# What are Space Planning Principles?

Worksheet

Space planning principles are the rules - adjacency, zoning, circulation, and efficiency - architects use to arrange a building's spaces so they function well and use area efficiently, often measured by the net-to-gross ratio.

## Questions

1. What does the net-to-gross ratio measure?

A) Building height
B) How efficiently gross area converts to usable space
C) Number of rooms
D) Construction cost

2. What is a bubble diagram used for?

A) Final construction drawings
B) Early rough mapping of space relationships
C) Structural calculations
D) Electrical wiring plans

3. Which spaces should be planned as adjacent?

A) Unrelated spaces at random
B) Functionally related spaces used together often
C) Only the largest rooms
D) Only exterior spaces

4. A building with 60% efficiency and 1000 m gross area has how much usable area?

A) 1000 m
B) 600 m
C) 400 m
D) 60 m

5. A building has a gross area of 1000 m and a net usable area of 780 m. Find its space efficiency.

6. An office needs 65% efficiency with a gross area of 1200 m. Find the required net usable area.

7. A floor has net usable area 900 m at 75% efficiency. Find the gross area.

8. Define: What is adjacency in space planning?

9. Define: What is a bubble diagram?

10. Define: What is net-to-gross efficiency?

# Answer Key

1. B) How efficiently gross area converts to usable space - It expresses usable area as a percentage of total built area.

2. B) Early rough mapping of space relationships - Bubble diagrams sketch relative space size and adjacency before detailed layout.

3. B) Functionally related spaces used together often - Adjacency planning places related functions near each other to streamline workflow.

4. B) 600 m - Net = Efficiency Gross / 100 = 60 1000/100 = 600 m.

5. Efficiency = (Net/Gross) 100 Efficiency = (780/1000) 100 Efficiency = 78%

6. Net = Efficiency Gross / 100 Net = 65 1200 / 100 Net = 780 m

7. Gross = Net / (Efficiency/100) Gross = 900 / 0.75 Gross = 1200 m

8. The principle of placing functionally related spaces near each other to improve workflow.

9. A rough diagram showing spaces as circles sized by area and connected by relationship lines, used early in planning.

10. The ratio of usable floor area to total built area, expressed as a percentage - higher means less space lost to walls and circulation.