

BioMedical Admissions Test (BMAT)

Section 1 Problem Solving Guide

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BMAT Section 1 - Problem Solving

Overview

In one BMAT exam, there will be approximately **16** questions that will test your ability to solve problems.

These questions may test your ability to:

- **Understand and process numerical information.**
- Encode information
- Use simple **numerical** and **algebraic equations** to solve problems.

In these questions numerical information or spatial information will be given to you and you will be required to:

- Select relevant information
- Recognise similar cases
- Determine and apply appropriate procedures

Common Questions

- **Comparison:**
 - **Time** - clocks, who reaches somewhere first/the fastest
 - **Money** - who makes the most/least, how much he/she should sell an item for, how much more expensive/cheap is it, profit, cheapest/most expensive
 - How much **more/less** money/time someone takes/makes
 - **Recipe** questions
 - **Journeys**
 - Percentages
 - Quantities - ratios/percentages
- **Spatial:**
 - **Seating** arrangements
 - **Measurements** - gardens, boxes, shapes, materials
 - Shapes - which shape will fit/
- **Speed, Distance, Time:**
 - Time **difference** - clocks, countries
 - Time someone should **leave/arrive**
 - **How long** it takes to get to a certain place, make a certain amount of money



- **Logic**
 - Pins
 - Voting
 - Safe combinations
 - Passwords
 - Pie charts
 - Data/information in a table

- **Shape/abstract reasoning**
 - Dice
 - Nets
 - Puzzle pieces
 - 3d shapes
 - Tiles
 - Visual problems

- **Ratios and percentages**
 - Recipes
 - Mixtures of paint

- **Shapes/3d shapes**
 - Visual problems
 - Nets - identifying 3d sides
 - Shapes - identifying 3d sides

Some questions may involve a **combination** of the things listed above. For example, you may need to work out the area of a shape, and then calculate how much materials would cost for that area.

Problem solving questions can also be presented in 'sets' where you are given **lots of information**, and then asked **multiple questions** relating to that information. You need to be able to understand which information you need to use when in your workings, to get to the end answer.

Due to the **variety** of problem solving questions and the amount of working you have, it is important to understand exactly what each question is asking you. As with all questions in the BMAT exam, taking some time to read the question **carefully** and **understand it**, can **save you time** and **prevent unnecessary calculations**.



How to approach questions

General Approach

1. Read the question:

- a. Read the question **carefully**.
- b. **Highlight** key information such as keywords, statistics and rules.
- c. If there is a diagram, pay attention to the **headings, units** and **numbers**.

2. Think about the question:

- a. Try to **identify the question type** from the types of common questions outlined above. You need to work out which main block of questions from above the question you are answering is about. Then identify a subtype, for example if it is a comparison question, is it about money or time?
- b. If you feel like the question **doesn't fit** into any of the common topics mentioned above pick out **certain themes or pieces of information** in the question to logically approach your workings.
- c. **Pay attention** to the **key details** of a question. For example, in a question about money, you should pay attention to **what you need to calculate**; it could be the total cost, the profit made, the loss made or how much more/less is costs..
- d. Using the information that you have highlighted, try to **understand** what the question is **telling you**, and what it is **asking you to work out**.
- e. If the question involves a set of rules, make sure that you **keep all the rules in mind**. A good way to do this is to **underline/highlight** the rules and make sure you **test each rule** until you get to one that doesn't fit.

3. Work out the answer:

- a. After reading the question, you may find that you immediately see a **method** you can use to work out the answer.
- b. If this is not the case, you can **eliminate incorrect answer options** when you cannot think of a better approach to a question, this will enable you to **narrow down** the options you have to choose from. Elimination is actually the best approach for certain questions, as is discussed below.
- c. Although it is essential to work quickly in the BMAT exam, it is important to **keep your workings clear**. This will help you to **avoid confusion**.
- d. Since you can **not** use a calculator in the exam, you will often need to perform long multiplication/division. Make sure you practice this so that you are comfortable with it. In your calculations, ensure that you pay attention to where to put the **decimal point**.



