

09/12

## Paperclip Investigation

#4

### Agenda

- plan an investigation  
-Running the trials

### **Exit Task**

Be sure you have run the trials.

Check your diagram for ABCD

Make sure your diagram is at least a half page.

you need to have your diagram checked and stamped by me.

You need a stamp on your diagram at some point today.

### **Learning target:**

I can write a procedure that can be copied by another person.

-  Sit up
-  Track the speed
-  Ask questions
-  Respect your
-  Stay focused

Professional (A): Follows the ABCD of scientific drawing without any mistakes.

Expert (B) Follows the ABCD but with 1-2 small errors, for example; writes a word on an angle, misses one label, or the drawing is a little messy but sticks to the rules.

Practitioner (C) Meets the standard showing they can follow the ABCD s but has either a messy drawing or makes a major error in their drawing such as forgetting more than one label, or missing an item from the set up.

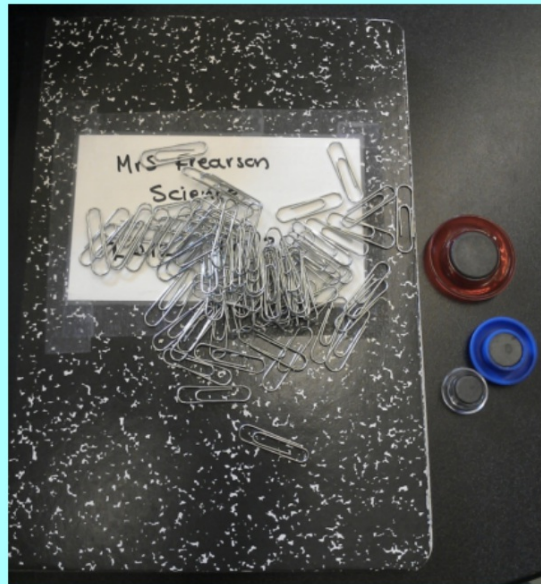
Novice (D) Does not follow all of the ABCD s for example the drawing is small, the drawing has no labels the drawing is not easy to read due to messy drawing, major details are left out the drawing.

-  Sit up
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**Learning target:**

I can write a procedure that can be copied by another person.

Mrs Frearson made a mess by spilling paper clips on her journal. She is a very busy person and needs to pick up the paperclips in the most efficient way.



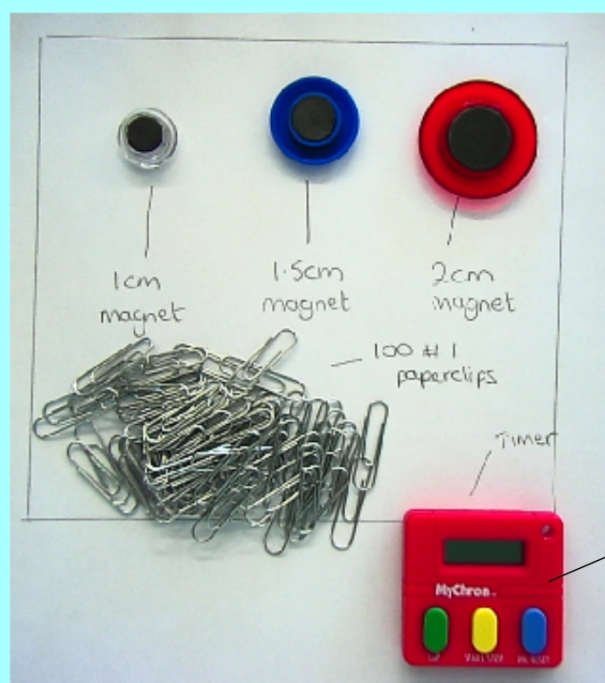
**Write the question for the investigation that would help her to make the best decision.**

**Learning target:**

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## Investigation set-up



Only if you are timing!

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- ★ Ask questions
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- ★ Stay focused

## Period 3 (responding variable is time to pick up the paperclips)

### Procedures

1. Gather materials
2. Set up materials as shown in the diagram.
3. Start the timer.
4. Begin with the 2cm magnet.
5. Pick up the paperclips with the magnet.
6. take the paperclips off the magnet and set aside.
7. Continue until the 100 paperclips are picked up.
8. Stop the timer.
9. Record the time (seconds) in the data table.
10. Repeat steps 3-9 two more times.
11. Repeat steps 3-10 using the 1.5cm magnet and again with the 1cm magnet.

-  Sit up
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### **Learning target:**

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## Period 4 procedure    RV    number of paperclips picked up)

1. Collect the materials.
2. Set up the materials as shown in the diagram.
3. Drop the paperclips from a height of 10cm.
4. Start by using the 2cm magnet and hold it 0.5cm over the paperclips.
5. Move the magnet over the paperclips until the magnet can't hold any more. Maintain the height of the magnet.
6. Remove the magnet from the paperclips.
7. Count the number of paperclips and record in the data table.
8. Repeat steps 2- 7 for two more trials.
9. Repeat steps 2-8 using the 1.5cm magnet.
10. repeat steps 2-8 using the 1cm magnet.

### Learning target:

I can write a procedure that can be copied by another person.



## Period 1 procedure (RV Time to pick up the paperclips.)

1. Gather materials
2. Set up the materials as shown in the diagram.
3. Start by dropping the paperclips from 10cm
4. Start by testing the smallest magnet
5. Start the timer, and start picking up the paperclips with the magnet.
6. Stop the timer as soon as you have picked up all the paperclips.
7. Record the time it took in seconds.
8. Repeat steps 2-7 two more times for 3 trials.
9. Repeat steps 2-8 for the 1.5cm magnet.
10. Repeat steps 2-8 for the 2cm magnet.

### Learning target:

I can write a procedure that can be copied by another person.



## Period 2 procedure (RV Time to pick up the paperclips.)

1. Gather all the materials.
2. Set up the experiment as shown in the diagram
3. Drop the paperclips from 15cm height.
4. Start with the large magnet in one hand someone with the timer.
5. Start the timer and at the same time start picking up the paperclips.
6. Stop the timer when we are finished picking up all the paperclips.
7. Record the amount of time it took in seconds.
8. Repeat steps 2-7 for trials 2 and 3
9. Repeat steps 2-8 for the medium sized magnet.
10. Repeat steps 2-8 using the small magnet.

### Learning target:

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## Data Table

See the yellow sheet for the formatting.

## Graph

This must be completed on graph paper.

### **Learning target:**

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## Conclusion

### **Learning target:**

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## Discussion

### **Learning target:**

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