ROOKS HEATH SCHOOL
Strive to be your best

AAQ Medical Science Bridging Work

Welcome to AAQ Medical Science

The AAQ Medical Science course explores how the human body functions, how disease affects health, and how medical scientists investigate and improve treatments.

This bridging work is designed to help you transition from GCSE Science to Post 16 study. It should take approximately **2-3 hours** to complete.

You can either hand write your answers or type them up and produce it as a Word or PowerPoint document. Either way you must be ready to bring the work into school when your course starts.

Total Marks: 40

Task 1: Human Body Systems Review (10 marks)

Instructions

Choose **two** of the following body systems:

- Circulatory system
- Respiratory system
- Digestive system
- Nervous system

For each system:

1. State its main function.
2. Identify two key organs.
3. Explain how the organs work together.
4. Describe one disease or disorder that affects the system.

Write approximately **150 words per system**.

Example

For the circulatory system you may discuss:

- Heart
- Blood vessels
- Coronary heart disease

Task 2: Interpreting Medical Data (10 marks)

Instructions

Study the table below.

Age Group	Resting Heart Rate (beats per minute)
10-19	75
20-29	72
30-39	71
40-49	73
50-59	75
60-69	78

Answer the following questions:

Questions

1. Which age group has the lowest resting heart rate? (1 mark)
2. Which age group has the highest resting heart rate? (1 mark)
3. What overall trend can you observe? (2 marks)
4. Suggest two reasons why resting heart rate may vary between age groups. (4 marks)
5. Explain why scientists collect and analyse data such as this. (2 marks)

Task 3: Investigating Risk Factors for Disease (10 marks)

Medical Scientists Use Data Every Day

The graph below shows the relationship between smoking and the risk of developing lung cancer.

Cigarettes Smoked Per Day	% Developing Lung Cancer
0	1
5	3
10	7
15	12
20	18
25	25

Questions

Describe the trend shown in the data. (2 marks)

Calculate the increase in risk between:

a) 0 and 10 cigarettes per day (1 mark)

b) 10 and 20 cigarettes per day (1 mark)

What conclusion can be drawn from the data? (2 marks)

Why does this data show correlation rather than proof of causation? (2 marks)

Suggest one other factor that could affect lung cancer risk. (2 marks)

Task 4: Designing a Medical Investigation (10 marks)

Scenario

A medical scientist wants to investigate whether caffeine affects reaction time.

A group of volunteers complete a reaction time test before and after drinking a caffeinated drink.

Complete the Planning Table

Question	Your Answer
What is the independent variable?	
What is the dependent variable?	
Name one control variable.	
Why is it important to repeat measurements?	

Why should scientists test several volunteers?	

(1 mark each = 5 marks)

Evaluating the Investigation

Scientists tested 40 volunteers.

Results:

Group	Average Reaction Time (seconds)
Before caffeine	0.32
After caffeine	0.27

Answer the following:

What happened to reaction time? (1 mark)

Did caffeine appear to improve performance? Explain your answer. (2 marks)

Suggest one limitation of this investigation. (1 mark)

Suggest one improvement. (1 mark)

Extension Task (optional)

Task 5: The Future of Medicine (10 marks)

Instructions

Choose ONE topic:

- Gene therapy
- Artificial intelligence in healthcare
- Organ transplantation
- Regenerative medicine
- Medical imaging

Create either:

- A one-page infographic, or
- A one-page report (approximately 300 words)

Include:

1. What the technology is.
2. How it works.
3. One benefit.
4. One limitation or ethical issue.
5. Why you think it may be important in the future.

You may include diagrams or images.

Presentation Expectations

Your work should demonstrate:

- Accurate scientific language
- Complete sentences
- Good spelling, punctuation and grammar
- Clear organisation and presentation
- Evidence of independent research where required