

Soroban Abacus Classroom: Student Learning Guide

Master Mental Math, Bead Fingering Techniques, Flash Anzan Speed Drills & Interactive Quizzes

App Link: <https://www.aivacado.com/abacus> | Target Audience: Students, Young Learners & Self-Paced Math Masters

WELCOME TO SOROBAN

Welcome to the Soroban Abacus Classroom! By learning to calculate on this digital abacus, you are training your brain to see numbers as pictures. Soon, you will be able to add and subtract big numbers faster than someone using a calculator!

1. What is a Soroban Abacus?

The Soroban is a traditional Japanese counting frame that has been used for centuries. While modern calculators do all the thinking for you, the Soroban teaches your brain **HOW** numbers work.

Look at the abacus board on your screen. You will see vertical wooden rods with beads on them, split into two decks by a horizontal center bar (called the Reckoning Beam):

- The Upper Deck (Heaven):** Has 1 bead on each rod. This bead is worth **5**! When you slide it **DOWN** to touch the center beam, it counts as 5.
- The Lower Deck (Earth):** Has 4 beads on each rod. Each bead is worth **1**! When you slide them **UP** to touch the center beam, each one counts as 1.
- The Reckoning Beam (Center Bar):** The golden rule of Soroban is: *Beads only count when they are touching the center beam!* If a bead is pushed away towards the outer frame, it is ZERO (0).
- The Unit Dot (Center Dot):** Look closely at the center beam. You will see small dots. The middle dot on Column #7 is your **ONES** rod (1s place). The rod to its left is the **TENS** rod (10s), then **HUNDREDS** (100s), and **THOUSANDS** (1,000s).

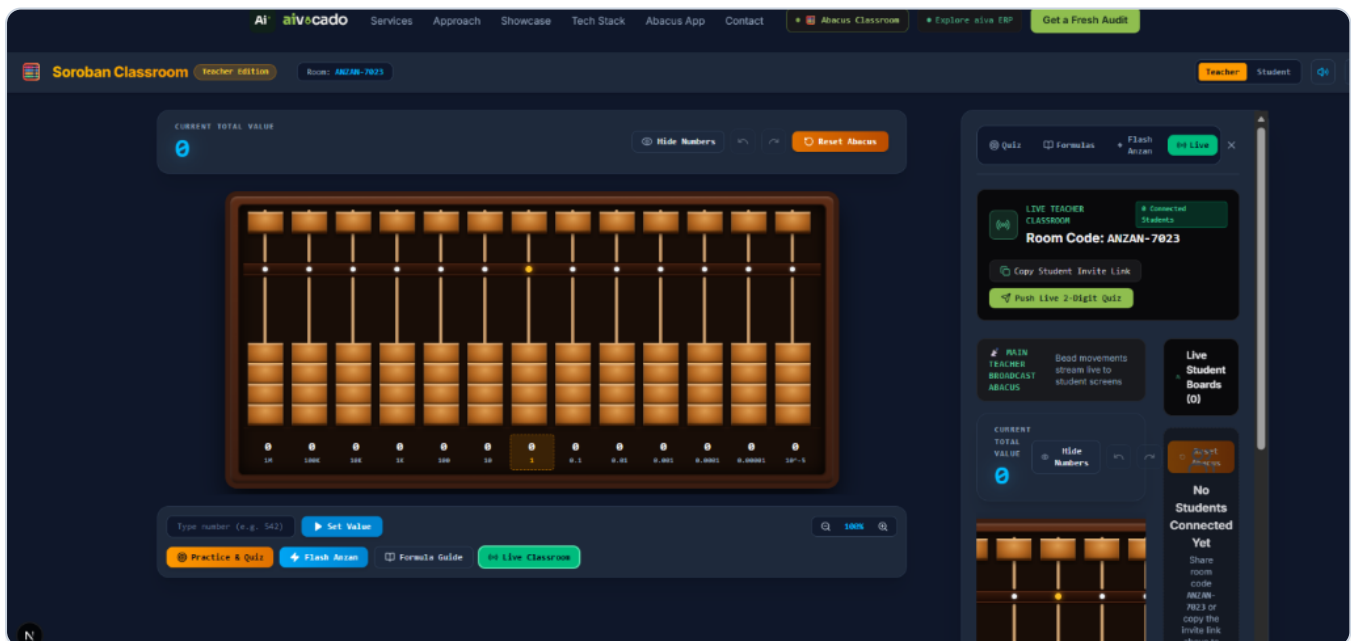


Figure 1: The Soroban Abacus Board. Notice the center dot on Column #7 (Unit / Ones column) and the upper Heaven beads.

