Bird's-Eye Room Map: Symbols, Footprints, and a Clear Key

Original tasks 1, 2 / complete keys

Task 1

A rectangular room is 5 m by 4 m. It has one door on the east wall and one window on the west wall. A bed footprint is 2 m by 1.5 m, a desk footprint is 1.2 m by 0.6 m, and a chair is a circle 0.6 m across. Describe a bird's-eye map with a key and labels. Use hypothetical values.

Answer: Draw a 5 m by 4 m rectangle. Put a door gap with a quarter-circle swing arc on the east wall. Put a window double line on the west wall. Place the bed rectangle (2 m by 1.5 m) against the north wall, leaving the door swing clear. Place the desk rectangle (1.2 m by 0.6 m) against the south wall. Place the chair circle (0.6 m across) beside the desk. Write a key outside the room: gap with arc = door; double line = window; 2 by 1.5 rectangle = bed; 1.2 by 0.6 rectangle = desk; circle = chair. Label each footprint.

Reason: The room area is 20 square metres. Bed area is 3 square metres; desk area is 0.72 square metres; total furniture area is 3.72 square metres; remaining floor is 16.28 square metres. The door swing stays clear because the bed is on the north wall and the door is on the east wall.

Check: Count symbols: one door, one window, one bed, one desk, one chair. Confirm each appears in the key. Check arithmetic: 2 times 1.5 equals 3; 1.2 times 0.6 equals 0.72; 3 plus 0.72 equals 3.72; 20 minus 3.72 equals 16.28. Confirm units are square metres.

Task 2

A rectangular room is 3 m by 3 m. It has one door on the north wall and one window on the south wall. A bed footprint is 1.8 m by 1 m, a desk footprint is 1 m by 0.5 m, and a chair is a circle 0.5 m across. Describe a bird's-eye map with a key and labels. Use hypothetical values.

Answer: Draw a 3 m by 3 m rectangle. Put a door gap with a quarter-circle swing arc on the north wall. Put a window double line on the south wall. Place the bed rectangle (1.8 m by 1 m) against the west wall, leaving the door swing clear. Place the desk rectangle (1 m by 0.5 m) against the east wall. Place the chair circle (0.5 m across) beside the desk. Write a key outside the room: gap with arc = door; double line = window; 1.8 by 1 rectangle = bed; 1 by 0.5 rectangle = desk; circle = chair. Label each footprint.

Reason: The room area is 9 square metres. Bed area is 1.8 square metres; desk area is 0.5 square metres; total furniture area is 2.3 square metres; remaining floor is 6.7 square metres. The door swing stays clear because the bed is on the west wall and the door is on the north wall.

Check: Count symbols: one door, one window, one bed, one desk, one chair. Confirm each appears in the key. Check arithmetic: 1.8 times 1 equals 1.8; 1 times 0.5 equals 0.5; 1.8 plus 0.5 equals 2.3; 9 minus 2.3 equals 6.7. Confirm units are square metres.

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Original tasks 3, 4 / complete keys

Task 3

A rectangular room is 6 m by 2 m. It has one door on the south wall and one window on the north wall. A bed footprint is 2 m by 1 m, a desk footprint is 1 m by 0.5 m, and a chair is a circle 0.5 m across. Describe a bird's-eye map with a key and labels. Use hypothetical values.

Answer: Draw a 6 m by 2 m rectangle. Put a door gap with a quarter-circle swing arc on the south wall. Put a window double line on the north wall. Place the bed rectangle (2 m by 1 m) against the west wall, leaving the door swing clear. Place the desk rectangle (1 m by 0.5 m) against the east wall. Place the chair circle (0.5 m across) beside the desk. Write a key outside the room: gap with arc = door; double line = window; 2 by 1 rectangle = bed; 1 by 0.5 rectangle = desk; circle = chair. Label each footprint.

Reason: The room area is 12 square metres. Bed area is 2 square metres; desk area is 0.5 square metres; total furniture area is 2.5 square metres; remaining floor is 9.5 square metres. The door swing stays clear because the bed is on the west wall and the door is on the south wall.

Check: Count symbols: one door, one window, one bed, one desk, one chair. Confirm each appears in the key. Check arithmetic: 2 times 1 equals 2; 1 times 0.5 equals 0.5; 2 plus 0.5 equals 2.5; 12 minus 2.5 equals 9.5. Confirm units are square metres.

Task 4

A rectangular room is 4 m by 4 m. It has one door on the west wall and one window on the east wall. A bed footprint is 2 m by 1.5 m, a desk footprint is 1.2 m by 0.6 m, and a chair is a circle 0.6 m across. Describe a bird's-eye map with a key and labels. Use hypothetical values.

Answer: Draw a 4 m by 4 m rectangle. Put a door gap with a quarter-circle swing arc on the west wall. Put a window double line on the east wall. Place the bed rectangle (2 m by 1.5 m) against the north wall, leaving the door swing clear. Place the desk rectangle (1.2 m by 0.6 m) against the south wall. Place the chair circle (0.6 m across) beside the desk. Write a key outside the room: gap with arc = door; double line = window; 2 by 1.5 rectangle = bed; 1.2 by 0.6 rectangle = desk; circle = chair. Label each footprint.

Reason: The room area is 16 square metres. Bed area is 3 square metres; desk area is 0.72 square metres; total furniture area is 3.72 square metres; remaining floor is 12.28 square metres. The door swing stays clear because the bed is on the north wall and the door is on the west wall.

Check: Count symbols: one door, one window, one bed, one desk, one chair. Confirm each appears in the key. Check arithmetic: 2 times 1.5 equals 3; 1.2 times 0.6 equals 0.72; 3 plus 0.72 equals 3.72; 16 minus 3.72 equals 12.28. Confirm units are square metres.

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Source rubric / reflection

- [ ] Room outline matches the actual wall shape and is closed except at door gaps.
- [ ] Door and window symbols are placed on the correct walls and defined in the key.
- [ ] Furniture footprints are simple top-down shapes, proportional to each other, and do not block door swings.
- [ ] Every symbol on the map appears in the key, and every key symbol appears on the map.
- [ ] Labels are legible and consistent in size; letter style may vary.
- [ ] Key is outside the room outline and does not cover furniture.
- [ ] Arithmetic checks, if used, are correct and units are consistent.

Reflection: What did you check, what did you change, and what will you try next?