Is it Wednesday?

Annotation

Michaela understands that multiplication and division are inverse operations and readily uses her knowledge of the 7 times table to solve this division problem. She also knows and correctly applies a divisibility rule for 7, using this alternative method to confirm her solution. She rejects a written long division method because she is readily able to work mentally with the numbers in this problem.

Problem: Is it Wednesday?

The teacher shows this problem to the student and reads it with her as required:

If today is Wednesday, will it be Wednesday in 224 more days?

Student response

Michaela:	Yes it will be a Wednesday.
Teacher:	Tell me how you did that.
Michaela:	I know that this is a division problem and if 7 can evenly divide into 224 then it will be a Wednesday. If not it will be another day of the week. So I thought about multiples of 7 and immediately I saw that 30 x 7 = 210 would help. So I know that in 210 days it will be a Wednesday. It's another 14 days to make 224 and that's two weeks more weeks, so yes 224 day is exactly 32 weeks so, yes it'll be a Wednesday.
Teacher:	What do you know that helped you?
Michaela:	Well I know I can solve division problems using multiplication. Knowing all my tables helps too. But I also know that because 214 ends in a 4 it *could* be divisible by seven. So I could check by doubling the 4 at the end and subtract it from the 22 in 224. It gives me 14 which is divisible by 7 so that's another way. I also know how to do a written long division but didn't need to because the numbers were easy ones.