

Traditional: 09-10

Themed: 06-10

Resistor codes & equipment vs.
schematic diagrams and bulbs going
out/added, etc.

Resistor codes

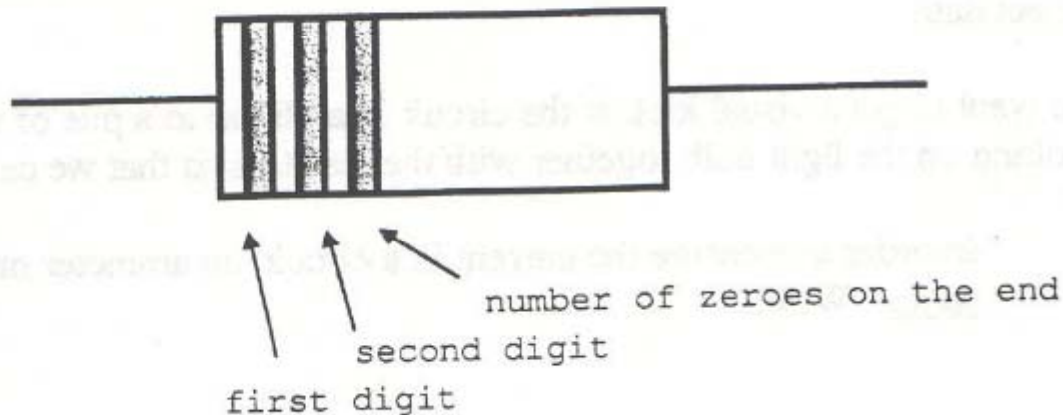
- Resistor codes use three colored stripes
- Fourth stripe is quality control codes (for accuracy, not for determining resistor value)

Reading a resistor code

Finding how many ohms a resistor is

- First two stripes are first two digits
- Third stripe tells how many zeros go after second digit
- You won't have to memorize colors, just use them
- Try some examples.....

0 = black
1 = brown
2 = red
3 = orange
4 = yellow
5 = green
6 = blue
7 = violet
8 = gray
9 = white

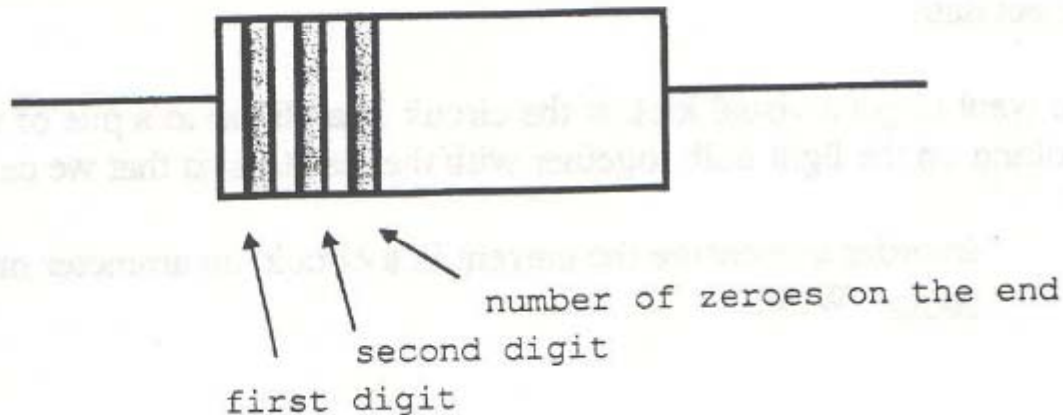


Reading a resistor code

Finding how many ohms a resistor is

- 10 ohms, 100 ohms, 1000 ohms
- 730 ohms, 73 ohms
- Orange, black, black
- Violet, yellow, yellow
- Brown, black, black
- Brown, brown, black
- More practice available in packet!

