Lesson Plan 12: Latrine Slab Design  **60 minutes total**



**Lesson Description**



Participants learn about different latrine slab designs and materials. They discuss the advantages and limitations of each design to help decide what design might be best for their project. Safety will be discussed as a key component of slab design.

**Learning Outcomes**





At the end of this session participants will be able to:

1. Describe different latrine slab designs and materials.
2. Discuss advantages and limitations of different latrine slab designs.

**Materials**



* Flipchart paper
* Tape
* Markers
* Blank paper (1 per participant)
* Straws (10 per group)
* Eggs (1 per group)
* Sanitation System Design Workbook

Optional:

* PowerPoint: Slab Design
* Computer and projector

**Preparation**



* Review topic in Technical Brief: Sanitation – User Interface and Latrine Construction Manual
* Write the heading “*Why Do We Need a Latrine Slab?*” on flipchart paper
* Write the heading “*Characteristics of a Good Slab”* on flipchart paper
* Gather straws and eggs needed for the opening activity
* Optional: Write the learning outcomes on flipchart paper
* If using PowerPoint: Slab Design
  + Review the PowerPoint presentation
  + Print the speaker’s notes
  + Check that the projector is working
  + Cue the PowerPoint on the computer
* No PowerPoint option:
  + Print the slides in advance and follow it for the lesson
  + Draw any required diagrams on flipchart paper
  + Create blank advantages and limitations flipcharts for each slab type

**Introduction 15 minutes**



1. Explain to participants that they will have 5 minutes to create a structure out of straws and tape that will support an egg 2 inches off of the table.
2. Divide the participants into groups of 3 people. Hand out 10 straws and 30 cm of tape to each group. Tell participants to start and give them time updates as they build.
3. After 5 minutes, test each structure with an egg.
4. ****Ask the participants “How is building this structure for an egg similar to building a latrine?”

* *You need to build a strong enough slab to hold up a person so that it doesn’t collapse and the person doesn’t fall into the pit or get injured.*

1. Present the learning description or learning outcomes.

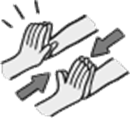
**Slab Design 35 minutes**



1. Ask the participants “What types of slabs have you seen in the past?” Share some responses as a large group.

Note: In some countries you may need to separate men and women for the following activities to accommodate cultural sensitivities. If there are not enough members of one gender to form a full group, then demonstrate using only a few participants.

1. Use PowerPoint: Slab Design. Present Slides #3–5.
2. **Stop** on Slide #6. Ask the questions and record the responses on the “*Why Do We Need a Latrine Slab?”* and “*Characteristics of a Good Slab*” flipchart papers.
   * *Why do we need a latrine slab? Defines improved sanitation (covered pit), safety for users, keeps excreta in the pit*
   * *What makes a good slab? Strong, durable, long lasting, smooth, easy to clean, affordable*
3. Present Slides #7–9.
4. **Stop** on Slide #10 *Activity – Tension and Compression*

* Explain to the participants that they are going to feel what happens in a slab when it is loaded with weight.
* **In pairs, tell the participants to face each other, outstretch their arms, put their palms together, and then push. Explain that they are feeling compression.
* Ask the participant to cup their hands, link their fingers with their partner, and then pull. Explain that they are feeling tension.

1. Present Slide #11.
2. **Stop** on Slide #12 *Activity – Strength of a Reinforced Slab*

* Divide participants into small groups of 4 or 5 people.
* Ask each group to pick up an object such as a book or purse.
* Ask the participants to hold the object with one hand each in the middle of their groups, with their arms outstretched at shoulder height. Explain that they are a slab without reinforcement and that you will be the load.
* Go to each group and push down on their object. Ask them to remember the feeling.
* Ask the participants to now use their other hand to support their elbow. They are now a reinforced slab. Push down on the object.
* Ask the participants “What was the difference between what it felt like to be a slab without reinforcement and a slab with reinforcement?” *A reinforced slab felt much stronger.*

1. Present Slides #13-14.
2. **Stop** on Slide #15 *Activity – Strength of a Dome.*

* Tell the participants to return to their small groups.
* Ask the participants to hold the object as if they are a slab without reinforcement again. Push down on their object and ask them to remember the feeling.
* Ask the participants to now raise the object up and step their feet out so that they are tilted towards the object. Explain that they are now a dome slab. Push down on the object.
* Ask the participants “What was the difference between being a flat slab without reinforcement and a dome slab without reinforcement?” *The dome slab was much stronger.*

1. Present Slide #16–20.
2. **Stop** on Slide #21*.* Hand out a blank piece of paper to each participant. Explain that they will be making three drawings on that one piece of paper.
3. **Stop** on Slide #22*.* Explain the design requirements for a reinforced slab. Ask the participant to draw a diagram of the reinforced slab and use words and numbers to label it.
4. **Stop** on Slide #23.Explain the design requirements for the dome slab. Ask the participant to draw a diagram of the dome slab and label it.
5. **Stop** on Slide #24. Explain the design requirements for the SanPlat. Ask the participant to draw a diagram of the SanPlat and label it.
6. **Stop** on Slide #25. In pairs, ask the participants to discuss the advantages and limitations of the different slabs.
7. ****Present Slides #26–31. Stop on each slide and ask the participants “What are the advantages and limitations of this slab?” Then show the table on the slide.

**Review 10 minutes**



1. Explain to participants that they will now design their slab. Ask participants to turn to the Slab section in their Sanitation System Design Workbook. Tell them they will have 10 minutes to complete the worksheet.
2. Remind participants to think about how their slab and their toilet will work together.
3. Encourage participants to discuss any questions or challenges with each other or with you.

**Reflections on Lesson**