- e. If you can see that the **answer options are very different** to each other, then you can **round the numbers** you are using in long multiplication/division. This will make calculations slightly easier and save you some time.

4. Picking the right answer:

- a. After calculating the right answer, or eliminating incorrect answers, select an answer option.
- b. Be careful of **trap answer options** which may seem like the right answer. Trap answer options include any options that may be thought to be correct if the question or answer options are misread. For example, you may find out the total cost of something, but the question actually asks you how much **more** it costs than something else. An answer option may be the total cost of the item; it is there to catch students out.
- c. **Read the question again** to make sure you have worked out what the question is asking you and to **avoid** trap answer options



Approach for 'comparison' questions

Comparison questions can require a **lot of thought and many calculations**, and some may have answer options that are **very similar**. Therefore, it is particularly important to **highlight** exactly what you need to work out, and then use a **clear, systematic and logical approach** in your workings.

Often, you are required to work out **two things** in order to **compare them**.

- To avoid confusion, if it is possible to do so, it is best to **completely separate** the two calculations.
- You can write down all of the information required for one calculation, perform that calculation and then repeat this with the second calculation.
- Then, you can simply compare the final results.

We will demonstrate this in the example on the next page.

Worked example - Time

- 1 Bob and Jill need to go to the same meeting in Ireland. They live in different places and are travelling to the meeting separately. Bob needs to drive to the airport which is 220 miles from his house and Bob drives at an average speed of 40 mph. Bob then gets a plane which travels at 480 mph and the plane needs to travel for 552 miles to get to the airport in Ireland. The meeting is 51 minutes from the airport. Jill is going to drive for 390 miles at an average speed of 60 mph and then take a ferry that will travel at 30 mph for 45 miles. The meeting is only 5 minutes away from where the ferry stops.

Assuming Bob spent 50 minutes in total entering and leaving the airports, who reaches the meeting first and how much earlier than the other person?

- A Bob, 15 minutes earlier
- B Jill, 15 minutes earlier
- C Bob, 31 minutes earlier
- D Bob, 35 minutes earlier
- E Jill, 1 hour 25 minutes earlier

As explained above, a good approach to this question is working out **Bob's journey time first**, and **then Jill's**. Make sure you clearly mark which is which in your calculations, even if only by writing 'J' or 'B'.

For any questions involving time, speed or distance, you should recall the following equation:



$$\text{speed} = \text{distance} \div \text{time}$$

Bob's journey:

Firstly, identify all the information related to Bob's journey:

- Drives to the airport at an average speed of **40 mph** for **220 miles**.
- Boards a plane that travels at an average speed of **480 mph** for **552 miles**.
- Bob spent 50 minutes entering and leaving the airport.
- The meeting is **51 minutes** away from the airport.

Now, we can start calculating Bob's journey time. It is useful to **write down** which part of the journey you are calculating as you go along.

Time to **airport**:

$$S = 40 \text{ mph}$$

$$D = 220 \text{ miles}$$

$$40 = 220 \div T$$

$$40T = 220$$

$$T = 220 \div 40$$

$$T = 5.5$$

$$T = 5 \text{ hours and } 30 \text{ minutes}$$

Therefore it takes Bob **5 hours and 30 minutes** to drive to the airport.

Plane journey:

$$S = 480 \text{ mph}$$

$$D = 552 \text{ miles}$$

$$480 = 552 \div T$$

$$480T = 552$$

$$T = 552 \div 480$$

$$T = 1.15$$

$$T = 1.15 \times 60$$

$$T = 69 \text{ minutes}$$

$$T = 1 \text{ hour and } 9 \text{ minutes}$$

Therefore Bob's plane journey is **1 hour and 9 minutes**.

Time spent entering and leaving the airport:

We need to remember that at the end of the question, we are told to assume that Bob spent **50 minutes** entering and leaving the airport. We need to take this time into account as it will increase the time it takes for him to get to the wedding.



Drive to venue:

We need to remember that the question mentions the meeting is **51 minutes** away from the airport.

