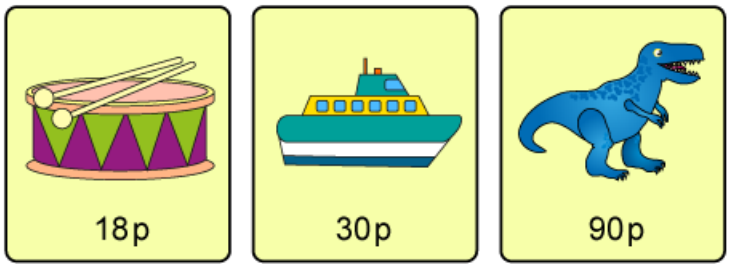
7. Task: Provide each pupil with 2p, 5p and 10p coins (real or otherwise), then ask pupils to show how to pay for:
    a. the drum with 2p coins
    b. the boat with 5p coins
    c. the dinosaur with 10p coins



Assessment guidance: To assess whether pupils can recite the number sequences, teachers must listen to each pupil count. This can be done through specifically planned tasks, or by carefully watching and listening to an individual pupil during daily counting as part of class routines.

The example questions and tasks above can be used to assess whether pupils can enumerate objects in groups of 2, 5 or 10. However, simply providing the correct answers to the example questions does not demonstrate that a pupil has met this part of the criterion – teachers should assess pupils in small groups to ensure that they are counting in multiples of 2, 5 or 10 rather than in ones.

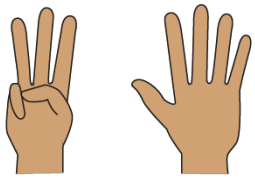
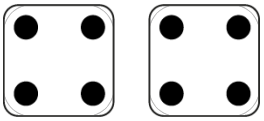
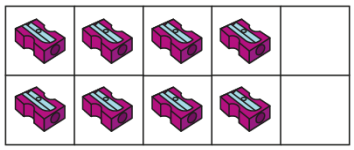
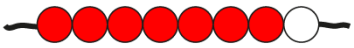
1AS–1 Compose and partition numbers to 10

Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers.

1AS–1 Teaching guidance

Learning to ‘see’ a whole number and the parts within it at the same time is an important stage in the development of pupils’ understanding of number. Composing numbers (putting parts together to make a whole) underpins addition, and decomposing a number into parts (partitioning) underpins subtraction. Exploring different ways that a number can be partitioned and put back together again helps pupils to understand that addition and subtraction are inverse operations.

Pupils should be presented with varied cardinal (quantity) representations, both concrete and pictorial, which support identification of the ‘numbers within a number’. The examples below provide different ways of showing that 8 can be composed from 2 numbers. The representations draw attention to the parts within the whole.

 **Figure 17: 8 represented as 3 fingers and 5 fingers**	 **Figure 18: 8 represented as 6 and 2 with base 10 number boards**	 **Figure 19: 8 represented as two 4-value dice**
 **Figure 20: 8 represented as 2 rows of 4**	 **Figure 21: 8 represented as tally marks: 5 and 3**	 **Figure 22: 8 represented on a bead string: 7 and 1**

Pupils should learn to interpret and sketch partitioning diagrams to represent the ways numbers can be partitioned or combined. At this stage, these should be used alongside quantity images to support development of the understanding of quantity. Pupils should be able to relate the numerals in the partitioning diagrams to the quantities in images, and use the language of parts and wholes to describe the relationship between the numbers.

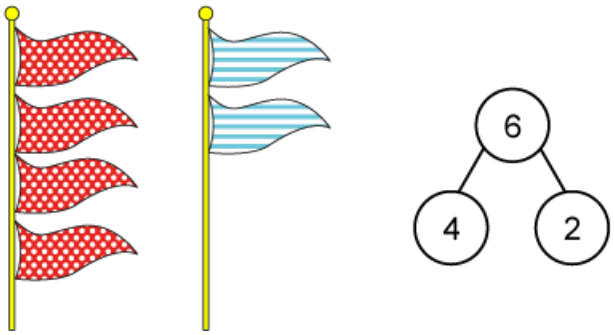


Figure 23: using a partitioning diagram to represent 6 flags, consisting of 4 spotty flags and 2 stripy flags

Language focus

“There are 6 flags. 4 are spotty and 2 are stripy.”

“6 is the whole. 4 is a part. 2 is a part.”

