

*Sample Lesson Plan
Construction Training Program (10-hour)*

Topic: Scaffolds

Overview of OSHA Standard

When OSHA revised its scaffolds standard in 1996, BLS studies showed that 25% of workers injured in scaffold accidents had received no scaffold safety training, and 77% of scaffolds were not equipped with guardrails. OSHA estimates that informed employers and workers, in compliance with correct safety standards, can save as many as 50 lives and prevent 4,500 accidents every year. In a recent BLS study, 72 percent of workers injured in scaffold accidents attributed the accident either to the planking or support giving way, or to the employee slipping or being struck by a falling object.

The OSHA standard sets performance-based criteria to protect employees from scaffold-related hazards such as falls, falling objects, structural instability, electrocution, or overloading. It also addresses training and various types of scaffolds, as well as falling object protection, ladders, weather conditions, aerial lifts, stilts, and other matters that are not covered in OSHA's previous scaffolding standards. In addition, it allows employers more flexibility when using protective systems for workers on scaffolding.

Step 1: Planning the Lesson

• **Instructional Materials.**

1. PowerPoint presentation.
2. Instructor notes.
3. Other materials.

• **Instructional Objectives.**

1. Complete the required topics for the OSHA 10-hour course.
2. Complete the following optional topics:
 - a.
 - b.
 - c.
3. Present *Scaffolds* to [number] participants.
4. Incorporate active participation in each lesson.
5. Provide a quiz or short evaluation at the end of the course.
6. Ensure feedback from participants at various points in the training.

• **Guest Speakers/Presenters and Topics/Responsibilities.**

Step 2: Presenting the Lesson

• **Lesson Introduction.**

Introductory remarks or transition from previous lesson.

- **Learning Objectives/Outcomes.**

Upon completion of the lesson, participants will be able to:

1. Name the three types of scaffolds and describe their main characteristics.

Possible response.

- Supported scaffolds - platforms supported by rigid, load bearing members such as poles, legs, frames and outriggers.
- Suspended scaffolds - platforms suspended by ropes or other non-rigid means from an overhead structure.
- Aerial lifts - vehicle mounted devices used to get a worker to an elevated position (e.g. cherry pickers or boom trucks).

2. List at least three of the four main hazards to which persons working on scaffolds are exposed, and describe at least one method of hazard prevention for each of the hazards.

Possible responses.

- Falls from elevation
 - Use guard rails
 - Use fall arrest systems
- Scaffold collapse or bad planking giving way
 - Ensure proper scaffold construction
 - Do not overload with people or equipment
 - Use personal fall arrest systems
 - Have a competent person check scaffold, as required
- Struck by falling tools or debris
 - Barricade the area below the scaffold and forbid entry
 - Use panels or screens
 - Build a canopy or net that will contain or deflect falling objects
- Electrocutation
 - Honor clearance distances required between power lines and scaffolding
 - De-energize the lines
 - Install protective covering

- **Learning Objectives/Outcomes. (Continued)**

3. Identify the three essential elements of safe scaffold construction, and give at least three examples of incorporating each of the elements.

Possible responses.

- Use of appropriate scaffold construction methods
 - The height of the scaffold should not exceed four times its base
 - Ensure gaps between decking and work areas meet OSHA requirements
 - Must be able to support its own weight plus four times the maximum load
 - Proper overlap, fittings and restraints
 - Platforms supported by legs, outrigger beams, brackets, poles, uprights, posts and frames
 - Suspension scaffolds supported by connecting hardware, and suspension rope that can withstand six times its maximum load
- Proper scaffold access
 - Provide access when platforms are more than two feet above or below access point
 - Use portable-type ladders, stair towers, ramps and walkways
 - Ladders may not have the bottom rung more than 24 inches high
 - May use building stairs and come out a window
 - May access from another scaffold, structure or hoist, but *may not* use cross braces to gain access
- Ensuring proper incorporation of the role of a competent person
 - Scaffolds can only be erected, moved, dismantled or altered under the supervision of a competent person
 - A competent person must inspect the scaffold for visible defects before each shift and after any alterations are performed, and defective parts must be replaced immediately
 - A competent person determines whether an appropriate means of access is provided, based on site conditions
 - A competent person trains workers to recognize hazards
 - A competent person determines if it is safe to work on a scaffold during storms, inclement weather (such as icing conditions), or high winds

- **Planned Activities, Discussion, or Participant Interaction**

Step 3: Evaluating Student Learning and Instruction

- **Lesson Evaluation and Comments.**

References

OSHA Standard: 29 CFR 1926 Subpart L (1926.450 to 1926.454)

OSHA Publications

- www.osha-slc.gov/OshDoc/Additional.html
- 3100 Crane or Derrick Suspended Personal Platforms
- 3150 A Guide to Scaffold Use in the Construction Industry

OSHA References/Resources

- Construction Safety and Health Outreach Program - Scaffolding
 - www.osha-slc.gov/doc/outreachtraining/htmlfiles/scaffreg.html
- Different Types of Scaffolds
 - www.osha-slc.gov/NewInit/Scaffolds/Handout.pdf
- OSHA Construction eCAT - Falls: Improper Scaffold Construction
 - www.osha.gov/SLTC/construction_ecat/falls/improper_scaffolds.html
- OSHA Construction Scaffolding eCAT
 - www.osha.gov/SLTC/scaffolding_ecat/index.html
- OSHA Technical Links - Construction: Scaffolding
 - www.osha.gov/SLTC/constructionscaffolding/index.html
- OSHA Technical Links - Scaffolding
 - www.osha.gov/SLTC/scaffolding/index.html
- Pump Jack/Ladder Jack Scaffold Photo Compliance Guide
 - www.osha.gov/SLTC/pptpresentations/pumpjack_0398/index.html
- Scaffolding Slides
 - www.osha.gov/SLTC/scaffolding/scaffold_slides/mainpage.html
- Scaffolds Outreach Memo (includes slides and handout on different types of scaffolds)
 - www.osha.gov/NewInit/Scaffolds/index.html
- Video - A Basic Look At Scaffolds For Compliance Officers
 - www.osha.gov/SLTC/video/scaffold/video.html
- Working with Scaffolding - Using them Properly to Prevent Hazards. Job Safety and Health Quarterly - Spring 1999
 - www.osha.gov/Publications/JSHQ/jshq-v10-3-spring1999.pdf