You may find it useful to highlight all of the times in your workings, by circling or underlining them. This will make it easier to find them when you need to add them up.

Total journey time:

Time to airport + time spend at the airport + time of plane journey + time from airport to meeting = Total journey time

5 hours and 30 minutes + 50 minutes + 1 hour and 9 minutes + 51 minutes = 7 hours and 30 minutes

Therefore it takes Bob a total of **8 hours and 20 minutes** to get to the meeting.

Jill's journey:

First, identify all of information needed to calculate Jill's journey time:

- Jill drives for **390 miles** at **60 mph**.
- Ferry travels at **30 mph** for **45 miles**.
- The meeting is **5 minutes** away from where the ferry stops.

Driving time:

$$S = 60 \text{ mph}$$

$$D = 390 \text{ miles}$$

$$60 = 390 \div T$$

$$60T = 390$$

$$T = 390 \div 60$$

$$T = 6.5$$

$$T = 6 \text{ hours and } 30 \text{ minutes}$$

Therefore Jill drives for **6 hours and 30 minutes**.

Ferry journey time:

$$S = 30 \text{ mph}$$

$$D = 45 \text{ miles}$$

$$S = D \div T$$

$$30 = 45 \div T$$

$$30T = 45$$

$$T = 45 \div 30$$

$$T = 1.5$$

$$T = 1 \text{ hour and } 30 \text{ minutes}$$

Therefore Jill's journey on the Ferry will take **1 hour and 30 minutes**.



Time to venue:

Again, we need to remember that the question mentions the meeting is **5 minutes** away from where the ferry stops.

Total journey time:

$$\text{Time spent driving} + \text{time on ferry} + \text{time from where ferry stops to meeting} = \text{Total journey time}$$
$$6 \text{ hours and } 30 \text{ minutes} + 1 \text{ hour and } 30 \text{ minutes} + 5 \text{ minutes} = 8 \text{ hours and } 5 \text{ minutes}$$

Therefore, it takes Jill a total of **8 hours and 5 minutes** to get to the meeting.

After doing your calculations, it is good practice to check **exactly** what the question is asking you. This will help you identify the correct answer from the answer options. For example, the question may ask who reaches the meeting **first** and at **what time**, or it may ask who **reaches last** and **how much later**.

In this case, the question asks who reaches the meeting **first** and **how much earlier** than the other person:

It took **Bob 8 hours and 20 minutes** to get to the meeting and **Jill took 8 hours and 5 minutes** to get to the meeting. Therefore Bob arrives at the meeting first.

In order to answer the question completely you also need to find out **how much earlier** Bob reaches the meeting compared to Jill:

$$8 \text{ hours and } 5 \text{ minutes} - 8 \text{ hours and } 20 \text{ minutes} = 15 \text{ minutes}$$

Therefore the correct answer option is **A**, as **Bob reaches first and 15 minutes earlier than Jill**.

Be careful of **'trap answers'**: answers can often **seem correct** if you have **miscalculated** slightly, **rounded inappropriately** or **missed part of the information in the question**.

For example, **option C** says that Bob reaches the meeting first. Although this is correct, it says that he reaches 1 hour and 21 minutes earlier. This answer would be obtained if we had forgotten to include the times taken from the airport or ferry to the meeting:

Bob's journey time:

$$5 \text{ hours and } 30 \text{ minutes} + 50 \text{ minutes} + 1 \text{ hour and } 9 \text{ minutes} = 7 \text{ hours and } 29 \text{ minutes}$$

Jill's journey time:

$$6 \text{ hours and } 30 \text{ minutes} + 1 \text{ hour and } 30 \text{ minutes} = 8 \text{ hours}$$

How much earlier Bob arrives than Jill:

$$8 \text{ hours} - 7 \text{ hours and } 29 \text{ minutes} = 31 \text{ minutes}$$



Option D is another trap answer option. It says that Bob arrives earlier, and this is correct.

Exam Tip - Keeping your workings clear and organised will help you avoid making mistakes.

