

ACTIVITY IA8.3: Decomposition with Arrow Cards

Intended learning: To do semi-formal multi-digit calculations by decomposing numbers into hundreds, tens and ones parts.

Instructional mode: Inquiry or rehearsal mode for individuals.

Materials: Arrow cards. A large classroom set works well.

Description: Students begin work on a multi-digit calculation task, such as $384 + 155$. Write the calculation on the board in vertical format, one number under the other. Ask a student to build each number with arrow cards, and hold the arrow card numerals beside the written numerals on the board. Then decompose each arrow card numeral into its separate cards, sticking the cards onto the board in a horizontal list, as in 300, 80, 4. Students can use the decomposed arrow card setting to help organize their calculation into hundreds, tens and ones parts, as is done in a partial sums strategy.

Responses, variations and extensions:

- Can be used with an addition, subtraction or multiplication task, when students are developing semi-formal written strategies.
- Students could use their own arrow card sets.
- After solving some tasks, students need to be challenged to solve tasks without using the arrow cards. A helpful prompt is, *If you were going to use the arrow cards, what would you do?* This encourages students to reflect on their previous activity.