



Light Search and Rescue Operations



CERT Basic Training Unit 5



Search and Rescue

- Consists of three separate operations
 - Sizeup: Using 9-step, continual model
 - Search: Locating victims and documenting
 - Rescue: Extricating victims



Deciding to Attempt Rescue

- Decision based on three factors
 - The risks involved for the rescuer
 - Greatest good for the greatest number
 - Resources and manpower available



Goals of Search and Rescue

- Rescue greatest number in shortest amount of time
- Get walking wounded out first
- Rescue lightly trapped victims next
- Keep the rescuer safe

Effective Search and Rescue

- Depends on:
 - Effective sizeup
 - Rescuer safety
 - Victim safety



Unit Objectives

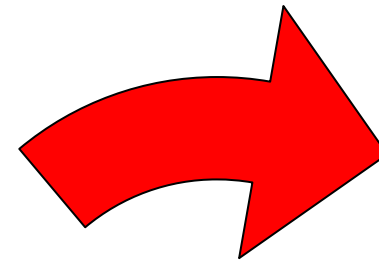
- Identify sizeup requirements
- Describe most common search techniques
- Use safe techniques for debris removal
- Use safe techniques for victim extrication
- Describe ways to protect rescuers

Unit Topics

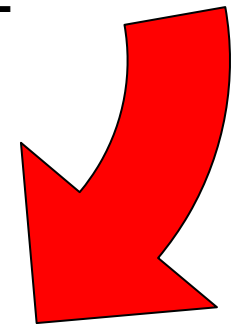
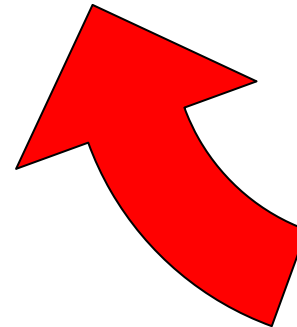
- Safety During Search and Rescue Operations
- Conducting Interior and Exterior Searches
- Conducting Rescue Operations

CERT Sizeup

1. Gather Facts
2. Assess Damage
3. Consider Probabilities
4. Assess Your Situation
5. Establish Priorities
6. Make Decisions
7. Develop Plan of Action
8. Take Action
9. Evaluate Progress



REMEMBER:
CERT SIZEUP IS A
CONTINUAL
PROCESS



Sizeup: Step 1

Gather Facts

- Time of event and day of the week
- Construction type/terrain
- Occupancy
- Weather
- Hazards



Sizeup: Step 2

Assess and Communicate Damage

The CERT mission changes if:

- Damage is light
- Damage is moderate
- Damage is heavy

Light Damage

- Superficial
- Broken windows
- Superficial cracks or breaks in wall surface
- Minor damage to the interior contents
- Safe to enter and remain



Moderate Damage

- Visible signs of damage
- Decorative work damaged or fallen
- Many visible cracks or breaks in wall
- Major damage to interior contents
- Building still on foundation
- Enter only to save lives



Heavy Damage

- Partial or total collapse
- Tilting
- Obvious structural instability
- Building off foundation



Do not enter a building with heavy damage under any circumstances

Sizeup: Step 3

Consider Probabilities

- How stable is the situation?
- What else could go wrong?
- What does it mean for the search and rescue?

Sizeup: Step 4

Assess Your Situation

- Is the situation safe enough to continue?
- What risks will rescuers face?
- What resources are needed?
- What resources are available?

Rescue Resources

- Personnel
 - Firefighters
 - Police
 - Nurse, M.D.
 - Contractor
- Tools
 - Crowbars
 - Auto jacks
 - Chainsaws
- Equipment



Sizeup: Step 5

Establish Priorities

- What should be done?
- In what order?
- How to rescue the greatest number in the shortest amount of time?



Sizeup: Step 6

Make Decisions

- Keep in mind:
 - Safety of CERT members
 - Life safety for victims and others
 - Protection of the environment
 - Protection of property

Sizeup: Step 7

Develop Plan of Action

- Focus operation on established priorities and decisions
- Provide for documentation to give to responding agencies
- Provide for documentation to become part of CERT records

Sizeup: Step 8

Take Action

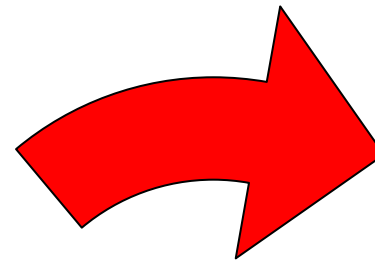
- Based on plan developed during Step 7



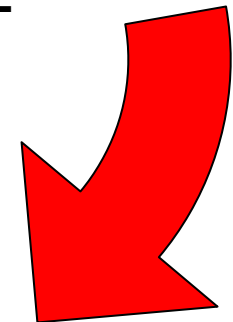
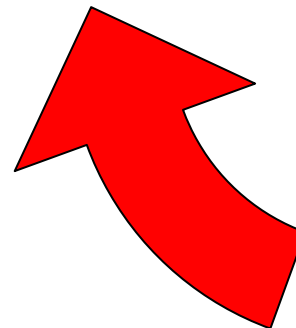
Sizeup: Step 9