Worked example - Money

With questions about money, pay attention to the cost of each item. Usually, there are many different items mentioned in one question. You may find it useful to write a brief summary of the items and their costs as you read the question information.

- 2 Anjali wants to buy a particular skirt. She goes shopping and sees that the skirt is only available in two shops. Shop A and shop B both have a deal on the skirt that Anjali wants. Anjali only has £40 and wants to spend as little as she can. In shop A, if you buy the skirt with a top you get a 10% discount from the total price. The top costs £12 and the skirt costs £3 more than the top. In shop B, if you buy the skirt with a necklace you get 15% off the total price. The skirt costs the same price as in shop A, and the necklace is the same price as the skirt.

From which shop should Anjali buy the skirt if she wants to spend the least money and how much money would she save from her £40?

- A Shop B, saves £14.50
- B Shop B, saves £15.70
- C Shop A, saves £15.70
- D Shop B, Saves £19.60
- E Shop A, saves £24.30

Again, we will work out this question in two separate parts. First, we will work out the amount Anjali will spend in shop A and then in shop B.

Shop A

We are told that the top costs **£12** and the skirt costs **£3 more**:

$$12 + 3 = 15$$

Therefore the skirt costs **£15** in shop A.

We are told that if you buy a skirt and top you get **10% off the total price**. To calculate this, we first need to find out the total cost that Anjali will spend if she buys the deal in shop A.



Total cost in shop A:

$$12 + 15 = 27$$

$$27 \times \frac{10}{100} = 2.70$$

$$27 - 2.70 = 24.30$$

It will cost Anjali **£24.30** in shop A.

Shop B:

We are told that the skirt in shop B is the **same price as the skirt in shop A**. We worked this out to be **£15**. We are told that the **necklace also costs the same as the skirt**:

Cost of skirt in shop B: £15

Cost of necklace in shop B: £15

We are also told that buying a skirt and a necklace, gives you **15% off the total price**.

Total cost in shop B:

$$15 + 15 = 30$$

$$30 \times \frac{15}{100} = 4.50$$

$$30 - 4.50 = 25.50$$

Therefore it will cost Anjali **£25.50** in shop B.

From our workings we can see that **shop A is where Anjali will spend the least amount**, as she will only spend **£24.30** compared to £25.50 in shop B.

The question also asks us **how much she would save from her £40**:

$$40 - 24.30 = 15.70$$

Anjali will **save £15.70** from her £40.

This is option C; Anjali will spend the least at shop A and she will save £15.70 from her £40.

Exam Tip - You need to be careful with **trap answer options**. To avoid these, you should make sure you **know exactly what the question is asking, try to think through each question in steps** and **take care** when doing calculations.

In this question, answer **options B and E are trap answers**:

- B: It is possible to confuse shop A with shop B during calculations. Option B contains the correct amount of money saved from £40 (£15.70), but the wrong shop.
- E: The shop that is cheapest is correct (shop A), but the amount of money is wrong. £24.30 is the total amount that it will cost Anjali to buy the skirt and top in shop A, rather than the amount she will save from her £40.



Worked example - Difference

- 3 Beth and Rahul both make a lemonade stand. Beth buys 72 cups. Rahul buys 70 cups. Beth and Rahul sell lots of lemonade, both using approximately 90% of their own cups. Beth sells each cup for 40p and Rahul sells each cup for 41p.

Who made the most money and how much more?

- A Beth, £26 more
- B Rahul, £25.83 more
- C Rahul, £0.23 more
- D Beth, £0.17 more
- E Rahul, £0.17 more

Again, we will do our calculations in two **parts**. We will work out how much money Beth makes, then how much Rahul makes, and then we can work out the difference.

Beth:

We are told that Beth **sells 90%** of her cups (**72**) at **40p each**. We need to work out how many cups Beth sells and how much she makes from selling them.

Number of cups Beth sells:

$$72 \times \frac{90}{100} = 64.8$$

Therefore Beth sells **65 cups**. The answer is rounded to 65 since you cannot sell 0.8 of a cup.

