Battery Supplies Current

Topic: Current Electricity

Step 1

Wrong belief:
Battery supplies current ⚡

Correct understanding:
Many students believe the battery directly pushes current into the circuit, like a pump pushing water. This idea feels intuitive—but it is incorrect and causes mistakes in exams.

Step 2

Wrong belief:
“Battery gives current” – NCERT line?

Correct understanding:
NCERT often uses simplified language such as “current flows from the battery”, which students misinterpret. The wording does not mean the battery creates or supplies current.

Step 3

Wrong belief:
Current already exists in the circuit

Correct understanding:
A conducting wire already contains free electrons. Current is simply the motion of these existing charges, not something newly produced by the battery.

Step 4

Wrong belief:
Battery maintains potential difference

Correct understanding:
The real function of a battery is to maintain a potential difference (voltage) between its terminals. This electric field causes charges to move, producing current.

Step 5

Wrong belief:
Battery = pressure, not water

Correct understanding:
Just like water pressure causes water to flow, voltage causes charge flow. The battery does not supply electrons—it provides the driving force.

Step 6

Wrong belief:
Same battery → different current?

Correct understanding:
For the same battery, current changes when resistance changes. This proves current depends on the external circuit, not the battery itself.

Step 7

Wrong belief:
Battery supplies voltage, NOT current

Correct understanding:
✔ Battery → maintains voltage ✔ Circuit → decides current Battery does NOT supply current

Key Formula

$I = V / R$

Exam Trap

Students often assume current depends only on the battery. In questions involving changing resistance, this misconception leads to wrong answers.