

Puzzle of the Week

Self-Describing Numbers – 1

The number 1210 is a *Self-Describing Number* because each digit in order describes how many digits of that type there are - there is 1 0, 2 1's, 1 2, and 0 3's. Similarly, 2020 is a Self-Describing Number because it has 2 0's, 0 1's, 2 2's, and 0 3's.

<u>1</u>	<u>2</u>	<u>1</u>	<u>0</u>
# of 0's	# of 1's	# of 2's	# of 3's

<u>2</u>	<u>0</u>	<u>2</u>	<u>0</u>
# of 0's	# of 1's	# of 2's	# of 3's

THE CHALLENGE: Find a Self-Describing Number that has five digits.

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# of 0's	# of 1's	# of 2's	# of 3's	# of 4's

EXPLORATION: Why are there no Self-Describing Numbers with 1, 2, or 3 digits?