Amount of money Beth makes:

$$65 \times 0.40 = \text{£}26$$

Rahul:

We are told that Rahul **sells 90%** of his cups (**70**) at **41p each**.

Number of cups Rahul sells:

$$70 \times \frac{90}{100} = 63$$

Therefore Rahul sells **63 cups** at **41p each**.

Amount of money Rahul makes:

$$63 \times 0.41 = \text{£}25.83$$



The question asks us to work out who makes the **most money and how much more**. From our workings we can tell that Beth makes more money than Rahul:

$$£26 - £25.83 = £0.17$$

Beth makes **17p more** than Rahul. Therefore the correct answer option is **D**.

Exam Tip - This question also has **trap answer options**.

A: This says that Beth makes £26 more. From our workings we can see that Beth makes £26 in total, not £26 more.

C: This says that Rahul makes the most and by £0.23. You would obtain this answer by rounding the cups of lemonade Beth sells down to 64. However, 64.8 should be rounded up to 65.

E: Many questions will have an answer option with the right numerical answer but the name of the wrong person. So that you do not confuse names like this, it is good to keep clear workings with labels indicating what they calculate.



'Speed, Distance, Time' questions

For these questions, you must be able to recall and use the equation:

$$\text{speed} = \text{distance} \div \text{time}$$

These questions often involve many different distances, times and speeds, and can be presented in a large variety of ways. As always, it is important to clearly read the question and understand exactly what it is asking you to do. Then, think through each step of any calculations carefully, and check the question again before you choose an answer.

Worked example - Time difference, clocks and countries

- 4 Paris is one hour ahead of London. When the time in London is 4:18pm, a clock in Paris stopped working. It stopped for 19 minutes and when it was restarted, the time was reset to the correct time in Paris. 786 minutes after the clock in Paris broke down, it was checked again.

What time does the clock in Paris now show?

- A 6:24 am
- B 6:24 pm
- C 6:37 am
- D 6:43 pm
- E 6:43 am

There are often a lot of details in questions relating to time. You may find it beneficial to **rewrite** or **highlight** the **important information** so that you can see it more clearly.

In this question the key pieces of information are:

- London clock shows **4:18pm**.
- **Paris'** clock broke down for **19 minutes** and was then **reset** to the correct time.
- **786 minutes** passed until the clocks were checked again.

The question asks us to find out what time the **Paris clock** shows when it is checked 786 minutes after it was reset.

Firstly, we need to find out the time on the clock **before** the 786 minutes pass.

We are told that Paris is **one hour ahead** of London, so we need to **add one hour** to the time shown in the clock in London.

Then, since the clock **was reset**, we need to **add the 19 minutes** for which the clock in Paris was broken down. *Remember that when a clock is reset, it will start to display the actual time.*



Time on clock in Paris before the 786 minutes pass:

Time in London clock + 1 hour time difference + 19 minutes = time in Paris clock before 786 minutes

$$4 : 18pm + 1 \text{ hour} + 19 \text{ minutes} = 5 : 37pm$$

Next, we need to calculate the time on the clock in Paris after 786 minutes. When calculating time changes like this, you should always convert minutes into hours and minutes, by dividing the minutes by 60. This makes time calculations much easier.

$$786 \text{ minutes} = 13 \text{ hours and } 6 \text{ minutes}$$

$$5 : 37 \text{ pm} + 13 \text{ hours } 6 \text{ minutes} = 06 : 43am$$

Therefore the correct answer option is **E**.

Exam Tip - In clock questions, there are certain details that you should look out for particularly, as they will alter the correct answer:

- The **time difference**, and which way around it is.
- Amount of time a clock is **broken down for**.
- If a clock has been **reset again** or not.
- Check which clock the question is asking about.
- Pay attention to am/pm.

