

# DOPPIOZERO

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## Organic multiplication table

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8 Novembre 2014

*Mangrovia is the place where [Roberto](#) Casati and [Goffredo](#) Puccetti talk about design. This conversation has started in December 2013. We are interested in the intellectual intricacy of design. We keep our eyes open on good and bad design – equally important for us. Equally important are theory (mostly from cognitive science) and practice (mostly from communication and process design).*



*Mangrovia è dal dicembre 2013 la bacheca appunti di Roberto Casati e Goffredo Puccetti sul design. Il design ci interessa per la sua complessità intellettuale. Cerchiamo intorno a noi esempi di buono e cattivo design e ne parliamo prendendo spunto dalla teoria (soprattutto dalle scienze cognitive) e dalla pratica (soprattutto dalla comunicazione e dai processi di progettazione).*

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Maths teaching in the secondary school uses cartesian representations, i.e. diagrams centered on an origin, with the upper right quadrant occupied by positive numbers. The multiplication table taught in primary school is not well aligned with this later practice. It is, in its own, a cartesian representation, but the origin for positive numbers is in the top left corner instead of being in the bottom left corner.

Let us thus introduce the Organic Multiplication Table, that has the same spatial orientation as the top right quadrant of the standard Cartesian representation.

5					
4					
3					
2					

1					
	1	2	3	4	5

As adults, we have interiorized a number of (conventional) interpretations of the graphic features of Cartesian space. For instance, *growth* or *increase* is a movement towards the upper right corner of the space; *decrease* is a movement towards the bottom right corner. We also see that certain areas are equivalent to or larger than other areas. Under certain interpretations we literally see accelerations and linear changes. Finally, most graphs used for displaying statistics have the « growth » orientation built in.

Some of these later cognitive abilities can be foreshadowed by training on a representational space that is the same as will be used later on in life.

You can download a pdf version of Mangrovia Design Collective's Organic Multiplication Table: use it in schools and with your children!

[Organic Multiplication Table by Mangrovia-Collective](#)

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Se continuiamo a tenere vivo questo spazio è grazie a te. Anche un solo euro per noi significa molto. Torna presto a leggerci e [SOSTIENI DOPPIOZERO](#)

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57
4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76
5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114
7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133
8	16	24	32	40	48	56	64	72	80	88	96	104	112	120	128	136	144	152
9	18	27	36	45	54	63	72	81	90	99	108	117	126	135	144	153	162	171
10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190
11	22	33	44	55	66	77	88	99	110	121	132	143	154	165	176	187	198	209
12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228
13	26	39	52	65	78	91	104	117	130	143	156	169	182	195	208	221	234	247
14	28	42	56	70	84	98	112	126	140	154	168	182	196	210	224	238	252	266
15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285
16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
17	34	51	68	85	102	119	136	153	170	187	204	221	238	255	272	289	306	323
18	36	54	72	90	108	126	144	162	180	198	216	234	252	270	288	306	324	342
19	38	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323	342	361
20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380
21	42	63	84	105	126	147	168	189	210	231	252	273	294	315	336	357	378	399
22	44	66	88	110	132	154	176	198	220	242	264	286	308	330	352	374	396	418
23	46	69	92	115	138	161	184	207	230	253	276	299	322	345	368	391	414	437
24	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384	408	432	456
25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475