

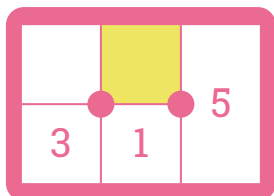
DEKA DOTS

STRATEGIES

1. Look for dots that only touch one empty box.

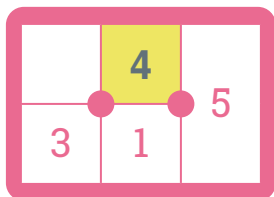
If a dot has all but one of the boxes that touch it filled, then we can fill in the empty box.

What number fills the highlighted box?



The right dot touches a 5, a 1, and the empty box.

Since $\boxed{1} + \boxed{5} + \boxed{4} = 10$, the empty box is a 4.

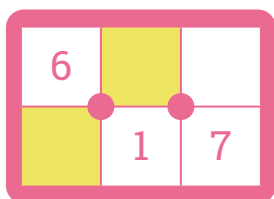


Then, how can we complete the puzzle?

2. Combine clues.

Sometimes we need to look at multiple clues at the same time.

How could we fill the highlighted boxes below?

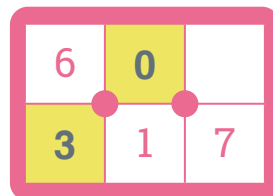


The two filled boxes surrounding the left dot sum to $6 + 1 = 7$. So, the highlighted boxes must sum to 3. We can either use 1 and 2 or 3 and 0.

We can't use a 1 because both highlighted boxes touch a 1. So, we must use 3 and 0.

Since two filled boxes surrounding the right dot already sum to $7 + 1 = 8$, the 3 cannot touch the right dot.

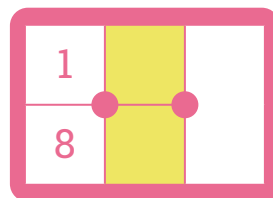
So, we must place the 3 and 0 as shown.



3. Look for dots surrounded by boxes that sum to 9.

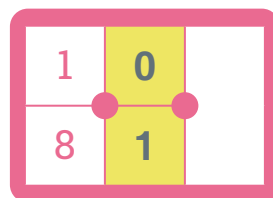
If the boxes around a dot add up to 9, then the remaining empty boxes must add up to 1. If there are two boxes, they must be filled with a 1 and a 0.

How could we fill the highlighted boxes below?



The two filled boxes surrounding the left dot add up to 9 ($1 + 8$). So, the two highlighted boxes must add up to 1. They can only be a 1 and a 0.

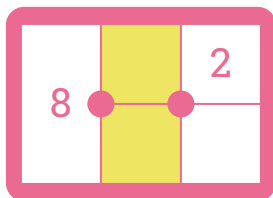
The 1 can't touch another 1, so we place the 1 on the bottom and the 0 on top.



4. Look for dots surrounded by boxes that sum to 8.

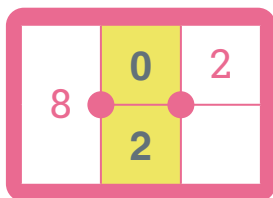
If the boxes around a dot add up to 8, then the remaining empty boxes must add up to 2. If there are only two empty boxes, we can make 2 with two 1's, or a 0 and a 2.

How could we fill the highlighted boxes below?



The filled box that touches the left dot is an 8. So, the two highlighted boxes add up to 2. Since the boxes touch each other, they cannot both be 1's. So, they must be a 2 and a 0.

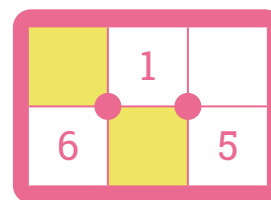
The 2 can't touch another 2, so we place the 2 on the bottom and the 0 on top.



5. Look for dots surrounded by boxes that sum to 7.

If the boxes around a dot add up to 7, then the remaining empty boxes must add up to 3. If there are only two empty boxes, we can make 3 with a 1 and a 2 or with a 0 and a 3.

