



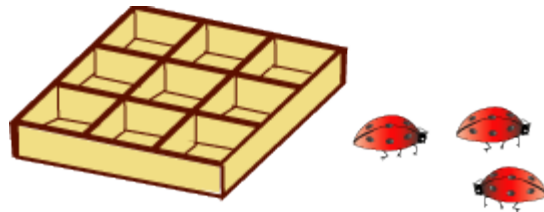
Lesson 1 – 13.07.2020

LO: Problem Solving

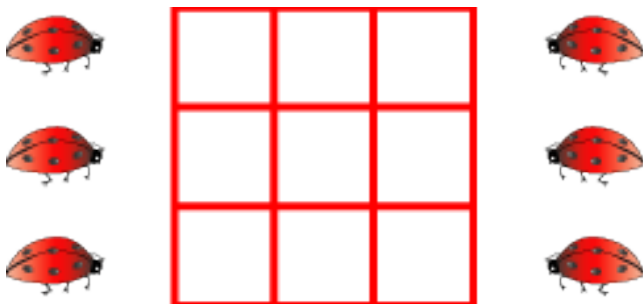
Success Criteria:

1. Draw a grid 3 squares wide and 3 squares high
2. Use counters, pieces of paper or small toys to arrange in the boxes so that there are just two in every column and every row.
3. Then try again and see how many different ways there are to arrange the ladybirds. Have you found all the possibilities?

Some toy ladybirds are kept in this box which has 9 little square compartments.

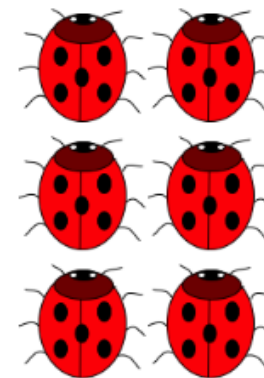


Can you place six ladybirds into the box so that there are just **two ladybirds in every column and every row**?



Extension:

**How many ways can you find** of putting the ladybirds in the box so that there are just two ladybirds in every column and every row?



1. Begin with Task 1– try to use a **systematic method** (using a pattern to make sure you get all the possible answers) and **write them in order**.
2. Then have a go at Task 2 – **read the clues carefully** to get to the correct solution.

### Task 1

#### Ben's numbers

Ben has written a list of different whole numbers.  
The digits of each number add up to 5.  
None of the digits is zero.

Here is one of Ben's numbers.

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Ben has written all the numbers he can think of.  
How many different numbers are there in his list?

Write all the numbers in order.

#### Challenge:

What if the digits add up to 4, or if they add up to 6? How many different numbers are there now?

### Task 2

#### Rows of coins



1. Take five coins: 1p, 2p, 5p, 10p, 20p.  
Put them in a row using these clues.  
The total of the first three coins is 27p.  
The total of the last three coins is 31p.  
The last coin is double the value of the first coin.
2. Take six coins: two 1p, two 2p and two 5p.  
Put them in a row using these clues.  
Between the two 1p coins there is one coin.  
Between the two 2p coins there are two coins.  
Between the two 5p coins there are three coins.

What if you take two 10p coins as well, and between them are four coins?