Evaluate Progress

- Most critical step
- Monitor plan's effectiveness and safety



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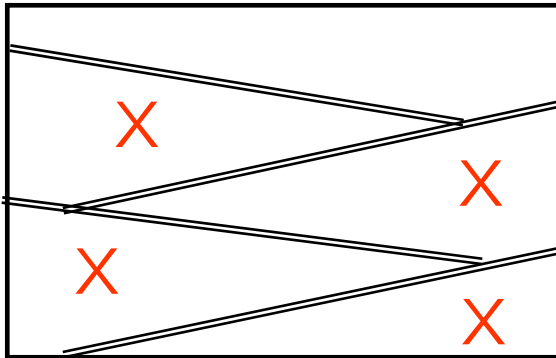


Specific Safety Considerations

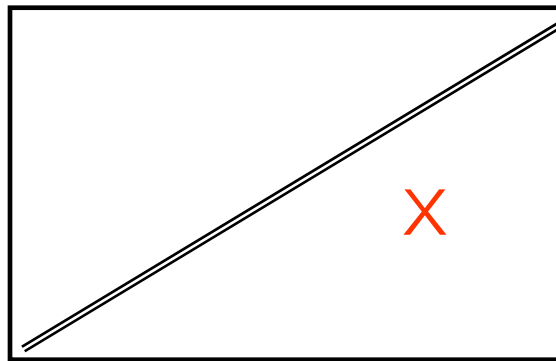


- Make rescuer safety primary concern
- Use a buddy system
- Be alert for hazards
- Use safety equipment
- Rotate teams

Structural Voids

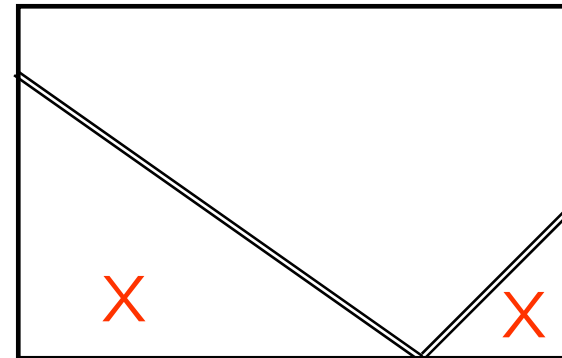


Pancake Void



Lean-to Void

If you see collapsed floors or walls, get out!



'V' Void

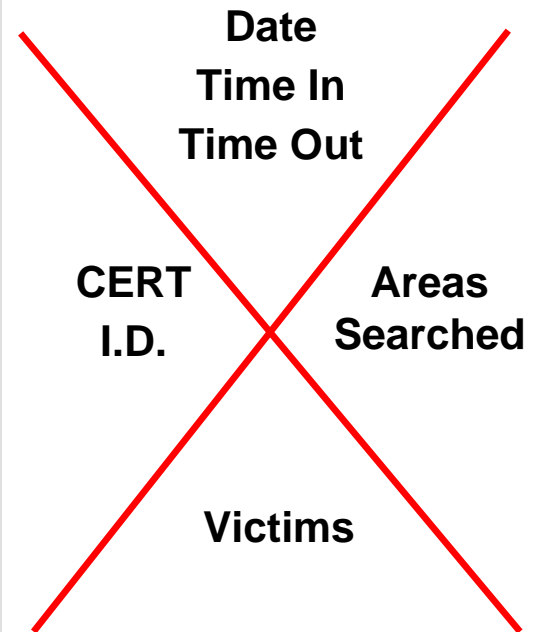
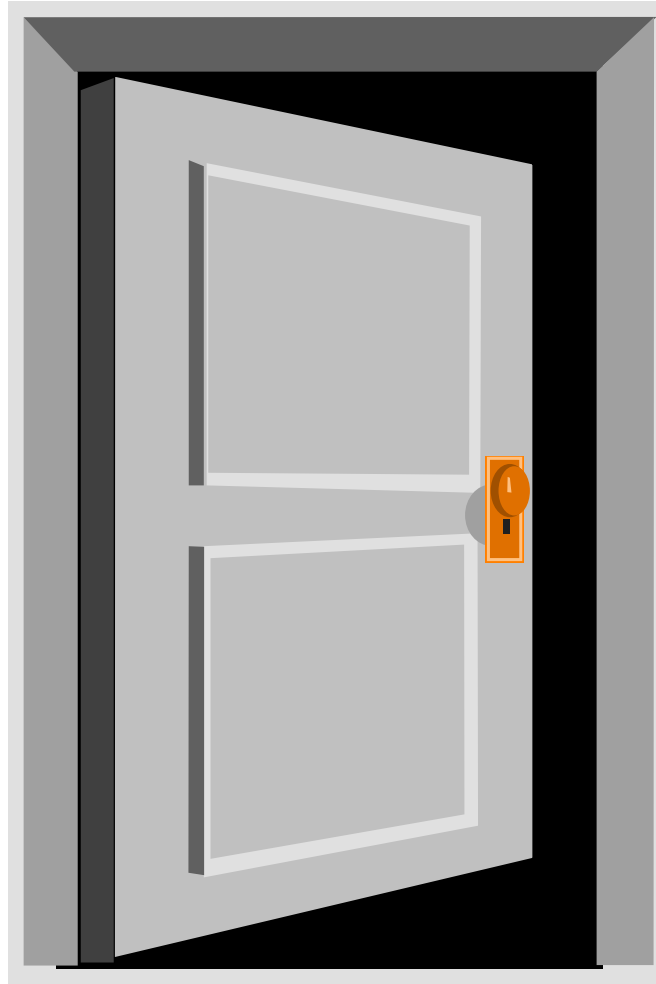
X = Voids

