



Vacuum Cleaner Product Analysis Project

Using your Vacuum cleaner at home analyse and evaluate its use and effectiveness.



Working through the project – I expect this project to take you no more than 3 lessons.

- In this project I want you to find out as much as you can about the vacuum cleaner in your home.
- You will have to do some internet research to find out more about what it is designed to do, what it is made from, what different parts make up a vacuum cleaner, etc.
- I will also want you to conduct some tests with the vacuum cleaner and record the results to make conclusions about how well it works. I want you to record these results formally (I will give you specific tasks to do and guidance as to how to do them as well as how to record the data you gather).
- I also want you to suggest improvements to the design from what you have found out.
- When you have finished the tests and typed up your conclusions email me the PowerPoint back so that I can see your results and give you feedback on your suggested improvements to the design of your vacuum cleaner.

Identify your vacuum cleaner

- What is the make of your vacuum cleaner?

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- Is it upright, pull along or hand held?

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- Is it a corded model or a rechargeable vacuum?

.....

- What attachments/accessories does it have?

.....

.....

What is the design of your vacuum like?

Does it look interesting?

Y / N

Is it an interesting colour?

Y / N

Is it an attractive shape?

Y / N

Find out more about your vacuum cleaner

Use the internet to find out the following information

- How much does it cost?
- How powerful is it in Watts or Volts?
- How heavy is it?
- If it is rechargeable how long should a single charge last?
- What is the capacity of the bag or dust collector?
- Are any accessories included when you buy it?

Test #1

- This first test is to gauge how easy it is to move around the room as you use it.
- Start by marking out a 2 metre straight area of floor using tape or string.
- Time yourself whilst running the vacuum backwards and forwards 10 times. Make a note of the time on the recording sheet on Slide 11
- Also make a note of how easy you found it to complete this test on the recording sheet.

Test #2

- Put a legged chair in the middle of the room
- Time how long it takes you to vacuum under the chair moving the vacuum around and under all parts of the chair
- Make a note of how long it takes on the recording sheet on slide 11
- Also make a note of how easy it was to turn the vacuum around so that you could reach under all parts of the chair.

Test #3

- Cut up a piece of paper into small pieces
- They should be no larger than 1 cm square
- Spread them out on the floor in a space 1 metre by 1 metre
- Time how long it takes for the vacuum to pick up all of the pieces of paper without the rotating brushes switched on
- Repeat the test with the rotating brushes switched on if the vacuum has them
- Repeat the test using the hose and nozzle attachment
- Record the times on the recording sheet on Slide 11

Test #4

- Spread some dust evenly out on the floor in a space 1 metre by 1 metre
- Time how long it takes for the vacuum to pick up all of the dust without the rotating brushes switched on
- Repeat the test with the rotating brushes switched on if the vacuum has them
- Repeat the test using the hose and nozzle attachment
- Record both of the times on the recording sheet on Slide 11

Test #5

- Spread some pencil shavings evenly out on the floor in a space 1 metre by 1 metre
- Time how long it takes for the vacuum to pick up all of the pencil shavings without the rotating brushes switched on
- Repeat the test with the rotating brushes switched on if the vacuum has them
- Repeat the test using the hose and nozzle attachment
- Record both of the times on the recording sheet on Slide 11

Test #6

- Empty out the vacuum cleaner
- How easy is the process of removing the bag/ dust collector?
- How easy is it to transfer the waste collected into the bin?
- Does it make a mess when you empty out the container?
- Did you get covered in dust/waste?

Recording Sheet

Test Number	Time with brushes off	Time with brushes on	Time with hose & nozzle	2m straight test time	Vacuumping under chair time
1					
2					
3					
4					
5					

Conclusions from your testing

- How easy did you find the vacuum cleaner to use?

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- Did it run easily over the flooring or was it hard to push?

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- How easy did you find it to go around corners or move it around other than in a straight line?

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How well did it pick up the various types of waste that you vacuumed?

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How easy was the vacuum cleaner to empty?

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What improvements would you make to the design of the vacuum cleaner?

	Improvement	Reason
1		
2		
3		
4		

Final Test

- Vacuum your home once a week
- Record how happy it makes your parents/guardians that you are helping out in these challenging times.
- Record their comments below:-

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