Key Points

· Key Points For Binary Converter:

o This is given to the students to explore and describe some of the patterns or characteristics they discover.

o As the instructor, you are looking to see that each door has a 1 on it when flipped up.

o Along the top are only 0’s. There are 10 doors. The numbers that are exposed when the door is flipped up are ascending powers of 2 from right to left, starting with 2^0.

· Key Points For Base-2:

o Starting on the right-hand side, each place value is multiplied by a power of 2 (beginning with 2^0) (in base-10 it is always a power of 10).

o The only digit symbols that are used in binary are 0 and 1 (in base 10 or in our common number system, it is 0 to 9).

* The numerical value of the digit symbol, in this case 0 or 1, is multiplied by the power of 2 in the place value to determine the equivalent base-10 value.

· Key Points For Base-10:

o How can we describe base-10 the same way we have described base-2?

o The place values are powers of 10.

o The digits are 0 to 9 (we don’t have a 10’s digit).

· Key Points For Wrap-Up:

o What materials are students suggesting can be used to make a base-8 converter?

o Reflective question for next class: If I can create base-8, could I create base-16?

o Terminology: In binary each digit is referred to as a “bit.”