



# education

Department of  
Education  
FREE STATE PROVINCE

## **PROVINCIAL FORMAL EXPERIMENT *PROVINSIALE FORMELE EKSPERIMENT***

### **GRADE/GRAAD 10**

### **TECHNICAL SCIENCES *TEGNIJSE WETENSKAPPE***

### **MEMORANDUM**

### **MARCH/MAART 2017**

### **TIME/TYD: 30 MINUTES/30 MINUTE**

### **MARKS/PUNTE: 15**

This memorandum consists of TWO pages.  
*Hierdie memorandum bestaan uit TWEE bladsye.*

**QUESTION 1/VRAAG 1**

- 1.1 A: Cells/Battery ✓ A: Selle/Battery ✓ (1)  
B: Switch ✓ B: Skakelaar ✓ (1)  
C: Ammeter ✓ C: Ammeter ✓ (1)
- 1.2 Measures the current ✓ Meet die stroom. ✓ (1)
- 1.3 The material that needs to be tested is connected between X and Y ✓ in series. ✓  
Die materiaal wat getoets moet word, word tussen punte X en Y geskakel ✓; in serie. ✓ (2)
- 1.4.1 Copper / *Koper* ✓ (1)
- 1.4.2 Lead / *Lood* ✓ (1)
- 1.4.3 Plastic / *Plastiek* ✓  
Rubber ✓ (2)
- 1.5.1 Type of material / *Tipe materiaal* ✓ (1)
- 1.5.2 Current (Conductivity) / *Stroom (Geleiding)* ✓ (1)
- 1.5.3 Any one of: / *Enig een van:* ✓  
Number of cells (voltage) / *Aantal selle (spanning)* (1)  
Connecting wires / *Verbindingsdrade*  
Bulb or ammeter / *Gloeilamp of ammeter*
- 1.6 Iron, copper and lead are conductors ✓ and plastic and rubber are non-conductors. ✓  
*Yster, koper en lood is geleiers en plastiek en rubber is nie-geleiers.* (2)

**[15]**

**GRAND TOTAL/GROOTTOTAAL: 15**