2. How to Join Your Class (3 Quick Steps)

Joining your teacher's live classroom is super easy:

1. **Open the App or Click the Invite Link:** Go to <https://www.aivacado.com/abacus> . If your teacher shared a Classroom Code, click the blue **Join Class** button in the header (or click 'Change' next to the Room code), type the code (e.g. **SOROBAN-4821**), and hit **Join Class**!
2. **Set Your Name:** In the top bar, click on your name (next to the user icon ) to type your real name (e.g. 'Alex' or 'Maya') and press Enter.
3. **Stay in Student Mode:** Ensure your role badge is set to 'Student Mode'. In Student Mode, session management is handled by your teacher, so you can focus entirely on learning, challenges, and speed drills!

PRO TIP: PROGRESS IS SAVED

Don't worry about losing your progress! If you refresh the page or lose your internet connection, the app will automatically remember your name, your room code, and your score.

3. Proper Fingering Techniques (The Secret of Masters)

To calculate fast like a Soroban champion, you must use the correct fingers. Japanese masters follow two strict rules:

- **Right Thumb (UP ONLY):** Use your thumb to flick lower Earth beads UP towards the center beam (to add +1, +2, +3, +4).
- **Right Index Finger (DOWN & HEAVEN):** Use your index finger to push lower Earth beads DOWN (to subtract -1, -2, -3, -4), and to move the upper Heaven bead BOTH down (+5) and up (-5).
- **The Pinch Movement:** When forming numbers 6, 7, 8, or 9, pinch the Heaven bead and Earth beads together simultaneously using your thumb and index finger!

4. Practice & Quiz Modes (Earn Points & Streaks)

Click on the **Practice & Quiz** tab on the right side of the screen to test your speed:

- **Read the Number Mode:** The computer will set beads on the abacus, but hide the number with **?** **?**. Look at the beads, calculate the value, type your answer, and press Check!
- **Set the Number Mode:** The computer gives you a target number (e.g., 74). Move the beads on your Soroban until the total value matches the target number.
- **Mental Arithmetic Mode:** Solve quick addition and subtraction math equations without looking at a calculator.
- **Fire Streaks:** Every correct answer gives you +10 points. If you get 3 correct answers in a row, you unlock the Fire Streak badge!

