

Name: _____

Computer Data Representations

Exploring CS, Period: _____

Warm Up: How do you think information (numbers, text, images, etc.) stored in a Computer?

Computer Data Representation:

(Images: © 2005 Computer Science Unplugged (www.unplugged.canterbury.ac.nz) for classroom use only.)

1. Convert these Binary Numbers to Decimal:

Binary	Decimal
a) 00001	_____
b) 10000	_____
c) 10101	_____
d) 11111	_____
e) 01101	_____

2. What are these Binary encoded numbers in Decimal?

=
(=1, =0)

↑ ↓ ↑ =
(↑=1, ↓=0)

○ ○ ○ ○ ○ =
(⊙=1, ○=0)

=
(=1, =0)

☺ ☹ =
(☺=1, ☹=0)

👍 👎 👍 👎 =
(👍=1, 👎=0)

⊕ ⊕ ⊗ ⊕ =
(⊕=1, ⊗=0)

↻ ↻ ↻ ↻ ↻ =
(↻=1, ↺=0)

▲ ▼ ▲ ▼ ▼ =
(▲=1, ▼=0)

♠ ♠ ♠ ♠ ♠ =
(♠=1, ♣=0)

3. Convert these Decimal Numbers to Binary:

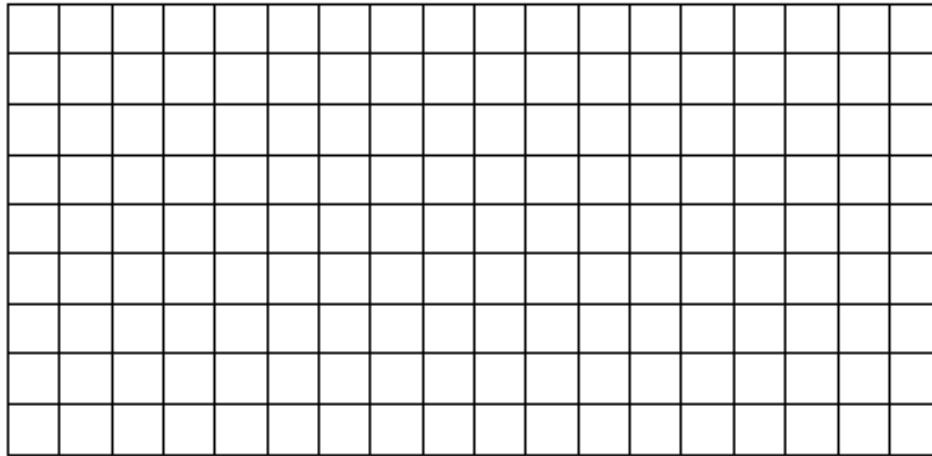
Decimal	Binary
a) 2	_____
b) 16	_____
c) 17	_____
d) 25	_____
e) 31	_____

4. What's the message? Can solve this encoded text message?

10100 01000 00001 01110 01011
 11001 01111 10101

1	2	3	4	5	6	7	8	9	10	11	12	13
a	b	c	d	e	f	g	h	i	j	k	l	m
14	15	16	17	18	19	20	21	22	23	24	25	26
n	o	p	q	r	s	t	u	v	w	x	y	z

5. Fill in the encoded squares for this image



4, 11
 4, 9, 2, 1
 4, 9, 2, 1
 4, 11
 4, 9
 4, 9
 5, 7
 0, 17
 1, 15

6. Encode an image of your own, draw it, then fill in the numbers that encode it

