

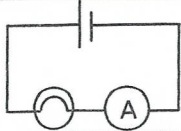
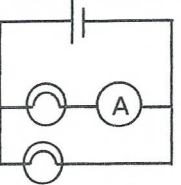
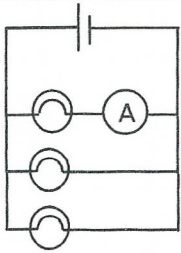
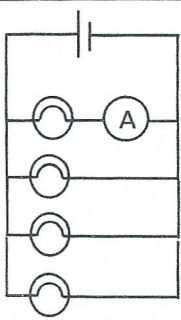
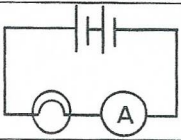
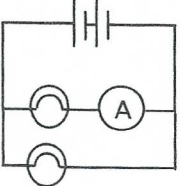
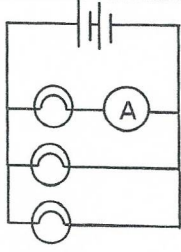
KS2 Science: Data Interpretation

How bright is it?

NC: Sc4 1ab

QCA: 6G

Dipali and Kome are investigating electrical circuits. For each circuit, they noted down how bright the bulb was (using ticks - the more ticks, the brighter the bulb) and the reading on the ammeter, which measures how much electric current is passing through the circuit. Here are their results.

Circuit Number	Circuit Diagram	Ammeter reading	Brightness of bulb
1		0.1	✓
2		0.2	✓✓
3		0.3	✓✓✓
4		0.4	✓✓✓✓
5		0.2	✓✓
6		0.4	✓✓✓✓
7		0.6	✓✓✓✓✓

B: How bright is it?

1. Which circuits had an ammeter reading of 0.4?

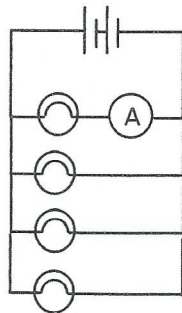
2. Which circuit gave the highest ammeter reading?

3. Which circuit had the brightest bulb?

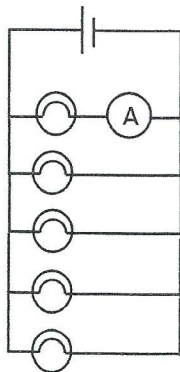
4. (a) Describe the relationship between the size of the ammeter reading and the brightness of the bulb.

(b) Try to explain why there is a link between the ammeter reading and the brightness of the bulb.

5. Predict the ammeter reading for this circuit, and explain how you worked it out.

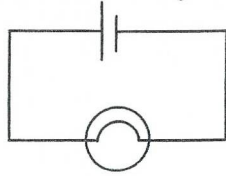


6. Predict the ammeter reading for this circuit, and explain how you worked it out.



B: Thick and thin wires

Mary and Gemma are investigating what affects the brightness of bulbs. They used 6 different types of wire. They score how bright the bulb using ticks – the more ticks, the brighter the bulb.



Wire Type	Description of wire	Results
1	Thin, 8cm long	✓✓
2	Thin, 12 cm long	✓
3	Thick, 8cm long	✓✓✓✓✓
4	Medium, 12 cm long	✓✓✓
5	Thin, 6cm long	✓✓✓
6	Thick, 12cm long	✓✓✓✓✓

- Which wire made the bulb the brightest?

- Which wire made the bulb the least bright?

- Which two wires scored 3?

- If you had a medium piece of wire 8cm long, how bright do you think the bulb would be?

- Explain how length of wire affects the brightness of the bulb.

- Explain how the thickness of the wire affects the brightness of the bulb.

- If you wanted to make the bulb brighter than in any of Mary and Gemma's experiments, describe a wire you could use.

- Why are wires normally covered in plastic?



Stopping distance

B

1. 60 miles per hour
2. 1200 feet
3. 40 miles per hour
4. Wet weather makes it smaller, and icy weather smaller still. The smaller the friction, the longer distance it will take to stop.
5. y-axis: stopping distance (feet)
x-axis: speed (mph)
Key: black: dry weather, grey: wet weather, white: icy weather

Testing springs

A

1. 38 cm
2. 75g
3. blue and purple
4. 13cm
5. the 50g result
6. Their springs were different/ different people doing measurements

B

1. 75g
2. blue and purple
3. 13cm
4. (a) the 50g result
(b) should be 26cm
5. Their springs were different/ different people doing measurements
6. Between 64 and 66cm.

QCA: 6F

Light, shadows and reflections

A

1. 12
2. 7
3. 1 and 4
4. 5
5. 28
6. false

B

1. 12
2. 3
3. 1 and 4
4. 5
5. false
6. None

Mirrors

A

1. on Sean's bedroom wall
2. Mirror 4
3. In the bathroom
4. 2 and 3
5. make the reflection smaller
6. turns the reflection upside down
7. So they can see their back.

Mirrors

B

1. Mirror 4
2. In the bathroom
3. So they can see their back.
4. make the reflection smaller
5. Is it the same size as normal?
6. So driver sees more of the road.

Reflections

A

1. No
2. Pritpal's coat and the slate
3. biscuit tin lid
4. ✓✓✓ and ✓✓✓
5. the more shiny it is, the better a reflector it is
7. to check answers were right

B

1. Pritpal's coat and the slate
2. biscuit tin lid
3. ✓✓✓ and ✓✓✓
4. the more shiny it is, the better a reflector it is
7. Did experiment again. Used same torch each time.

Shrinking shadows

A

1. 26cm
2. 160cm
3. 40cm
4. 18cm
5. the point for 60cm from the bulb (fourth from the left)

B

1. 26cm
2. 160cm
3. The further from the bulb, the smaller the shadow
4. 180cm
5. the point for 60cm from the bulb (fourth from the left)

QCA: 6G

Conductors and insulators

A

1. Yes
2. No
3. 2 of: wood, leather, paper, glass, plastic, chalk, water
4. Dissolve salt in it
5. Yes. All the other metals do.

B

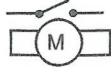


1. Yes
2. 2 of: wood, leather, paper, glass, plastic, chalk, water
3. Dissolve salt in it
4. Yes. All the other metals do
5. No. It is quite like paper, and paper doesn't
6. Because plastic doesn't conduct electricity.

Electrical symbols

A

1. 
2. 
3. bell
4. 1.5 volt battery
5. bulb connected to a 1.5 volt battery

B

1. 
2. 
3. bell
4. 3 volt battery
5. 4,5 volt battery connected to a buzzer and a switch
6. 

How bright is it?

A

1. 0.3A
2. 4 and 6
3. 7
4. 7
5. The higher the ammeter reading, the brighter the bulb
6. There are two batteries.

B

1. 4 and 6
2. 7
3. 7
4. (a) the higher the ammeter reading, the brighter the bulb
(b) the ammeter measures the amount of current. The more current, the brighter the bulb
5. 0.8A. Double circuit 4 / keep adding 0.2
6. 0.5A. You add 0.1 each time.

Thick and thin wires

A

1. ✓✓✓✓ (or 4)
2. wire 3
3. wire 2
4. 4 and 5
5. short
6. ✓✓✓✓ (or 4)
7. Because plastic does not conduct electricity.

B

1. wire 3
2. wire 2
3. 4 and 5
4. ✓✓✓✓ (or 4)
5. The longer the wire, the less bright the bulb
6. The thicker the wire, the brighter the bulb
7. Thick, 6cm long
8. Because plastic does not conduct electricity.