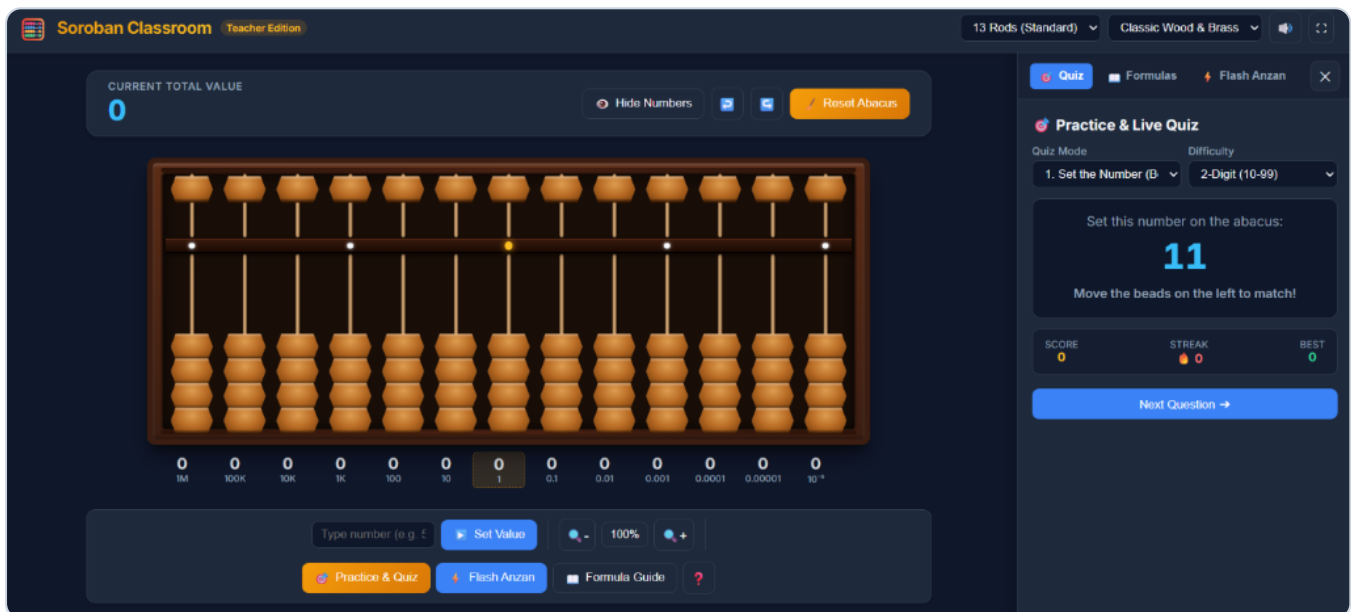


Figure 2: Practice & Quiz Mode with Streak counters, points, and masked number prompts.

5. Flash Anzan: Train Your Mental Superpower!

Flash Anzan (フラッシュ暗算) is the coolest part of learning Soroban:

- Numbers will flash on your screen one by one at lightning speed.
- **How to do it:** Close your eyes slightly and imagine a picture of a Soroban floating in your head. As numbers flash on the screen, imagine your fingers moving the imaginary beads.
- At the end of the sequence, type the cumulative total!
- Start with 1-digit numbers at a comfortable speed (1500ms). As you get better, challenge yourself to 2-digit numbers at 800ms!

6. Formulas Made Simple: "Friends of 5 and 10"

Sometimes you need to add a number, but you've run out of beads on that rod. That's when you use **Friends!**

- **Small Friends (Pairs that make 5):**
 - To add 4: Add 5 (Heaven bead down), subtract 1 (Earth bead down). Formula: $+4 = +5 - 1$
 - To add 3: Add 5, subtract 2. Formula: $+3 = +5 - 2$

- To add 2: Add 5, subtract 3. Formula: $+2 = +5 - 3$
- To add 1: Add 5, subtract 4. Formula: $+1 = +5 - 4$
- **Big Friends (Pairs that make 10):**
 - To add 9: Subtract 1 on current rod, add 1 on the tens rod to the left. Formula: $+9 = -1 + 10$
 - To add 8: Subtract 2, add 1 on the left rod. Formula: $+8 = -2 + 10$
 - To add 7: Subtract 3, add 1 on the left rod. Formula: $+7 = -3 + 10$

NEED HELP?

Open the **Formulas** tab in the sidebar and click "**Demonstrate on Abacus**". The app will animate the beads step-by-step so you can copy the movement!

7. Live Teacher Challenges & Screen Broadcasts

When you are connected to your teacher's classroom:

- Your teacher can push live challenges directly to your screen! Whenever a challenge appears, the Quiz tab opens automatically.
- Your teacher can see when you get answers right and celebrate your streaks on the class leaderboard.
- Your teacher can also broadcast demonstrations directly to your abacus board so you can watch them solve difficult equations live.

8. 10-Minute Daily Practice Routine

Activity	Time	Daily Goal
Finger Warm-Up	2 minutes	Flick lower beads 1 to 4 with thumb; clear with index finger. Practice 0 to 9 on Column 7.
Read the Number	3 minutes	Solve 5 "Read the Number" quiz problems. Aim for 100% accuracy.
Set the Number	3 minutes	Solve 5 "Set the Number" quiz problems. Try to use the simultaneous pinch technique!
Flash Anzan	2 minutes	Complete 2 rounds of 5-term Flash Anzan. Keep your imaginary abacus sharp!