

# Current is consumed in a bulb

**Topic:** Current Electricity

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## Step 1

**Wrong belief:**

Current gets used up in the bulb, so less current comes out.

**Correct understanding:**

Many students imagine current like fuel that gets burned inside a bulb. This idea feels natural—but it is physically wrong and leads to serious mistakes in circuit questions.

## Step 2

**Wrong belief:**

Bulb “consumes” current to produce light.

**Correct understanding:**

A bulb does not consume current. It converts electrical energy into light and heat, not current itself. ??? Current is charge per second, not energy.

### Step 3

**Wrong belief:**

Current entering the bulb is greater than current leaving it.

**Correct understanding:**

In a steady circuit, ✓ Current entering the bulb = ✓ Current leaving the bulb  
Otherwise, charge would pile up inside the bulb—which never happens.

### Step 4

**Wrong belief:**

If current is not consumed, nothing should change in the bulb.

**Correct understanding:**

What changes is energy, not current. ✓ Charges lose electrical potential energy ✓  
Same charges continue moving ✓ Same amount of current flows everywhere in series

### Step 5

**Wrong belief:**

Dim bulbs have less current leaving them.

**Correct understanding:**

Dimness depends on power, not loss of current. Bulb brightness changes due to resistance and voltage, not because current is “used up.”

## Step 6

### Wrong belief:

Current decreases as we move along a series circuit.

### Correct understanding:

In a series circuit: Current is same at all points What drops is voltage, not current  
???? Voltage drops → ???? Energy released → ???? Current continues

## Step 7

### Wrong belief:

Bulb consumes current.

### Correct understanding:

✓ Bulb consumes energy ✓ Current is conserved ✓ Same current flows before and after the bulb  
???? Exams test this difference heavily.

## Key Formula

$$I = Q / t \quad P = VI$$

## Exam Trap

In many MCQs, options say “Current decreases after passing through bulb” □ This is always wrong for steady DC circuits.