What Is Educational Facility Design?

Worksheet

Educational facility design is the planning of school buildings around classroom layout, flexible/collaborative learning spaces, safety (fire egress, security), acoustics, and daylighting to support student learning outcomes.

Questions

1. What is the main goal of educational facility design?

A) Fitting the maximum number of desks per room
B) Supporting how students learn through layout, safety, and acoustics
C) Using only fixed-row seating everywhere
D) Minimizing classroom size regardless of activity

2. Which best describes a flexible learning space?

A) Fixed desks facing forward only
B) Movable furniture supporting multiple activities
C) A single large lecture hall for all grades
D) No furniture at all

3. Why do fire codes require two remote exits per classroom wing?

A) To save construction cost
B) To allow safe, timely evacuation even if one exit is blocked
C) To improve acoustics
D) To increase daylighting

4. What is a target reverberation time for classroom acoustics?

A) 3.0 seconds or more
B) Around 0.6 seconds or less
C) No specific target needed
D) 10 seconds

5. A school wants a classroom to support both lecture and small-group work in the same period. What design choices help?

6. A new elementary school must let 500 students evacuate within the code-required time. How should circulation be planned?

7. A district wants classrooms with better speech intelligibility for students with hearing differences. What acoustic strategies apply?

8. Define: What is the goal of educational facility design?

9. Define: What defines a 'flexible learning space'?

10. Define: What is a code requirement common to school design?

Answer Key

1. B) Supporting how students learn through layout, safety, and acoustics - It plans layout, safety, and acoustics around actual learning needs.

2. B) Movable furniture supporting multiple activities - Flexible spaces use movable furniture and reconfigurable zones for varied activities.

3. B) To allow safe, timely evacuation even if one exit is blocked - Two remote exits ensure evacuation is possible even if one route is compromised.

4. B) Around 0.6 seconds or less - Lower reverberation (~0.6s or less) keeps speech intelligible for all students.

5. Use lightweight, stackable/movable desks instead of fixed rows Add writable surfaces (whiteboard walls) on multiple sides, not just the front Include flexible zones - a rug area, a group table cluster - within one room Ensure sightlines to a shared display work from every seating configuration

6. Provide at least two remote exits from each classroom wing per fire code Size corridors for peak two-way flow, not just one-way circulation Avoid dead-end corridors longer than the code-allowed maximum Place assembly points a safe distance from the building, clearly wayfinding-marked

7. Target a reverberation time around 0.6 seconds or less for classrooms Add acoustic ceiling tiles and wall panels to absorb sound Isolate HVAC noise sources so background noise stays below ~35 dBA Use sound-field amplification systems where budgets allow

8. To plan schools so classroom layout, safety, acoustics, and daylighting support how students learn.

9. Movable furniture, reconfigurable zones, and support for multiple simultaneous activities, instead of fixed rows.

10. At least two remote exits per classroom wing for fire egress, sized for peak evacuation flow.