Assess Logic

The three logical operators that can be used in JavaScript are listed in the table below:

Operator	Operation
&&	Logical AND
||	Logical OR
!	Logical NOT

The logical operators are typically used with operands that have a Boolean value of **true** or **false** – or values that can convert to **true** or **false**.

The **&&** logical AND operator will evaluate two operands and return **true** only if both operands are themselves **true**. Otherwise, the **&&** AND operator will return **false**. This is often used in conditional branching where the direction of the script is determined by testing two conditions. If both conditions are satisfied, the script will follow a particular direction, otherwise it will follow a different direction.

Unlike the **&&** logical AND operator, which needs both operands to be **true**, the **||** logical OR operator will evaluate two operands and return **true** if either one of the operands is itself **true**. If neither operand is **true** then the **||** OR operator will return **false**. This is useful to have a script perform a certain action if either one of two test conditions is satisfied.

The third logical operator is the **!** logical NOT operator that is used before a single operand, and it returns the inverse value of the operand. For example, if variable named "tog" had a **true** value then **!tog** would return **false**. This is useful to "toggle" the value of a variable in successive loop iterations with a statement such as **tog = !a** so that the value is reversed on each iteration – like flicking a light switch on and off.

The term "Boolean" refers to a system of logical thought developed by the English mathematician George Boole (1815-1864).