

# Diving into Mastery - Diving

## Adult Guidance with Question Prompts

Children subtract numbers where they cross the tens boundary. They first jump back to ten and then jump back the remaining amount. Using number lines and ten-frames will assist children to model the calculations involved.

When subtracting, does the starting number get bigger or smaller? How do you know?

If Jill started on 16, how many would she jump back to get to ten?

How many more steps would she jump from ten?

If Jill started on (insert a different number between 11 and 20), how many would she jump back to get to ten?

I started at 12 and jumped back to ten. Then, I jumped back five more. How many did I jump back in total?

I started at (insert a number greater than 12) and jumped back to ten. Then, I jumped back (insert a number less than ten) more. How many did I jump back in total?

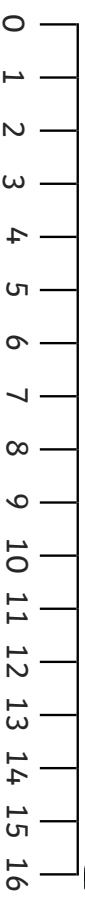
## Subtraction – Crossing 10 (1)



Jill flips back from a bigger number to a smaller one.

She starts at 16 and jumps back 9.

$$16 - 9 = ?$$

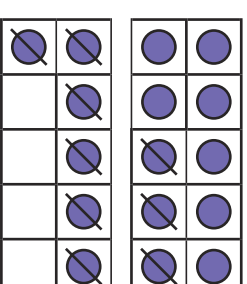


Here are 2 other ways to work out the answer:

$$16 - 9$$

(A diagram showing 16 minus 9 with a bracket under 16 and arrows pointing to a circled 6 and a circled 3, representing 10 minus 3.)

$$10 - 3 = 7$$



Use the 3 ways to answer these:

$$15 - 8$$

$$13 - 7$$

$$16 - 7$$

# Diving into Mastery - Deeper

## Adult Guidance with Question Prompts

Children use ten-frames and number lines to complete reasoning questions involving subtraction where they cross the tens boundary.

When using a number line, why is it a good idea to jump back to ten first?

How many did Jill jump back on the number line?

I jumped back eight and landed on ten. What was my starting number?

I jumped back (insert a different number less than ten) and landed on ten. What was my starting number?

I finished at five. In total, I had jumped back 11. What was my starting number?

What is the best way to partition the second number to calculate  $17 - 8$ ? Why?

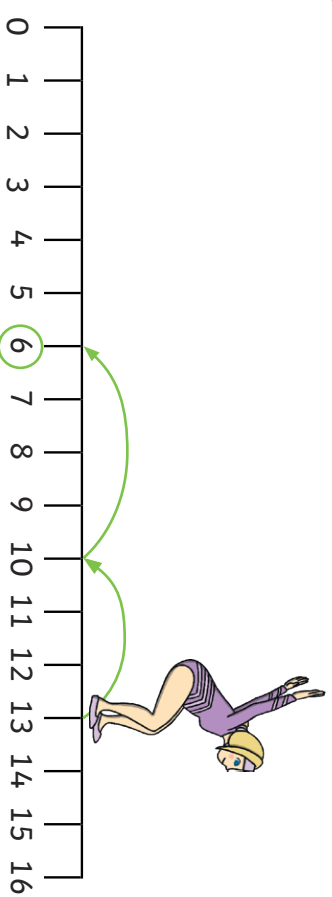
What is the best way to partition the second number to calculate (insert a different calculation)?

## Subtraction – Crossing 10 (1)



Jill starts at 13 and jumps back to another number.

**Tick the calculation to show her jump.**



$$13 - 6 =$$

$$13 - 4 =$$

$$13 - 7 =$$

Jill is working out  $17 - 8$ .

**Is this a good way to work out the answer? Why or why not?**

$$17 - 8$$

**Can you think of a better model?**

# Diving into Mastery - Deepest

## Adult Guidance with Question Prompts

Children complete subtraction calculations where they cross the tens boundary. They solve a problem with several possible answers. They write subtraction calculations to match the possible answers.

Could Jill have started on four? Why or why not?

Could Jill have started on ten? Why or why not?

Show me a different way of working out the answer to the problem. Can you use ten-frames? Can you partition numbers?

Which way do you find the easiest and why?

What is the answer to your problem? Show the answer using a number line.

## Subtraction – Crossing 10 (1)



Jill has jumped along a number line and ended up at 6.



She jumped more than 4 but less than 9.

**Where could she have started?**

Can you write a calculation for each of the starting places?

Make up your own puzzle about Jill for a friend to solve.