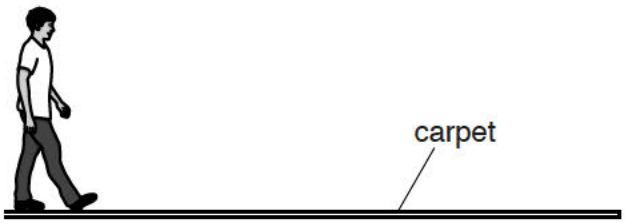
1 Patrick walks on a nylon carpet.



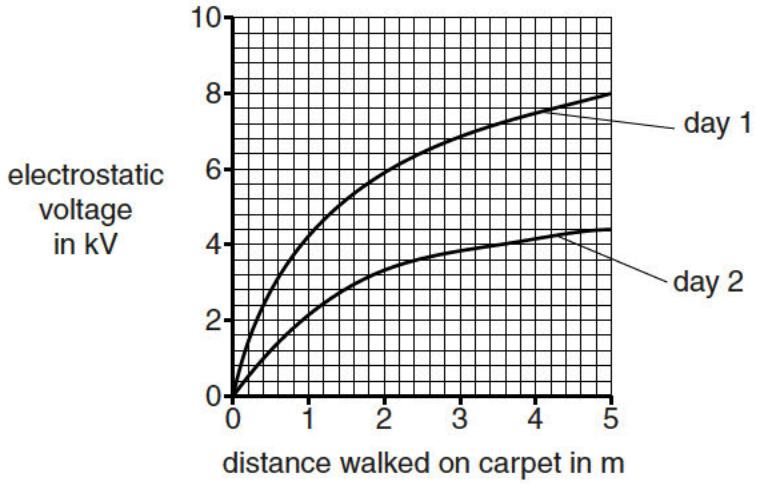
He becomes negatively charged.

(a) Describe how Patrick has become **negatively** charged.

.....

..... **[2]**

(b) His electrostatic voltage is measured when he walks on the carpet on different days.



(i) Use the graph to explain what happens on day **1**.

.....

.....

.....

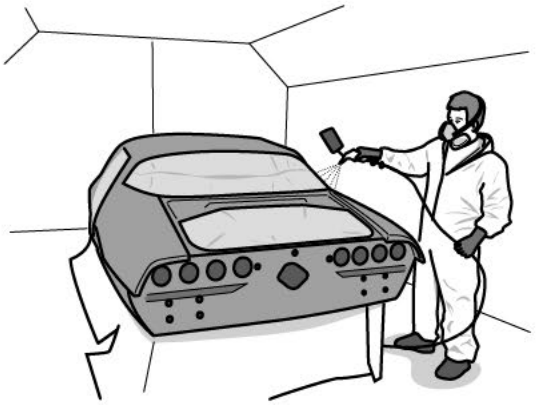
..... **[2]**

(ii) Suggest what is different on day **2**.

.....

..... **[1]**

2 Electrostatics can be useful for paint spraying.



(a) Complete the sentences to describe electrostatic paint spraying.

The paint gun is charged.

The paint particles are all given the same ..... .

This makes the paint particles in the spray ..... .

The car is charged oppositely to the paint particles.

This causes the paint particles to be ..... .

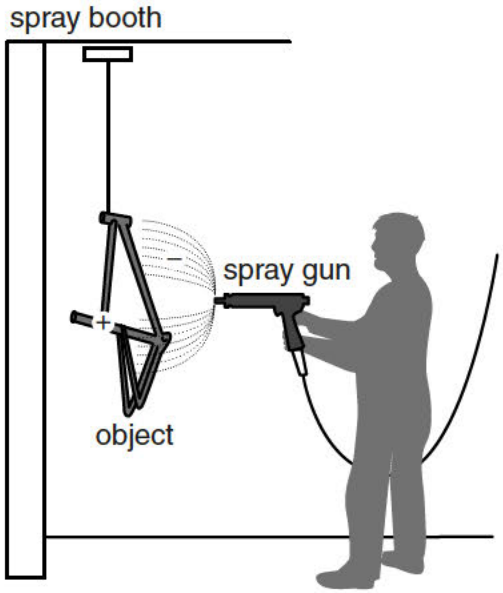
Two advantages of using electrostatics for paint spraying are .....

..... and ..... .

[3]

(b) During electrostatic paint spraying electrons are transferred.

Look at the diagram of an object being paint sprayed.



Describe where electrons are gained and lost in this process.

In your answer, write about the direction of electron transfer.

.....

..... **[1]**

[Total: 4]

3 Tanida jumps up and down on a trampoline.

The jumping surface of the trampoline is an insulating material.
Tanida is wearing synthetic socks.



(a) When Tanida gets off the trampoline she gets an electrostatic shock as she touches the ground.

Use ideas about electron transfer to explain why this happens.

.....

.....

.....

.....

..... **[2]**

(b) Anti-static sprays reduce the problem of static electricity on the trampoline.

Explain how.

.....

.....

..... **[2]**

[Total: 4]

4 Ricky is interested in radio and TV.

(a) Ricky has a portable analogue radio that he listens to at different places in his house and out in the garden.

His favourite stations are shown in the table.

station	MHz
BBC 2	88.1
Galaxy	
Real Radio	101.8
TFM	96.6
Smooth FM	101.2
Spice FM	98.8

While listening to one of these stations, he often hears another station on his radio.

Which two radio stations can Ricky hear at the same time?

Station ..... and station ..... .

Explain your answer.

.....

..... [2]

(b) Many radio stations have switched to DAB broadcasting.

If Ricky switches to a radio using a DAB signal he would not hear two stations at once.

Write down one other advantage of using a DAB signal.

.....

..... [1]

[Total: 3]