Worked example - Time someone should leave/arrive/travel

- 5 Rachel works at the hospital and needs to arrive at a restaurant for her husband's surprise party at 8pm. Rachel wants 1 hour to get ready at the restaurant before her husband arrives at 8pm. Rachel will drive from the hospital to the restaurant, since the hospital is between her house and the restaurant. Rachel's work is 12 miles from her house and the restaurant is 30 miles from her house. Rachel leaves work at 6:48pm and she drives to the restaurant with an average speed of 40mph.

How long will Rachel have to get ready and what time should she have left to have one hour to get ready before her husband arrives at 8pm?

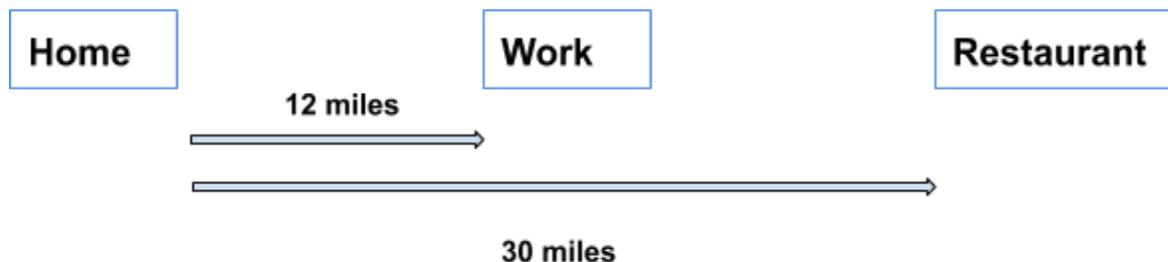
- A 45 minutes, 6:15pm
- B 1 hour, 6:27pm
- C 45 minutes, 6:33pm
- D 1 hour, 6:48pm
- E 30 minutes, 7:00pm

In questions like this, be **careful with distances**. Questions often do **not** give you the distances you need for your calculations, but distances that enable you to **calculate the distances you need**. This is demonstrated on the next page.



First, we need to work out the distance from Rachel's **work to the restaurant**.

We are told that the distance from **Rachel's house to her work is 12 miles** and the distance from her **house to the restaurant is 30 miles**. When given information like this, you may find it beneficial to draw a quick diagram:



In the question we are told that Rachel is **at work**, and leaves at **6:48pm** to drive to the restaurant. We are **not** told what the distance from her work to the restaurant is; we have to **work it out using the information given**.

Distance from **work to the restaurant**:

$$30 - 12 = 18 \text{ miles}$$

We now need to work the **time** it takes for Rachel to get from her work to the restaurant. We need to use the equation $S = D \div T$ (*speed = distance ÷ time*). It is important to remember to check the **units** when using equations. For example, we are told that the average speed Rachel drives is at **40mph**. Therefore we need to make sure the **distance is in miles** and be aware that the time we will calculate will be in hours. To get this in minutes, we will multiply by 60.

Time it takes Rachel to get from **work to the restaurant**:

$$S = 40\text{mph}$$

$$D = 18 \text{ miles}$$

$$40 = 18 \div T$$

$$40T = 18$$

$$T = 18 \div 40$$

$$T = 0.45$$

$$T = 0.45 \times 60$$

$$T = 27 \text{ minutes}$$

Time Rachel arrives at the restaurant:

$$6 : 48 \text{ pm} + 27 \text{ minutes} = 7 : 15\text{pm}$$



Rachel's husband will arrive at 8pm. If she leaves at 6:48pm, the amount of time Rachel will have get ready is:

$$8 : 00 \text{ pm} - 7 : 15 \text{ pm} = 45 \text{ minutes}$$

We can see that there are only 2 answer options containing 45 minutes for Rachel to get ready: **option A and option C.**

Lastly, we need to work out what time Rachel should have left to have **1 hour** to get ready. We have just worked out that she has 45 minutes to get ready if she leaves at 6:48 pm. This means she has **15 minutes less** to get ready **compared to the 1 hour she wanted.** Therefore, Rachel needs to **leave 15 minutes earlier:**

$$6 : 48 - 15 \text{ minutes} = 6 : 33 \text{ pm}$$

Therefore the correct answer option is **C**, as Rachel has **45 minutes** to get ready when she leaves work at 6:48 pm and she should have left at **6:33pm** to have one hour to get ready.