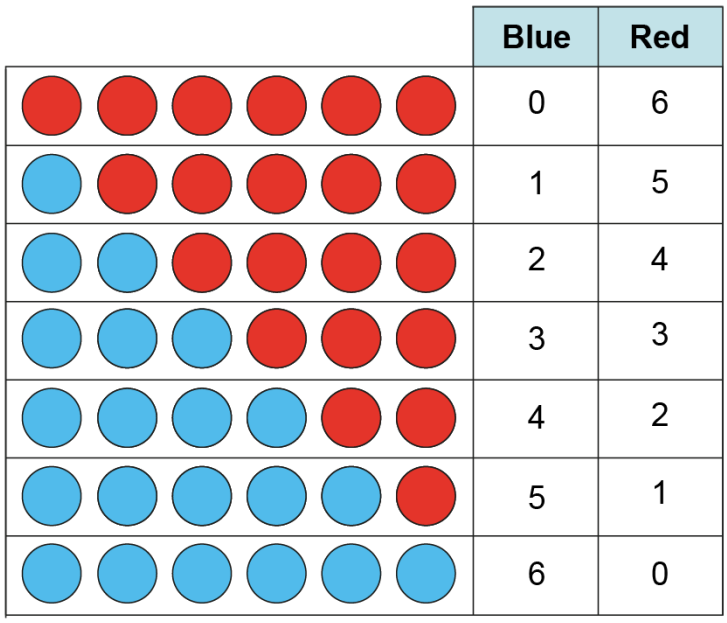
Pupils should also experience working with manipulatives and practise partitioning a whole number of items into parts, then putting the parts back together. They should understand that the total quantity is conserved. Pupils should repeatedly partition and recombine the whole, in different ways.

Pupils should learn how to work systematically to partition each of the numbers to 10 into 2 parts. They should recognise that there is a finite number of ways that a given number can be partitioned.

Pupils should pay attention to the patterns observed when working systematically, for example:

- in each step below, the value of one part increases by 1 and the value of the other part decreases by 1, while the whole remains the same
- number pairs are repeated, but with the values reversed, for example when 6 is the whole, the parts can be 2 and 4, or 4 and 2 (pupils must be able to identify what is the same and what is different between these two options; this lays the foundations for understanding the commutative property of addition)

Pupils must be able to describe and understand these patterns.



Blue	Red
0	6
1	5
2	4
3	3
4	2
5	1
6	0

Figure 24: working systematically to partition 6

Once pupils have learnt to write addition and subtraction equations, they should use these to express the different ways that numbers can be composed and decomposed (see **1AS–2**), for example:

$6 = 2 + 4$ $6 = 4 + 2$ $6 - 4 = 2$ $6 - 2 = 4$

Pupils should learn to recognise odd and even numbers, up to 10, based on whether they can be composed of groups of 2 or not. Base 10 number boards, or tens frames with counters shown arranged in twos, can be used to expose the structure of odd and even numbers.

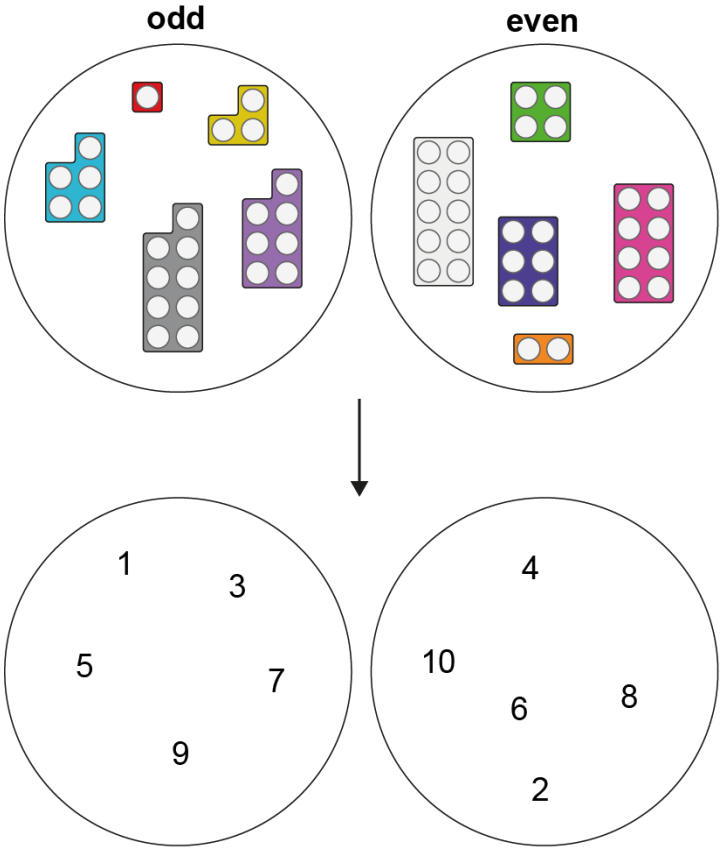


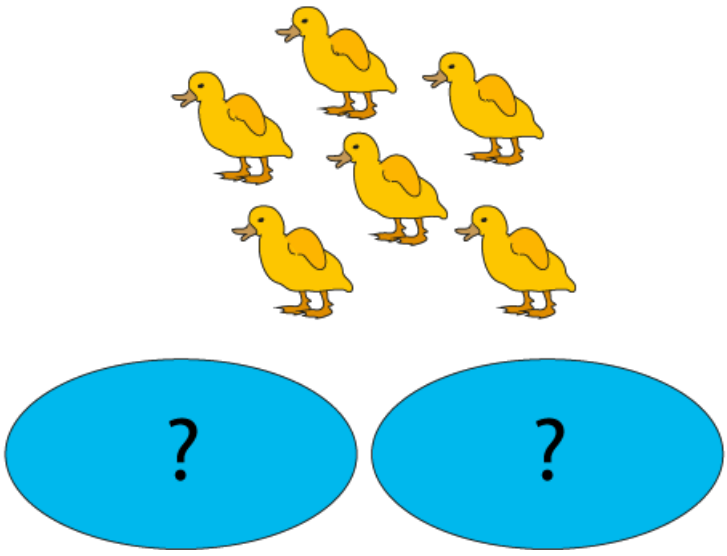
Figure 25: odd and even numbers up to 10

Making connections

Composing and decomposing numbers within 10 can be expressed with addition and subtraction equations (1AS–2), and is the basis of fluency in addition and subtraction facts within 10 (1NF–1). Here, pupils learn to identify odd and even numbers, while in 1NF–2 they develop fluency in the odd and even number sequences through practising skip counting.

