

### Encoding text on the computer: An ASCII encoding activity

As we discussed, computers work solely based on sequences of “on” and “off”, which are interpreted as binary representations of numbers. For numbers (binary or the usual base-10 representations) to encode characters in an alphabet, one needs to explicitly define an encoding — a table defining which number corresponds to which character in the alphabet.

The ASCII code (American Standard Code for Information Interchange) is the most common encoding used to map the first 127 numbers (1–31 are omitted below since they are non-printable characters):

32	( <i>space</i> )	48	0	65	A	82	R	97	a	114	r
33	!	49	1	66	B	83	S	98	b	115	s
34	“	50	2	67	C	84	T	99	c	116	t
35	#	51	3	68	D	85	U	100	d	117	u
36	\$	52	4	69	E	86	V	101	e	118	v
37	%	53	5	70	F	87	W	102	f	119	w
38	&	54	6	71	G	88	X	103	g	120	x
39	'	55	7	72	H	89	Y	104	h	121	y
40	(	56	8	73	I	90	Z	105	i	122	z
41	)	57	9	74	J	91	[	106	j	123	{
42	*	58	:	75	K	92	\	107	k	124	—
43	+	59	;	76	L	93	]	108	l	125	}
44	,	60	<	77	M	94	^	109	m	126	~
45	-	61	=	78	N	95	_	110	n	127	( <i>delete</i> )
46	.	62	>	79	O	96	`	111	o		
47	/	63	?	80	P			112	p		
		64	@	81	Q			113	q		

Carefully translate the following message and follow the instructions:

80 108 101 97 115 101 32 115 116 97 114 116 32 97 32 119 101 98 32 98 114 111 119 115 101 114 32

97 110 100 32 112 111 105 110 116 32 105 116 32 116 111 32 116 104 101 32 97 100 100 114 101 115

115 32 104 116 116 112 58 47 47 119 119 119 46 108 105 110 103 46 111 115 117 46 101 100 117 47

126 115 99 111 116 116 47 116 101 97 99 104 105 110 103 47 50 48 48 56 47 119 105 110 116 101 114

47 51 56 52 47 97 115 99 105 105 47 10