

Evidence-Based Trajectory for Base-Ten Understanding

①

Counts 10 as a unit
(counts by ones from the beginning)

②

decade counting
(may count on from first (10) or larger (21))

③

direct place value explanation (DIVE)
(may count on by ones from 14 or 21)

④

collects 10's and decade counts them then collects ones (4+1)

⑤

3 (tens) and 5 is 35
tens counted (by) ones

⑥

increments by 10's

⑦

counts by 10's
incrementing by 10's

⑧

10 + 20 = 30 Ten
4 + 1 = 5 One
30 + 5 = 35

Invented algorithm
10's and 1's

(if a larger number like 9 is used, a child will pick up a ten stick and break off one)

⑨

20 + 10 = 30
30 + 4 = 34
34 + 1 = 35

Invented algorithm
Incrementing

⑩

21 + 10 = 31
31 + 4 = 34

or

14 + 20 = 34
34 + 1 = 35

or

Invented algorithm
Compensating

⑪

20 + 14 = 34
but it isn't 20 it's 21
so I need to add 1
34 + 1 = 35

Invented algorithm
Compensating

Base 10
Evidence

1 = 12 + 14