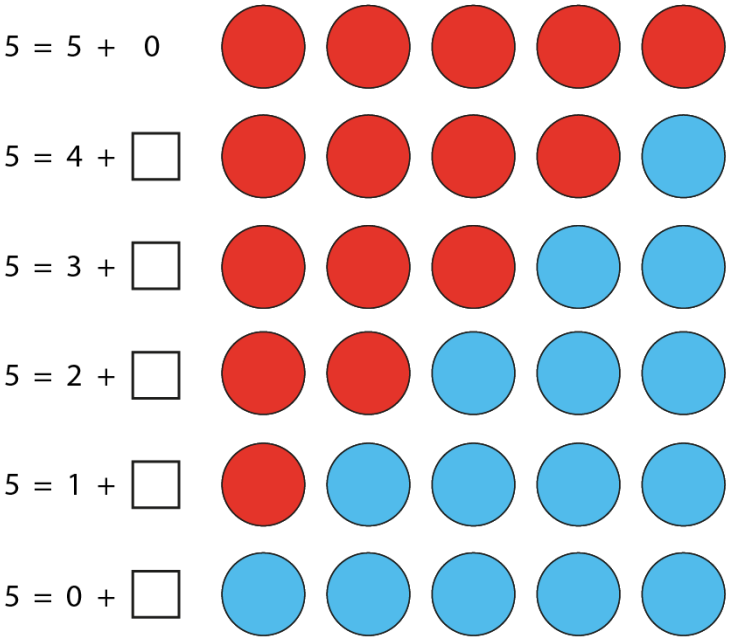
1AS–1 Example assessment questions

1. Mother duck is in the water with her 6 ducklings. There are 2 ponds. How many ducklings could be in each pond?



2. Fill in the missing numbers.

a.



b.

$7 + \square = 7$

$6 + \square = 7$

$5 + \square = 7$

$4 + \square = 7$

$3 + \square = 7$

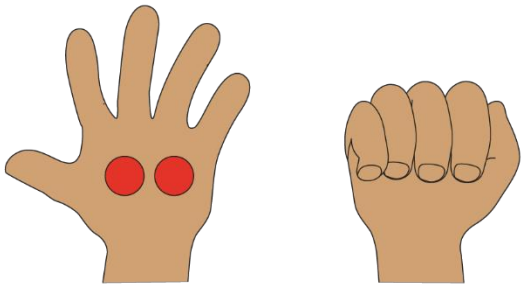
$2 + \square = 7$

$1 + \square = 7$

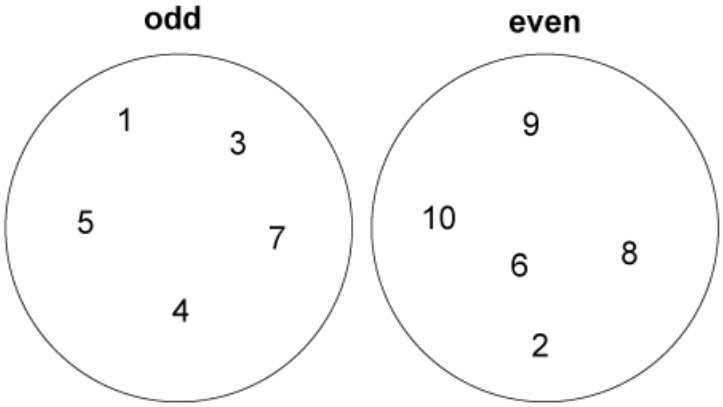
$0 + \square = 7$

3. Task: Provide each pupil with a tens frame and counters in 2 colours, then ask pupils to use the manipulatives to answer questions such as the following.

   “I am holding 9 counters altogether. How many counters are there in my closed hand?”



4. Underline the numbers that are in the wrong sorting circle.



5. Write the missing numbers in these odd and even sequences.

1	3			9

2		6		10

Assessment guidance: The focus of this criterion is understanding that numbers can be composed from, and partitioned into, smaller numbers. Pupils are assessed separately on their fluency in number facts within 10, in criterion **1NF–1**. Therefore manipulatives such as counters and tens frames, or counters and partitioning diagram templates, should be made available to pupils during assessment of this criterion so that the questions are not dependent on pupils’ emerging number facts fluency.

Note that Example assessment question 2 relies on pupils having learnt to write and interpret addition and subtractions equations. This question should only be used to assess understanding of composition and partitioning after pupils have met criterion **1AS–2**.