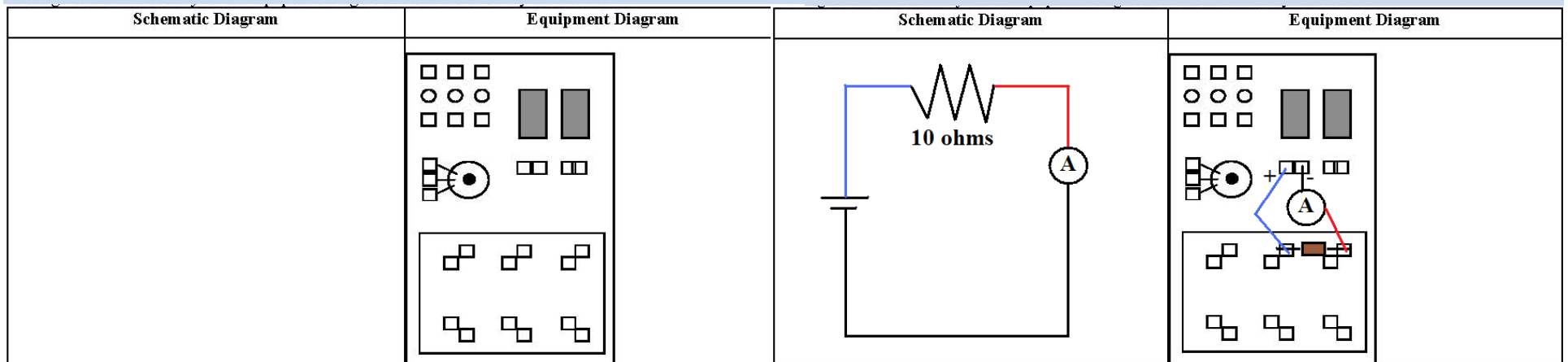
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Equipment/Schematic diagrams

Color coding helps, ask for colored pencils!

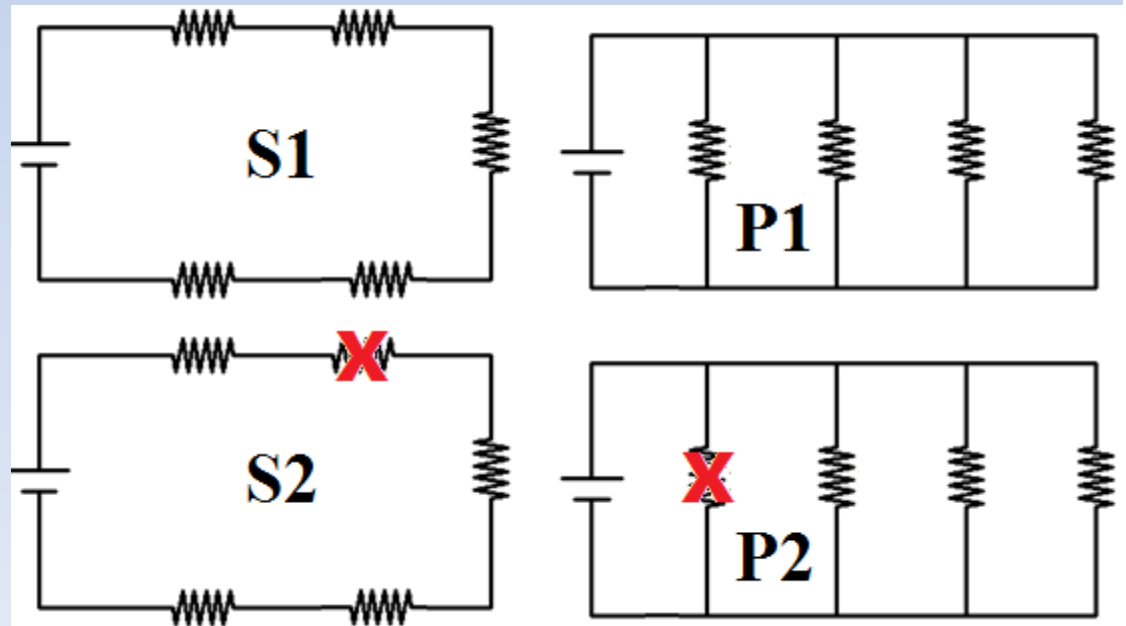
- Schematic uses symbols (sawtooth for resistor, etc.)
- Equipment diagrams: practical translation of schematic onto real circuit board model
- Example: Ammeter measuring current through circuit with 1.5V and single 10 ohm resistor
- Can you follow color-coding of like-parts in schematic and equipment? See how red lead is in more positive place?
- Try it and see if current is like theory predicts! ($i = V/R$)
- Work on packets according to calendar



Light bulbs in series/parallel

Example, consequences of some bulb changes

- Series circuit: Bulb out = circuit open, no light!
- Parallel circuit: Bulb out = remaining bulbs still get same voltage, burn just as bright!
- Added bulbs: Series, less voltage per bulb – dimmer!
- Added bulbs: Parallel, same volts per bulb, same brightness



Light bulbs in series/parallel

More consequences of some bulb changes

- Power: more parallel resistors = less overall resistance = more current = more power
- Power: more series resistors = more overall resistance = less current = less power

