

12/23/2014 This spreadsheet lists the parts required to "upgrade" the Education Core Set (45544) and Expansion Set (45560) to Retail Set (31313) so you can build robots from Home Edition and Laurens Valk's book.

See Laurens Valk's article "The Difference Between LEGO MINDSTORMS EV3 Home Edition (#31313) and LEGO MINDSTORMS Education EV3 (#45544)" (November 2013), at <http://robotsquare.com/2013/11/25/difference-between-ev3-home-edition-and-education-ev3/>, specifically the paragraph "Upgrading Elements from Education Edition to Home Edition". Parts comparison based upon Brick Dojo list at <https://brickdojo.wordpress.com/2013/08/14/mindstorms-ev3-education-core-set-expansion-set-parts-comparison/> Cross-checked against Thomas Rosendahl's list at https://docs.google.com/document/d/1yEfuCvZp1yX_1D4gu4_4IX7kDwcavNncN4QV5hu4k/edit

Parts (except infrared sensor and beacon) can be ordered at <https://service.lego.com/en-us/replacementparts#BasicInfo>
The infrared sensor (45509) and beacon (45508) can be ordered at <http://shop.lego.com/en-US/Pick-A-Brick-ByTheme#shoplink>

#	Part #	Design #	Quantity Required	Unit Price US\$	Total Price US\$	Notes	Minimum Quantity Required *	Minimum Price US\$
1	4211375	2736	4	\$0.20	\$0.80	4 additional pieces required	4	\$0.80
2	370626	3706	4	\$0.21	\$0.84	4 additional pieces required	4	\$0.84
3	4494222	4185	3	\$0.41	\$1.23	Color difference only; see part 4587275.	0	\$0.00
4	4188298	6536	8	\$0.17	\$1.36	Color difference only; see part 4211775.	0	\$0.00
5	4143187	6575	2	\$0.40	\$0.80	Color difference only; see part 4210759.	0	\$0.00
6	4227155	6590	9	\$0.10	\$0.90	Color difference only; see part 4211622.	0	\$0.00
7	6089573	13972	2	\$2.90	\$5.80	Identified as part 6044688 in Brick Dojo and Rosendahl lists; caterpillar track.	2	\$5.80
8	4629921	32005	2	\$0.29	\$0.58	Color difference only; see part 4629920.	0	\$0.00
9	4111998	32009	12	\$0.79	\$9.48	Using parts 4234240 (qty 4) and 4495412 (qty 6) (color difference only), only qty 2 are required.	2	\$1.58
10	4254606	32013	4	\$0.14	\$0.56	Color difference only; see part 4107085.	0	\$0.00
11	4189131	32014	1	\$0.33	\$0.33	Color difference only; see part 4107767.	0	\$0.00
12	4234429	32034	6	\$0.21	\$1.26	Color difference only; see part 4107783.	0	\$0.00
13	4211553	32039	2	\$0.22	\$0.44	Color difference only; see part 4107081.	0	\$0.00
14	6013936	32068	4	\$0.59	\$2.36		4	\$2.36
15	4211888	32138	4	\$0.33	\$1.32	Color difference only; see part 4119589.	0	\$0.00
16	4120017	32140	8	\$0.29	\$2.32	Color difference only; see parts 4141270 and 4211610.	0	\$0.00
17	4128598	32184	17	\$0.29	\$4.93	Using part 4121667 (qty 12) (color difference only), only qty 5 are required.	5	\$1.45
18	4189936	32192	4	\$0.25	\$1.00		4	\$1.00
19	4177430	32269	1	\$0.75	\$0.75	1 additional piece required	1	\$0.75
20	4140327	32271	12	\$0.52	\$6.24	Using part 4211624 (qty 4) (color difference only), only qty 8 are required.	8	\$4.16
21	4128594	32291	2	\$0.23	\$0.46	Color difference only; see part 4140430.	0	\$0.00
