

Principles of Kitchen and Bathroom Design

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(A quick-reference guide for students, designers, and homeowners)

1. Layout Fundamentals

Principle	Kitchen	Bathroom
Work Triangle / Zones	• Cooking zone (stove, oven) • Preparation zone (counter, sink) • Cleaning zone (dishwasher, sink)	• Wet zone (shower/bath, tub) • Dry zone (vanity, toilet) • Storage zone (linen, medicine cabinet)
	Keep the three points within 12-18 ft total distance for efficient movement.	Separate wet and dry zones to control moisture and improve safety.
Clearances	• Minimum 36-48 in between countertops and appliances. • Aisle width 42 in (48 in for high-traffic homes).	• Minimum 30 in clearance in front of the toilet and vanity. • Shower/tub entry 36 in wide; wheelchair-accessible 48 in.
Flow & Circulation	• Avoid “dead-end” pathways; the triangle should be a smooth loop. • Keep traffic paths away from the main work triangle.	• Position the door so it opens away from the vanity and does not swing into the shower. • Keep the toilet out of direct sight from the door when possible (privacy).

2. Spatial Planning & Zoning

1. Define Primary Functions

- Kitchen: cooking, prep, cleaning, storage, socializing.
- Bathroom: hygiene, grooming, relaxation, storage.

2. Create Functional Zones

- Use floor-level changes, different countertop heights, or lighting to visually separate zones.

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3. Consider Accessibility

- Reachable countertop height (36in for most users; lower for children or wheelchair users).
- Lever-type faucets, pull-out drawers, and grab bars.

3. Ergonomics & Human Factors

Aspect	Kitchen	Bathroom
Counter Height	Standard 36in; island may be 42in for bar-seating.	Vanity height 32-34in; comfort height 36-38in for wheelchair users.
Reach Zones	• Primary (0-24in) – easy reach for daily items. • Secondary (24-48in) – less frequent items. • Back zone (48-72in) – storage, rarely used items.	Same three-zone concept applied to vanity drawers, medicine cabinet, and linen closet.
Lighting Placement	• Task lighting directly above work surfaces (1500–3000lux). • Ambient lighting for overall ambience.	• Bright, shadow-free vanity lighting (1200–2000lux). • Soft ambient lighting for relaxation (e.g., around tub).
Safety	• Slip-resistant flooring. • Rounded countertop edges.	• Slip-resistant tile, floor-level shower entry, anti-scald valves.

4. Materials & Finishes

Category	Kitchen	Bathroom
Countertops	• Granite, quartz, solid surface, wood (buttressed with seal	