Student Activity Guide: Converting Hexadecimal Name _____
Unit 1 Lesson 10

1. Warm-up. Complete the chart.

The first row is binary. The second row is decimal. The third row is hexadecimal.

0	**01**	**10**	**11**	**100**											
0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
0	**1**	**2**	**3**	**4**	**5**	**6**	**6**	**8**	**9**	**A**					

2. Convert hexadecimal to binary

Example: Convert Hexadecimal (103A) to Binary:

Look up each Hexadecimal digit equivalent in binary. Add leading zeros to make 4 total digits

1	0	3	A
0001	0000	0010	1010

Answer: **0001 0000 0010 1010**

Practice: Convert hexadecimal to binary

a. D3

b. E040

c. ABCD

3. Convert binary to hexadecimal

Example: Convert binary 1001 1101 1110 0100 to hexadecimal

Do the reverse of the process in step 2.

1001	1101	1110	0100
9	D	E	8

Answer: 9DE8

Practice: Convert binary to hexadecimal

a. 0010 1111 0010 0001

b.

4. Convert hexadecimal to decimal

Example: Convert hexadecimal (5A) to decimal

Think about the place values:

256's	16's	1's
0	5	A
0	80	10

0 + 80 + 10 = **90**

Practice: Convert hexadecimal to decimal

a. 3B

b. 10A

5. Convert Decimal to Hexadecimal

Example: Convert decimal 98 to hexadecimal

First Method: Convert to Binary, then Convert to Hexadecimal

64	32	16	8	4	2	1
1	1	0	0	0	1	0

Write the binary digits in groups of 4, then change to hexadecimal:

Binary: 0110 0010
Hexadecimal ex: 6 2

Second Method: Group by powers of 16
98 divided by 16 is 6, with 2 left over
hexadecimal: 62

Practice: Convert decimal to hexadecimal

a. decimal 100

b. decimal 266