and-pencil activities. This will also give the children a greater understanding of regrouping and when and why it is done.