

Soroban: The Japanese Abacus

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Lesson 4: Subtraction on the Soroban

Learning Objectives:

- To use the soroban for subtraction (ones and ones, tens and ones, tens and tens)

Learning Outcomes:

- Students can use the soroban for subtraction of one and two digit numbers

Curriculum Links:

Maths

Y1: identify one more and one less; add and subtract one and two digit numbers to 20, including zero; solve one step problems

Y2: identify, represent and estimate numbers; compare/order numbers including '<' and '>'.

Y3: secure place value to 100

Keywords:

Soroban - Japanese abacus; beads :1 bead, 5 bead; beam, frame, position marker, digit rod; clear - setting the abacus to 0.

Resources:

- Worksheet 5a: Subtracting numbers 1-9
- Worksheet 5b: Subtracting numbers above 10
- Digital soroban (See link: <http://hp.vector.co.jp/authors/VA041064/english/index.html>)
- Example Question Sheet

Additional Resources:

- Worksheets: Ordering 1 (1-9); Ordering 2 (1-100); Sequence

Loan Resources:

- Teaching soroban (recommended, available free on long term loan from the Japan Society)
- Class set of soroban

Task 1

- Hand out the **soroban** to students and recap the previous lessons of adding on the soroban by giving a few simple sums from the **example question sheet**. Remind students how to correctly move the beads.
- Clear the soroban and challenge them to follow the steps: $2+5+2-1-3+1+1$.
- Check the sorobans. They should have 7 (top bead down and two lower beads up).

Estimated Time: 5 -10 minutes

Task 2

1. Show students the sum $6+3=9$.
2. Write $9-\square=\square$ on the board. On mini whiteboards, students write as many different possibilities it could be. Take suggestions and then focus on the 3 and 6.
3. Using the **teaching soroban** or the **digital soroban** show the addition sum on the soroban and then the subtraction. Ask all students to start with 9 and call out a single digit number for them to subtract, repeat this this task several times, giving a different single digit for the students to subtract from 9 each time.

Estimated Time: 10 minutes

Task 3

1. Introduce subtraction sums with one and two digit numbers that do not borrow or carry (E.g. $77-2=75$.) Show an example on the **teaching soroban** or **digital soroban**.
2. Do a sum and ask students to follow along on their own soroban.
3. Do a few more sums as a class and if students seem confident, call out a sum for students to complete on their own soroban (refer to the **example question sheet**).

Estimated Time: 10 minutes

Task 4

1. Students to complete **Worksheet 5: 'Subtracting numbers'**. Students can work in pairs.
2. Check answers together if there is time.

Estimated Time: 15 minutes

Extension Activities

1. See the additional resources for **ordering and sequence worksheets**: Ordering 1 (1-9), Ordering 2 (1-100), Sequence (**NB**: The sequence worksheet gives extra practice reading numbers the soroban; students will not be able to use the soroban to work out the next number in the sequence).