



Mathematics Project Y6/Y7: Design a new hotel resort

Name

Date



Information for Students: Complete all tasks in the order that they are set.



Information for Parents/Guardians: Ways in which you can support your child.

- Helping students to access the internet.
- Checking that students are progressing through the tasks and understand what the tasks require.
- Discuss the decisions the students make.

Your task is to design a new hotel resort.

It must have a main hotel building, a swimming pool, a games area and its own private beach





Task 1: Design a plan of the area.

1. Draw and design your hotel resort. Imagine you are on a plane looking down onto the resort. Remember to choose a name for your hotel.

Remember to include the main hotel building, the swimming pool, the games room area and the private beach.



Task 2: Swimming Pool

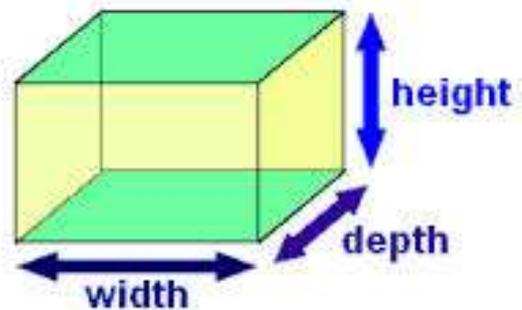
You have £1000 to spend on your swimming pool.

You need to work out what size your pool can be using the information below.

- Digging an area = £20 a square metre
- Pool tiles = £10 a square metre
- Safety fencing = £5 per metre
- Decorative trees = £15 each
- Diving boards = £12 each
- Ladders = £8 each
- Water slides = £10 small
 - £ 20 medium
 - £ 30 large
 - £50 loop-de-loop

Your pool can only be a cuboid shape

1. What are the dimensions of your swimming pool? Work out the cost of digging the area and tiling the sides of the pool.



2. How many diving boards and ladders are you having? Now work out the cost.

3. Are you having safety fencing? If so how many? Now work out the cost.

4. Are you having any decorative trees? If so, how many? Now work out the cost

5. What size water slides are you having? Now work out the cost.



Resilience

6. Work out the total cost of your swimming pool. You must be in budget. If you are not in budget you need to change your design.



Task 3: Private beach

1. You have £500 to spend on sun loungers and beach umbrellas.

A sun loungers costs £12 and a beach umbrella costs £7.

How many can you buy to start with?



2. You earn a bonus from the beach awards committee. You have an extra £1000 to spend.

How many extras can you but now?



Task 4: Games Area

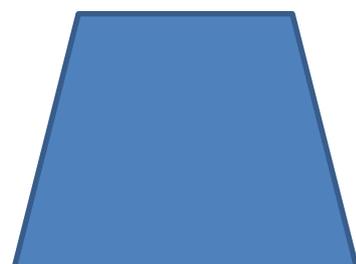
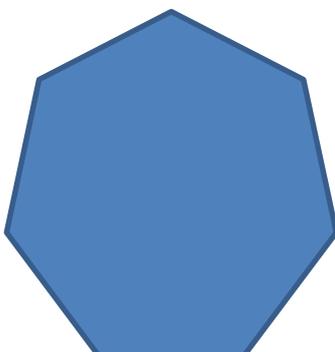
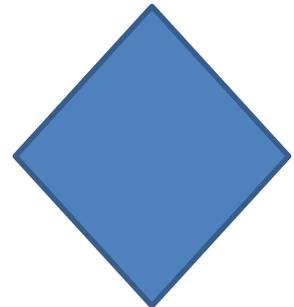
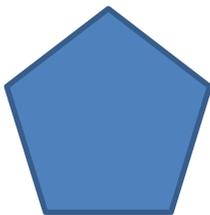
Designing a games area is tricky. You have to think of the activities you might have there and then make sure you use all of the space.

List the activities you would like in your games area.



Resourcefulness

Design the area and divide it into separate activities for each area. Try out some different shapes. Name the five shapes below.



Games Area Use the scale 1m: 1 cm





Task 5: Main hotel building

Now you must work out how much it will cost to build the main hotel building.

Each floor will cost £200 to build. You will then need to add rooms and decorations.

A single room will cost £100

A double room will cost £200

A deluxe room will cost £300

A lift will cost £1500. You may have more than one.

You can have no more than 7 rooms per floor

Decorations:

Pictures £20 each

Armchairs £12 each

Sofa £21 each

Rug £7 each

You can choose how many floors you want the hotel to have but remember you must add the cost of the rooms and decorations too.

1.

Number of floors _____ Cost _____

Number of single rooms _____ Cost _____

Number of double rooms _____ Cost _____

Number of deluxe rooms _____ Cost _____

Number of lifts _____ Cost _____

Number of pictures _____ Cost _____

Number of armchairs _____ Cost _____

Number of sofas _____ Cost _____

Number of rugs _____ Cost _____

Total Cost to build the main hotel building _____

1. You consider lending some money from the bank to build the main hotel building. They offer you two deals.

Loan amount	£15,000	Loan amount	£15,000
Length of agreement	5 years	Length of agreement	10 years
Total amount payable	£16,585	Total amount payable	£18,245
Monthly repayments		Monthly repayments	

Loan amount	£20,000	Loan amount	£20,000
Length of agreement	5 years	Length of agreement	10 years
Total amount payable	£23,260	Total amount payable	£26,795
Monthly repayments		Monthly repayments	

Complete the two tables and work out the monthly payments.



Task 7: Summer Holidays



Your hotel has been rated 5 stars and is very popular.

These are the basic prices:

- A single room = £85 per week
- A double room = £110 per week
- A deluxe room = £200 per week
- Games pass = £30 per week
- Pool pass = £5 per week

4. In week four, bookings were taken for eighteen deluxe, twelve double and eleven single rooms. No rooms wanted games passes but fifteen of the forty one rooms booked pool passes. How much money will you make in week four?

5. In the final week the hotel was very busy with twenty deluxe, twenty double and fifteen single rooms booked, all of which booked both games and pool passes. How much money will you make during the last week?



6. Now add the total money for the five weeks.

7. Take away the cost of building your hotel and the £1000 you spent on the pool.

8. Finally add on £3490 you made renting out beach umbrellas and sun loungers over the five weeks.

What is your final total amount?



Have you made a profit?



Congratulations if you made a profit

If not, what would you have to increase the room prices per week to break even?