

4. Remaining Space

Whether the next message fits

An AI agent's 3,000-token context window already holds 1,800 tokens, marked X below. A new 1,400-token user message arrives. Number the chunks into the empty cells, one chunk per cell, and see whether the whole message fits.

Step 1: The message in chunks

$1,400/100 = 14 \text{ chunks}$

Step 2: Number the chunks into the empty cells

1 - 1,000	X	X	X	X	X	X	X	X	X
1,001 - 2,000	X	X	X	X	X	X	X	1	2
2,001 - 3,000	3	4	5	6	7	8	9	10	11

Step 3: Does the whole message fit?

- ☐ fits
- ☒ does not fit

Practice 1

An AI agent's 3,000-token context window already holds 1,200 tokens, marked X below. A new 900-token user message arrives. Number the chunks into the empty cells, one chunk per cell, and see whether the whole message fits.

Step 1: The message in chunks

Step 2: Number the chunks into the empty cells

1 - 1,000	X	X	X	X	X	X	X	X	X
1,001 - 2,000	X	X							
2,001 - 3,000									

Step 3: Does the whole message fit?

- ☐ fits
- ☐ does not fit

4. Remaining Space (continued)

Practice 2

An AI agent's 3,000-token context window already holds 2,300 tokens, marked X below. A new 1,100-token user message arrives. Number the chunks into the empty cells, one chunk per cell, and see whether the whole message fits.

Step 1: The message in chunks

Step 2: Number the chunks into the empty cells

1 - 1,000	X	X	X	X	X	X	X	X	X
1,001 - 2,000	X	X	X	X	X	X	X	X	X
2,001 - 3,000	X	X	X						

Step 3: Does the whole message fit?

☐ fits ☐ does not fit