Base 8 (Octal)

Places: The unit of each place is 8 times the unit of the place to the right (1*8* = 8, 8*8* = 64, 64*8* = 512, 512*8* = 4,096, etc)
Possible digits: 0 – 7

	4096's	512's	64's	8's	1's		4096's		512's		64's		8's		1's		in decimal
Examples:																	
573:			5	7	3	=					5*64	+	7*8	+	3*1	=	379
4106:		4	1	0	6	=			4*512	+	1+64	+	0*8	+	6*1	=	2,118
20531:	2	0	5	3	1	=	2*4096	+	0*512	+	5*64	+	3*8	+	1*1	=	8,537

Base 16 (Hexadecimal)

Places: The unit of each place is 16 times the unit of the place to the right (1*16* = 16, 16*16* = 256, 256*16* = 4,096, etc)
Possible digits: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, a, b, c, d, f (So a = 10, b = 11, c = 12, d = 13, e = 14 and f = 15)

	4,096's	256's	16's	1's		4,096's		256's		16's		1's		in base 10 (decimal)
Examples:														
a7d:		a	7	d	=			10*256	+	7*16	+	13*1	=	2,685
3e0b:	3	e	0	b	=	3*4,096	+	14*256	+	0*16	+	11*1	=	15,883
8cf2:	8	c	f	2	=	8*4,096	+	12*256	+	15*16	+	2*1	=	36,082

Base 3 (Ternary)

Places: The unit of each place is 3 times the unit of the place to the right (1*3* = 3, 3*3* = 9, 9*3* = 27, 27*3* = 81, etc)
Possible digits: 0, 1 and 2

	81's	27's	9's	3's	1's		81's		27's		9's		3's		1's		in base 10 (decimal)
Examples:																	
221:			2	2	1	=					2*9	+	2*3	+	1*1	=	25
2102:		2	1	0	2	=			2*27	+	1+9	+	0*3	+	2*1	=	65
12021:	1	2	0	2	1	=	1*81	+	2*27	+	0*9	+	2*3	+	1*1	=	142

Base 5 (Quinary)

Places: The unit of each place is 8 times the unit of the place to the right (1*5* = 5, 5*5* = 25, 25*5* = 125, 125*5* = 625, etc)
Possible digits: 0 – 4

	625's	125's	25's	5's	1's		625's		125's		25's		5's		1's		in decimal
Examples:																	
423:			4	2	3	=					4*25	+	2*5	+	3*1	=	113
1234:		1	2	3	4	=			1*125	+	2+25	+	3*5	+	4*1	=	194
23041:	2	3	0	4	1	=	2*625	+	3*125	+	0*25	+	4*5	+	1*1	=	1646

Homework Example - Count to 25 in base 5.

(Hint: Remember you cannot use any digits other than 0-4 in base 5.)

base 5	25's	5's	1's		25's		5's		1's		base 10
0:			0	=					0*1	=	**0**
1:			1	=					1*1	=	**1**
2:			2	=					2*1	=	**2**
3:			3	=					3*1	=	**3**
4:			4	=					4*1	=	**4**
10:		1	0	=			1*5	+	0*1	=	**5**
11:		1	1	=			1*5	+	1*1	=	**6**
12:		1	2	=			1*5	+	2*1	=	**7**
13:		1	3	=			1*5	+	3*1	=	**8**
14:		1	4	=			1*5	+	4*1	=	**9**
20:		2	0	=			2*5	+	0*1	=	**10**
21:		2	1	=			2*5	+	1*1	=	**11**
22:		2	2	=			2*5	+	2*1	=	**12**
23:		2	3	=			2*5	+	3*1	=	**13**
24:		2	4	=			2*5	+	4*1	=	**14**
30:		3	0	=			3*5	+	0*1	=	**15**
31:		3	1	=			3*5	+	1*1	=	**16**
32:		3	2	=			3*5	+	2*1	=	**17**
33:		3	3	=			3*5	+	3*1	=	**18**
34:		3	4	=			3*5	+	4*1	=	**19**
40:		4	0	=			4*5	+	0*1	=	**20**
41:		4	1	=			4*5	+	1*1	=	**21**
42:		4	2	=			4*5	+	2*1	=	**22**
43:		4	3	=			4*5	+	3*1	=	**23**
44:		4	4	=			4*5	+	0*1	=	**24**
100:	1	0	0	=	1*25	+	0*5	+	0*1	=	**25**