

Soroban: The Japanese Abacus

The Japan Society with Lee Blowers, Tomoko Hault and Kimie Markarian (2019)

Lesson 2: Identifying and Representing Numbers above 10

<p>Learning Objectives:</p> <ul style="list-style-type: none"> To identify and represent two digit numbers on a soroban. <p>Learning Outcomes:</p> <ul style="list-style-type: none"> To recognise two-digit numbers on a soroban. To practise making two-digit numbers on a soroban.
<p>Curriculum Links:</p> <p>Maths</p> <p>Y1: begin to use place value (tens and ones); identify, represent and estimate numbers</p> <p>Y2: identify, represent and estimate numbers</p> <p>Y3: secure place value to 100</p>
<p>Keywords:</p> <p>Soroban - Japanese abacus; beads :1 bead, 5 bead; beam, frame, position marker, digit rod; clear - setting the abacus to 0.</p>
<p>Resources:</p> <ul style="list-style-type: none"> Worksheet 2a: Numbers above 10 Digital soroban (See link: http://hp.vector.co.jp/authors/VA041064/english/index.html) <p>Loan Resources:</p> <ul style="list-style-type: none"> Teaching soroban (optional) Class set of soroban

Task 1

- Using the **teaching soroban** or **digital soroban**, recap the previous lesson and check that students remember how to clear the soroban to 0 and read and represent numbers 1-9.
- Remind students the column to the left of the Ones is the Tens column.
- Show students 1 on the soroban and then show them 10. Then show them a soroban showing 1 in the Tens and 1 in the Ones. Ask what number students think this could be? Tell them it is 11. Emphasise that the digit rod which runs through the position marker represents the ones.
- Show examples of other two-digit numbers (e.g. 20, 30, 40,50) on the **teaching soroban** or **digital soroban**

Estimated Time: 10 minutes

Optional Extension to Task 1: Push a 1 bead up to the beam on the hundreds rod and ask students what number it represents. Tell them it is 100. If appropriate, briefly show students examples of other simple three digit, or even four digit numbers.

Task 2

1. Check understanding by giving students a **soroban** and making 2 digit numbers together. Start with numbers that use 1 beads only (e.g. 12, 22, 31, 34).
2. Move on to numbers which use the 5 beads too (e.g. 60, 70, 17, 18). Check that students are using the correct digit rods and make sure they understand the different values of the beads on each rod.

Estimated Time: 10 minutes

Task 3

1. Put students into pairs. Each student should make a number using Tens and Ones on their soroban.
2. They should write the number down on a mini whiteboard/notebook then switch the soroban with their partner. Their partner has to write down the correct number represented.
3. Repeat the task several times.

Estimated Time: 10 minutes

Task 4

1. Students to complete **Worksheet 2a- Numbers above 10** individually and practise making the numbers on their own soroban.
2. Check the answers together.
3. Call out numbers between 1 - 99 for students to practice making on their soroban. If students do not seem confident, use the **teaching soroban** or **digital soroban** to make the numbers as a class.

Estimated Time: 15 minutes

Extension Activity

1. In small groups, students take it in turns to be the 'quiz master' and to choose a two digit number for the other students to make.