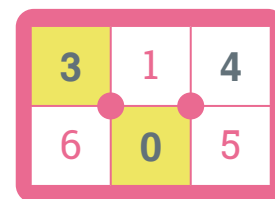
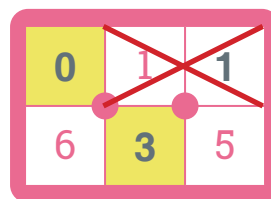
How could we fill the highlighted boxes below?



The filled boxes that touch the left dot add up to 7. So, the highlighted boxes must add up to 3.

Since both highlighted boxes touch a 1, we cannot use 1+2. So, these boxes must be filled with a 3 and a 0.

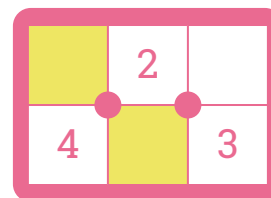
If we fill the bottom box with a 3, the right dot needs a 1 to make 10. We can't place two 1's next to each other, so the bottom box must be a 0. We complete the puzzle as shown.



6. Look for dots surrounded by boxes that sum to 6.

If the boxes around a dot add up to 6, then the remaining empty boxes must add up to 4. If there are only two empty boxes, we can make 4 with two 2's, or a 1 and a 3, or a 0 and a 4.

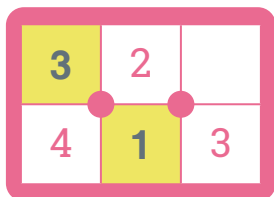
How could we fill the highlighted boxes below?



The filled boxes that touch the left dot add up to 6. So, the highlighted boxes must add up to 4.

Since both highlighted boxes touch a 2 and a 4, we cannot use $2+2$ or $0+4$. So, these boxes must be filled with a 3 and a 1.

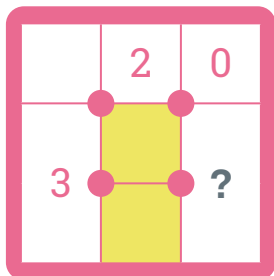
The 3 can't touch another 3, so we place the 3 in the top-left and the 1 in the bottom-middle box.



7. Use a known sum to fill in a box.

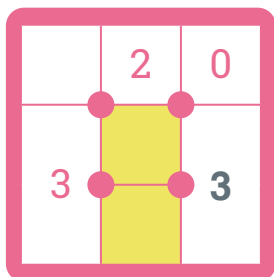
Sometimes we may not know what numbers fill a pair of boxes, but we know their sum.

What is the sum of the two highlighted boxes? Then, what number can we place in the box to their right?



The filled box that touches the bottom-left dot is a 3. So, the two highlighted boxes add up to 7 to make 10.

Next, we look at the bottom-right dot. Since the highlighted boxes add up to 7, the box with the ? must be a 3.

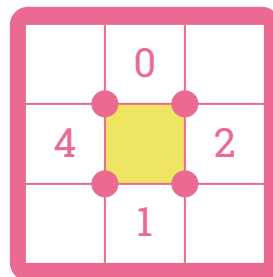


Then, how can we fill the highlighted boxes?

8. Look for boxes with limited options and see what works.

Sometimes we may need to try a number to find out it doesn't work.

What number can fill the center box below?

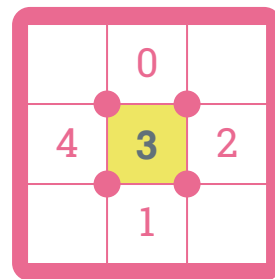
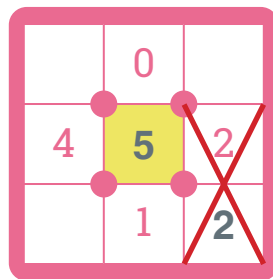


Since the box touches a 0, 1, 2, and 4, it cannot be any of these digits.

Since the boxes that touch the bottom-left dot add up to 5, the highlighted box can be at most 5.

If we place a 5 in the center, we must place a 2 in the bottom-right corner to make 10 around the bottom-right dot. The only digit left to place in the center is 3.

So, the center box must be a 3.



Then, how could we fill in the corners?