Logic Gate Symbols

When we build NAND and NOR gates out of transistors, we want to think of them as a single gate rather than a complex arrangement of transistors.

Consider the following circuit, which implements a **NAND** gate:

![NAND gate circuit diagram]

We can replace the circuit within the box with the following NAND symbol. Note that there are 5 connections (just like in the box above):
- The inputs **A** and **B**, the output **Q** and **Power** and **Ground**.

![NAND gate symbol]

We can simplify the symbol even further by omitting Power and Ground. Since they are the same for every gate, there's no need to include them.

![Simplified NAND gate symbol]