BuildMath

Divide Spaces

One worked example, with the maths behind each result - follow it in the app and check it by hand.

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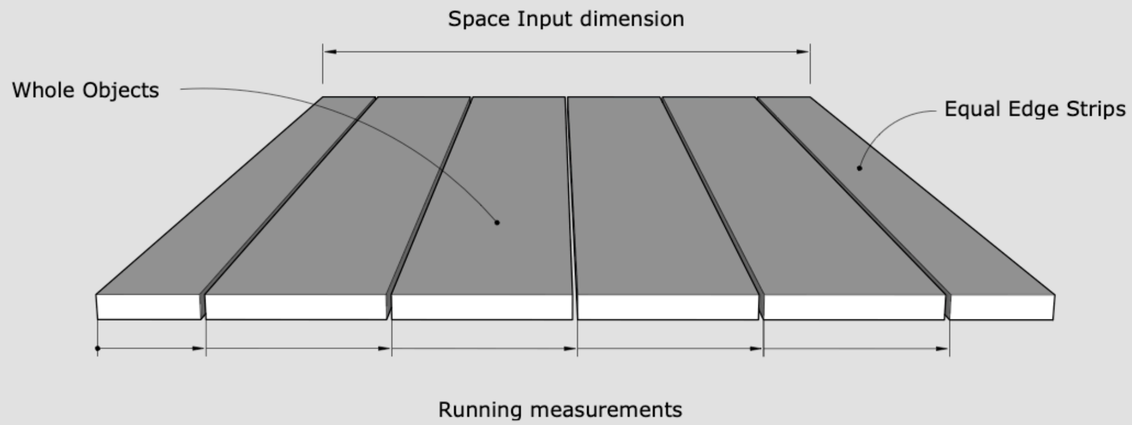


Divide Spaces fits whole objects plus gaps into a space and splits what's left evenly between the two ends, or runs a sequence from a start point.

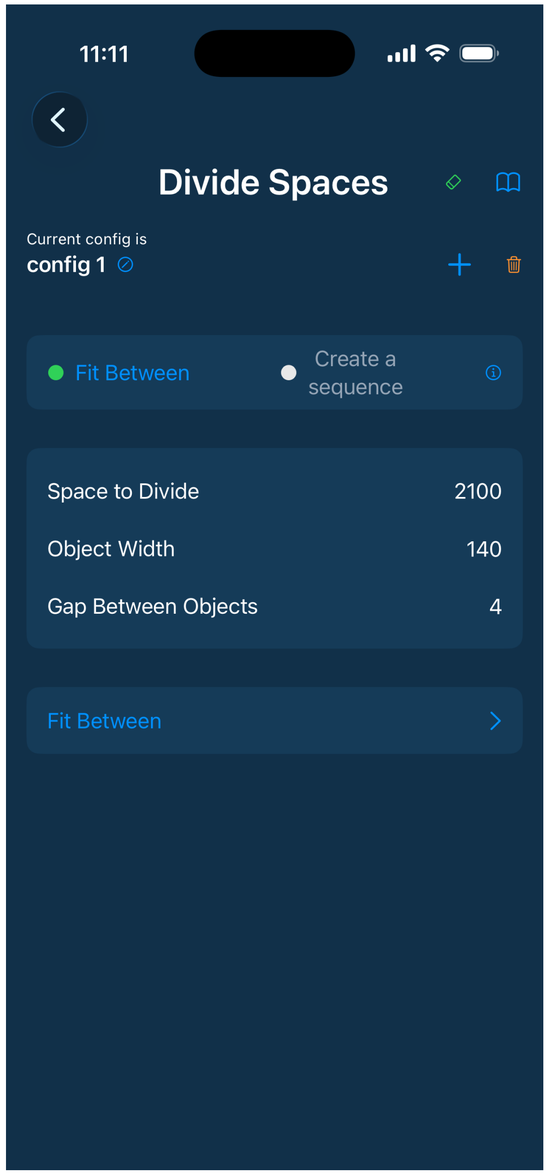
Decking boards are one use; tiles, cladding and sheet layouts work the same way.

Whole objects =
(space + gap) ÷ (object + gap), rounded down

Split object at each end = what's left ÷ 2 – gap

Note:
To spread objects evenly across an opening, with the gap adjusted to fit, like balusters, use Object + Gap.

Inputs



Choose Fit Between or Create a Sequence

Fit Between - whole objects in a set space, with a split object at each end. This example is Fit Between.

Create a Sequence - objects and gaps run from a start point up to a target length.

Enter the values

Space to Divide	2100 - the deck width.
Object Width	140 - the board.
Gap Between Objects	4 - the gap between boards.

Entering values and saving configs: see Build Math - the basics.

Results



Fit Between
(2100 + 4) ÷ (140 + 4) = 14.6 - round down to 14 whole objects.
14 × 140 + 13 × 4 = 2012 for the whole objects and the gaps between them.
2100 – 2012 = 88 left; 88 ÷ 2 – 4 = 40 split object at each end.
Marks - object 'away' of mark: 0 (start with object of 40), 44, 188, 332 ... 1916, 2060 (finish with object of 40).
14 is an even number, so the setout is centred on a gap.

Offset by half
Moves the setout half an object and gap (72) - the split objects get bigger.
44 + 72 – 4 = 112 split object at each end, 13 whole objects, centred on an object.
Marks: 0, 116, 260 ... 1844, 1988.

The next page shows the setout centred on a gap and on an object.

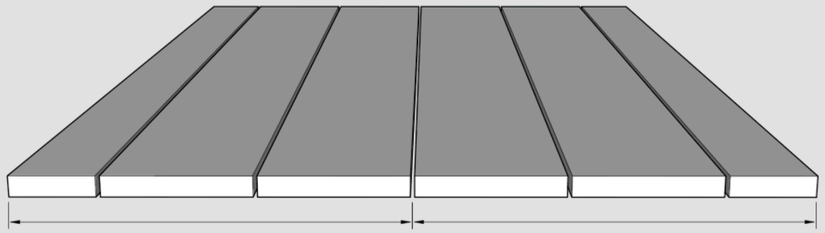
Modify
Adjust the gap, add a markout offset or move the setout left or right; the results and the list update.

Create a Sequence - same object and gap, target length 4000
(4000 + 4) ÷ 144 = 27.8 - round down to 27 objects.
27 × 144 – 4 = 3884 calculated length (no gap after the last object); 116 remaining.
Marks start at 0: 0, 144, 288 ... 3744.

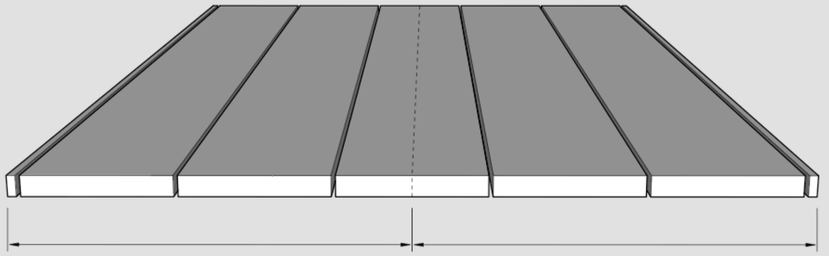
The last page shows Fit Between and Create a Sequence side by side.

Read the list out loud: see Build Math - the basics.

Offset by half



Gap at Centre



Centre of Object at centre

Fit Between - Create a Sequence