In this question we were asked to work out how long Rachel has to get ready as well as what time she should have left to have one hour to get ready. Therefore we need to work out two things. It is good practice to keep what you are working out in mind, by **highlighting what the question is asking** and **double checking** that you have worked out the right thing before selecting your answer.

Exam Tip - As mentioned previously, it is very important to read questions **carefully** and **highlight** key information. This will help you perform the correct calculations and **avoid trap answer options.**

In this question, option A is a trap answer. It would be obtained by incorrectly thinking that 30 miles is the distance between Rachel's work and the restaurant, rather than the distance from Rachel's **house to the restaurant.**



'Spatial' questions

Worked example - seating arrangements

- 6 A group of 6 people go to a meeting and sit in specific arrangement during this meeting. Chris and Eve work together and want to sit next to each other. Everyone sits next to someone of the opposite gender. People sat next to each other do not have the same number of letters in their name and they do not have the same letters in their names.

Which of these show the sitting arrangement of the meeting?

- A Jimmy, Eve, Buck, Selena, Todd, Larah
- B Jimmy Eve, Larah, Buck, Selena, Todd
- C Jimmy, Larah, Buck, Eve, Todd, Selena
- D Selena, Todd, Eve, Jimmy, Buck, Larah
- E Selena, Jimmy, Eve, Buck, Larah, Todd

Spatial arrangement questions often contain many rules that need to be followed, and many similar answer options. This can make them seem confusing. Therefore, it is important to have a **logical and methodical approach to such questions**.

It is a good idea to **highlight** or **write out** each of the rules as you read the question. Then you can **go through each option** and **test each rule** that is mentioned in the question.

When checking an answer option, if you find **one rule that isn't followed**, you can immediately **eliminate** that option; you **do not** need to continue to check it. You do not need to find all errors in an answer option, as **one is enough to make it incorrect**.

For this question, the key points that we need to remember are:

1. Chris and Eve work together and want to sit next to each other.
2. Everyone sits next to someone of the opposite gender.
3. No one sitting next to each other has the same number of letters in their names.
4. No one sitting next to each other has the same letter in their names.

We will now test each option to see if they follow the rules in the question.

Option A:

1. Jimmy and Eve are sat next to each other.
2. Everyone is sat next to someone of the opposite gender.
3. It is important to realise that the first and last people in the list (Jimmy and Larah) will be sitting next to each other. Larah and Jimmy have 5 letters in their names, meaning this option does not follow rule 3. **Therefore option A is wrong.**



Option B:

1. Jimmy and Eve are sat next to each other.
2. Eve and Larah are sat next to each other and they are of the same gender.

Therefore option B is wrong.

Option C:

1. Eve and Jimmy are not sat next to each other. Therefore we do not need to test any more rules. **Option C is wrong.**

Option D:

1. Eve and Jimmy are sat next to each other.
2. Jimmy and Buck are sat next to each other and they are both boys. Also as Larah and Selena are sat next to each other and they are both girls. Since rule 2 is not followed, **option D is wrong.**

Option E: In the exam, after eliminating the first 4 options you would know that E is the right answer. However, it is good practice to check every answer option as this reduces your chances of making a mistake.

1. Jimmy and Eve are sat next to each other.
2. Everyone is sat next to someone of the opposite gender.
3. No one sat next to each other has the same number of letters in their name.
4. Lastly the fourth rule is also followed as no one sat next to each other has the same letters in their names. **Therefore option E is correct.**

Exam Tip 1 - Spatial questions require **clear and logical thinking**. Take care when checking each option and **try not to miss** out any rules when testing each option.

Exam Tip 2 - Another method for testing rules is to **take each rule in turn** and check each answer option. For example, take rule 1 and check all answer options to see if this rule is followed. Immediately eliminate any answers where it is not.

You may find this method more logical to you. We recommend that you try both methods when you practice questions and see which works best for you.

