

1.OA Using lengths to represent equality

Alignments to Content Standards: 1.OA.D.7

Task

Materials

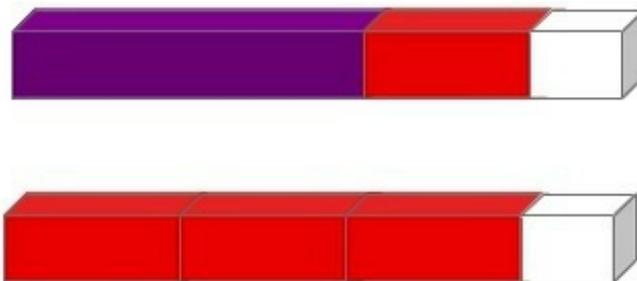
Cuisenaire rods or paper strips cut to whole centimeter lengths

Actions

Students work in pairs.

- One student puts a few rods (or strips) end-to-end.
- The other student matches that length with a different combination of rods (or strips).
- When two different ways of making the same length are found, the students write a number sentence reflecting the equality.

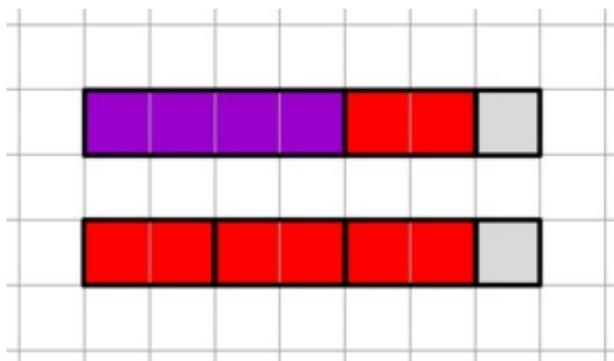
For example, if the first student uses a rod of length 4, a rod of length 2 and a rod of length 1 and the second student uses three rods of length 2 and a rod of length 1 (as shown below), they should write $4 + 2 + 1 = 2 + 2 + 2 + 1$.



$$4 + 2 + 1 = 2 + 2 + 2 + 1$$

IM Commentary

- The act of trying to find equal lengths with the rods helps students develop a physical understanding for the meaning of equality. Students are more likely to generate and understand complex equalities than they would be able to do only abstractly.
- A variation that would help scaffold students from physical objects to drawings would be to have them draw a color-matched picture of their Cuisenaire rods on graph paper in addition to writing the equation. For example, a student might draw the following picture for the example given in the task statement:



- One variation may include having the teacher choose one (larger) Cuisenaire rod. Then each student in each pair would match that length. From there, the students write a number sentence describing an equality based on the rods they chose. This variation connects to 1.MD.1 and 1.MD.2 as well as 1.OA.7. Some students may need a small white board or paper to record how they made their long rod as they create it; otherwise some students might forget which rods they chose.

Edit this solution

Solution

For example, if the first student arranges Cuisenaire rods end to end like this (in this example there are 3 rods)



then the second student could use Cuisenaire rods to match the total length like this



The two students then write a number sentence to describe the relationship.

$$3 + 2 + 2 = 4 + 1 + 1 + 1$$



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