22	4141300	32293	4	\$0.73	\$2.92		4	\$2.92
23	4142135	32316	10	\$0.28	\$2.80	Using part 4211651 (qty 9) (color difference only), only qty 1 is required.	1	\$0.28
24	4128593	32348	4	\$0.42	\$1.68	Color difference only; see part 4509912.	0	\$0.00
25	4255563	32498	3	\$0.96	\$2.88	3 additional pieces required	3	\$2.88
26	4142822	32523	10	\$0.14	\$1.40	10 additional pieces required; using parts 4153707 (qty 4) and 4153718 (qty 6) (color difference only), no additional parts are required.	0	\$0.00
27	4495935	32524	6	\$0.37	\$2.22	Color difference only; see part 4495930.	0	\$0.00
28	4142823	32526	6	\$0.36	\$2.16	Color difference only; see part 4211713.	0	\$0.00
29	4522933	41239	4	\$0.51	\$2.04	Color difference only; see part 4522934.	0	\$0.00
30	4185661	41669	4	\$0.31	\$1.24	4 additional pieces required; using part 4522934 (qty 6) (color difference only), no additional parts are required.	0	\$0.00
31	4173975	41678	4	\$0.28	\$1.12	Color difference only; see part 4162857.	0	\$0.00
32	4175442	42003	14	\$0.26	\$3.64	Using part 4210857 (qty 12) (color difference only), only qty 2 are required.	2	\$0.52
33	4184286	44309	2	\$1.55	\$3.10	2 additional pieces required	2	\$3.10
34	4246901	50951	2	\$0.23	\$0.46		2	\$0.46
35	6024109	53550	1	\$0.71	\$0.71		1	\$0.71
36	6024106	54271	1	\$1.04	\$1.04		1	\$1.04
37	4545430	54821	3	\$0.36	\$1.08		3	\$1.08
38	4299389	56145	4	\$0.70	\$2.80	Using part 4297210 (qty 3) (color difference only), only qty 1 is required.	1	\$0.70
39	6015596	61070	1	\$0.83	\$0.83		1	\$0.83
40	6015597	61071	1	\$0.83	\$0.83		1	\$0.83
41	4645732	64289	8	\$0.39	\$3.12		8	\$3.12
42	4562805	64290	4	\$0.46	\$1.84	Using part 4611705 (qty 10) (color difference only), no additional parts are required.	0	\$0.00
43	4547582	64391	3	\$0.72	\$2.16	Using part 4541325 (qty 2) (color difference only), only qty 1 is required.	1	\$0.72
44	4558797	64393	3	\$0.75	\$2.25	Using part 4558731 (qty 1) (color difference only), only qty 2 are required.	2	\$1.50
45	4558802	64681	3	\$0.74	\$2.22	Using part 4558774 (qty 1) (color difference only), only qty 2 are required.	2	\$1.48
46	4547581	64683	3	\$0.73	\$2.19	Using part 4541924 (qty 2) (color difference only), only qty 1 is required.	1	\$0.73
47	4542573	64871	4	\$0.59	\$2.36	Using part 4542578 (qty 19) (color difference only), no additional parts are required.	0	\$0.00
48	45508		1	\$29.99	\$29.99	Identified as part 6014051 in Brick Dojo and Rosendahl lists; infrared beacon	1	\$29.99
49	4630114	92907	2	\$0.46	\$0.92		2	\$0.92
50	45509	95654	1	\$29.99	\$29.99	Identified as part 6009811 in Brick Dojo and Rosendahl lists; infrared sensor	1	\$29.99
51	4656205	98347	4	\$0.18	\$0.72		4	\$0.72
52	4657296	98568	6	\$0.97	\$5.82		6	\$5.82
53	4666999	99008	1	\$0.14	\$0.14	1 additional piece required	1	\$0.14
54	6031766	N/A	1	\$3.01	\$3.01	EV3 sticker sheet; not included in Brick Dojo or Rosendahl lists; see p. 5 of Valk's book for a picture of the stickers on LEGO pieces.	1	\$3.01
	TOTAL		239		\$165.44	MINIMUM TOTAL	86	\$112.23