

Student Worksheet

Ultimate Transistor Design Challenge: Independent Inquiry

Safety

Hot glue guns can burn. Scissors can cut. Use them with care.

Challenge #1

Build two model transistors and connect them so that the first one activates (or switches on) the second one.

Challenge #2

Build three model transistors and connect them so that either one OR the other can activate (or switch on) the third one. (This is called an “OR” gate.)

Challenge #3

Build three model transistors and connect them so that the first two must combine at the same time to activate (or switch on) the third one. (This is called an “AND” gate.)

Challenge #4

Build three model transistors and connect them so that the one transistor activates (or switches on) the other two. You must use the same amount of “electrons” as in the previous challenges. (This is called a “NAND” gate.)

Challenge #5

Build three model transistors and connect them so that the one transistor activates (or switches on) the other two equally. You must have the same amount of “electrons” in the “drain” in the 2 transistors that are switched on. (This is called a “NAND” gate.)

