

Rectangle areas 1

Activity:

This activity starts with a hundred square with 1 in the top-left square and a random rectangular shape coloured from that top-right corner.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The activity involves firstly finding out the area of that rectangle. By area we mean how many squares are coloured.

After that, point out that the bottom-right number is 24, in this case. The problem is to see whether students can find out the area of the rectangle if they are only told this bottom-right number.

Pressing the  button will produce another random rectangle. You may want the students to see several examples to help the students with this.

It may be helpful to give the students a sheet with this hundred square, so that they can consider different cases themselves. A copy of such a sheet can be found in the General Resources section. Make sure you choose the one which starts with 1 rather than 0 (as this hundred square has 1 in the top-left corner).

Teaching considerations:

This activity helps students get a sense of what area is about. The rule involves thinking of the tens and units digits of the bottom-left number separately. This is an opportunity to use the language of *tens digit* and *units digit*.

The process of finding a rule after involves spotting a pattern across examples, making a conjecture, testing that conjecture with other cases. However, conjectures remain

conjectures until there is some justification for why a proposed rule is how it is.
Encourage students to give reasons for why a rule works, or to offer a counter example if they feel a proposed rule is not correct.