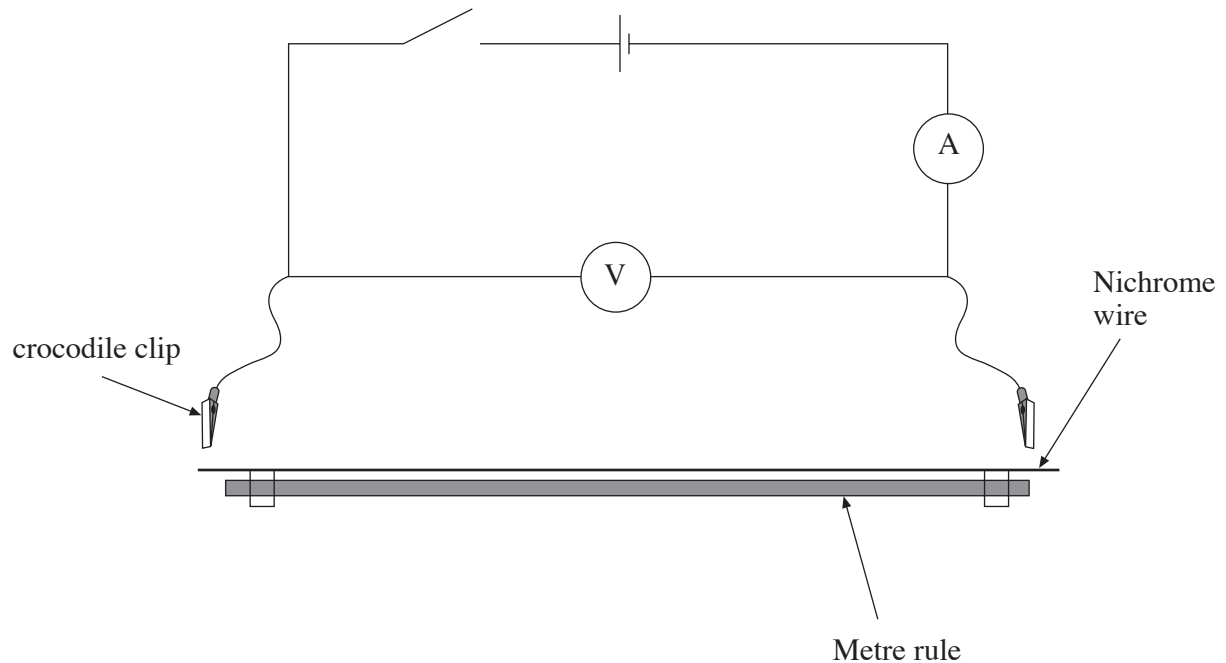


TASK A3 (15 minutes)

You are going to carry out an investigation to determine the resistivity, ρ of nichrome wire. The following circuit has been set up for you.



- (a) (i) Attach the crocodile clips, one to each end and determine a value for the resistance of the nichrome wire. [2]

$$R = \frac{V}{I}$$

Voltage and current given to 2 d.p. (1)

Resistance calculated correctly with units (1)

- (ii) Your value for the resistance of the wire is slightly greater than the actual value. Explain why. [1]

Less

Because of lead resistance

[or contact resistance] - answer and explanation required. (1)

- (b) Determine the diameter of the wire and use this value to calculate the cross sectional area of the wire in **metres²**. [3]

Thickness given to the resolution of the instrument (1)

Radius calculated / πr^2 / $\frac{\pi d^2}{4}$ used (1) [or by impl.]

Area given in metres² to no more than 3 significant figures (1)