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UPC BARCODE CHECK DIGIT ALGORITHM WORKSHEET (EXEMPLAR)

The **check digit** (the last digit) is used to validate a UPC barcode. Find the check digit by applying an algorithm that uses the first 11 digits of the UPC barcode. To begin, enter all the UPC digits in the order they appear.

1	2	3	4	5	6	7	8	9	10	11	12
0	4	0	0	0	0	5	2	7	1	5	2

Step 1: Add all the odd-indexed digits. Multiply the sum by 3.

1		3		5		7		9		11	
0		0		0		5		7		5	

= (0 + 0 + 0 + 5 + 7 + 5) x 3 = 51

Step 2: Add all the even-indexed digits (except the last digit).

	2		4		6		8		10		
	4		0		0		2		1		

= (4 + 0 + 0 + 2 + 1) = 7

Step 3: Combine both sums. Find the “modulo 10” of that result. Subtract the “module 10” value (the remainder) from 10 to get the check digit. If the remainder is 0, the check digit is 0.

= (51 + 7) = 58

CHECK DIGIT = 10 – (58 MODULO 10) = 10 – 8 = 2

CCSS.MATH.CONTENT.4.OA.A.3: Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted.