Year 11 Essential Mathematics

Unit 1 Practical Application: How Big?

Most schools have a one size fits all philosophy for desks and chairs. You are to design a desk that best suits you and your class' needs

Things to consider:

1. What items do you need on your desk at the one time? (2)

2. Arrange the items as you would like them on your desk. Consider how you would change the size and shape of your desk to make it more comfortable to complete your work while having access to everything you need. Design a desk with the shape and dimensions you need to fit all these items easily. (4)

3. Calculate the area of the desk you designed. (2)

4. Calculate the percentage change in the area between your existing desk and the new design. (4)

5. What dimensions could triangular, rectangular, square and composite shaped desks have, while keeping the same area as your design? Verify by showing full calculations for a selection of different desk designs. (10)

6. Comment on the advantages and disadvantages of each of the design types. Support your comments with diagrams as necessary. (10)

7. What is the area of your classroom? (3)

8. How many desks are required in your room? (2)

9. If the desks currently in the class were replaced by your new desk design, what percentage of floor space would there be with and without desks? (4)

10. Verify that your desk can fit in your classroom (both the number needed and through the doorway). (4)

11. Prepare a brief report summarising all your calculations and either recommending or not recommending your desk with reasons. (5)