EXPLAIN

AC9M2A02 · E3

Every Way to Make Ten

Elaboration 3 · Recording partitions in order

ELABORATION FOCUS

Using partitioning to develop and record facts systematically, then explaining how you know every possible partition has been found.

LEARNING INTENTION **I can list every way in order with none missing.**

10 birds | **2 trees** | **In order** | **All ways** | **Prove it**

1 Act It Out

Step 1: put 10 counters on Tree A and Tree B. Step 2: move one bird across.

2 Record in Order

Step 3: start at 10 and 0. Step 4: write each new pair on the next line.

3 Show It Is Complete

Step 5: check the first number goes down by one each line. Step 6: say why you can stop.

MODEL · FILLING TREE A AND TREE B

Tree A + Tree B. Work down in order so no arrangement is skipped or repeated.

Tree A + Tree B · start at 10 + 0 and move one bird across

10 + 0	9 + 1	8 + 2	7 + 3	6 + 4	5 + 5
4 + 6	3 + 7	2 + 8	1 + 9	0 + 10	

Tree A counts down 10, 9, 8 … 0, so there are 11 arrangements.

Tree A and Tree B are different places, so there are 11 arrangements; as unordered pairs there are 6.

TEACHER MODELLING ROUTINE **I do → We do → You do**

WATCH FOR

Jumping about randomly, which makes it hard to tell if a pair has been missed.

REMEMBER

Say it to students as: "Move one bird across each time and write it down."

MATERIALS

Counters, two tree mats, bead strings, recording tables, ten frames.