

## Formulas for checking the Bookland EAN & ISBN

The following formulas are taken from the Machine-Readable Coding Guidelines for the US Book Industry, which you can order now from BISG on the web.

### Checking the Bookland EAN

1. Assign the constant weighting factors associated with each position in the EAN. (Alternating 1 and 3. See the table in step 2.)
2. Multiply each digit by its associated weighting factor and add together. For example, calculations for EAN 9780901690548 would be:

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<b>Weighting Factors</b>	1	3	1	3	1	3	1	3	1	3	1	3	1
<b>Bookland EAN</b>	9	7	8	0	9	0	1	6	9	0	5	4	8
<b>Values (product)</b>	9+	21+	8+	0+	9+	0+	1+	18+	9+	0+	5+	12+	8 = <b>100</b>

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3. Divide the sum by the number 10 and the result must be a whole number with no remainder.
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### Calculating the check digit for the ISBN

1. Remove first three digits (978) and the last digit from the Bookland EAN. (The last digit is the Bookland EAN check digit.) You are left with a nine-digit number. For example, EAN 9780940016330 becomes ISBN 094001633.
2. Multiply each digit by its associated weighting factor and add together. For example, calculations for ISBN 094001633 would be:

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<b>Weighting Factors</b>	10	9	8	7	6	5	4	3	2
<b>ISBN</b>	0	9	4	0	0	1	6	3	3
<b>Values (product)</b>	0 +	81 +	32 +	0 +	0 +	5 +	24 +	9 +	6 = <b>157</b>

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3. Divide the sum by the number 11. (157/11 = 14 with 3 remainder)
4. Subtract the remainder, if any, from 11 to get the check digit. (11 - 3 = 8). (If the check digit is 10, it is represented by the Roman numeral X.) The final ISBN in our example is 0-940016-33-8.