1. **What is the binary system based on?**

2. **In the base-10 number system, how many digits are used?**

3. **How does the binary system handle the addition of numbers, such as 1 plus 1?**

4. **Why do computers use the binary system to process information?**

5. **Explain how place values work differently in the base-10 and base-2 number systems.**

( ) Because it is easy to duplicate with an on/off system, where electricity is either on (represented by 1) or off (represented by 0).

( ) It's based on a base-2 number system, using only the digits 0 and 1.

( ) In the base-10 system, place values start with ones and move to tens, hundreds, and thousands, based on powers of 10. In contrast, in the base-2 system, place values start with ones and move to twos, fours, and eights, based on powers of two.

( ) 10 digits: 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9.

( ) In the binary system, when you add 1 plus 1, you move the 1 one spot to the left into the twos place and put a 0 in the ones place, resulting in the binary number 10, which equals 2 in the decimal system.

LIVEWORKSHEETS