Individual Voids

- Spaces where victims may seek protection
 - Bathtubs
 - Underneath desks
 - Inside cabinets
 - Under/next to beds
 - Inside closets

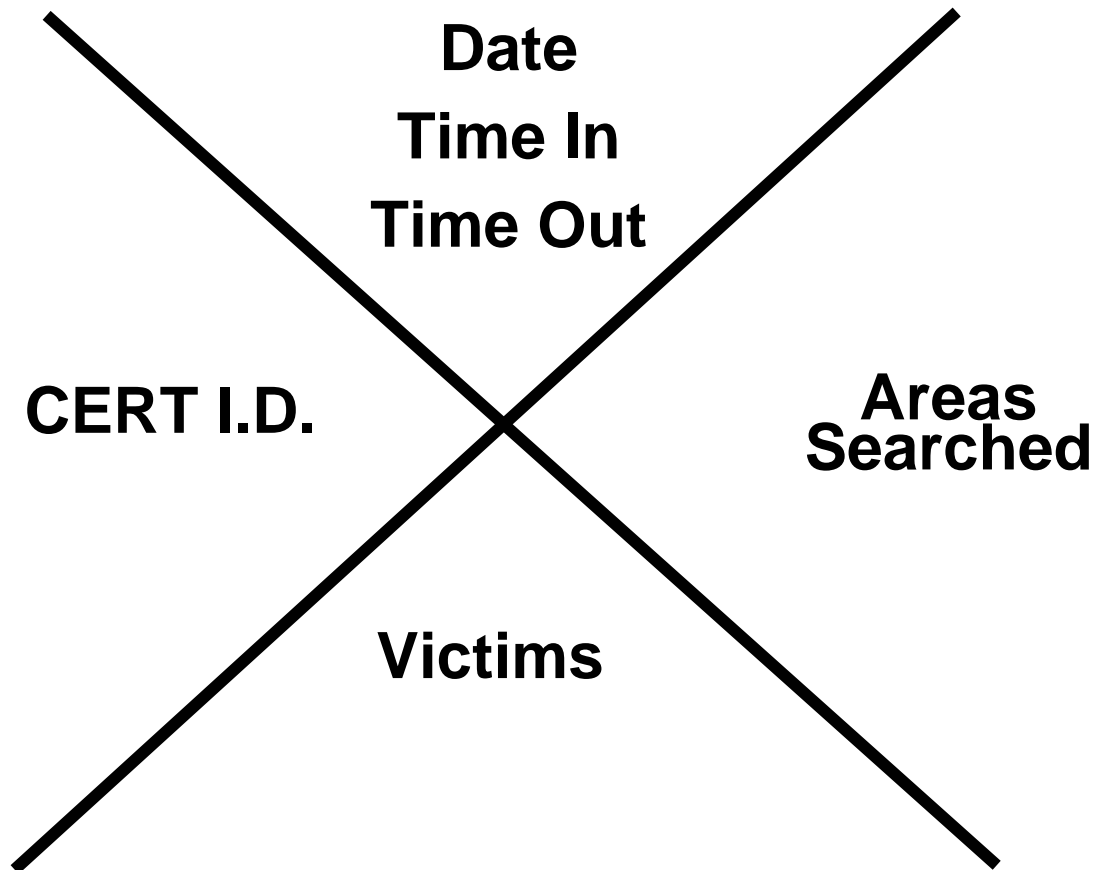
Search Markings

- Upon entering search area:
 - Make a slash
 - Enter info
- Upon leaving search area:
 - Complete 'X'
 - Enter info



Search Markings

What information do you mark?



Search Markings

Example:

2/15/08
In: 1430
Out: 1515

CERT-23

FL 1-2 searched
Stairs to FL-3 unsafe

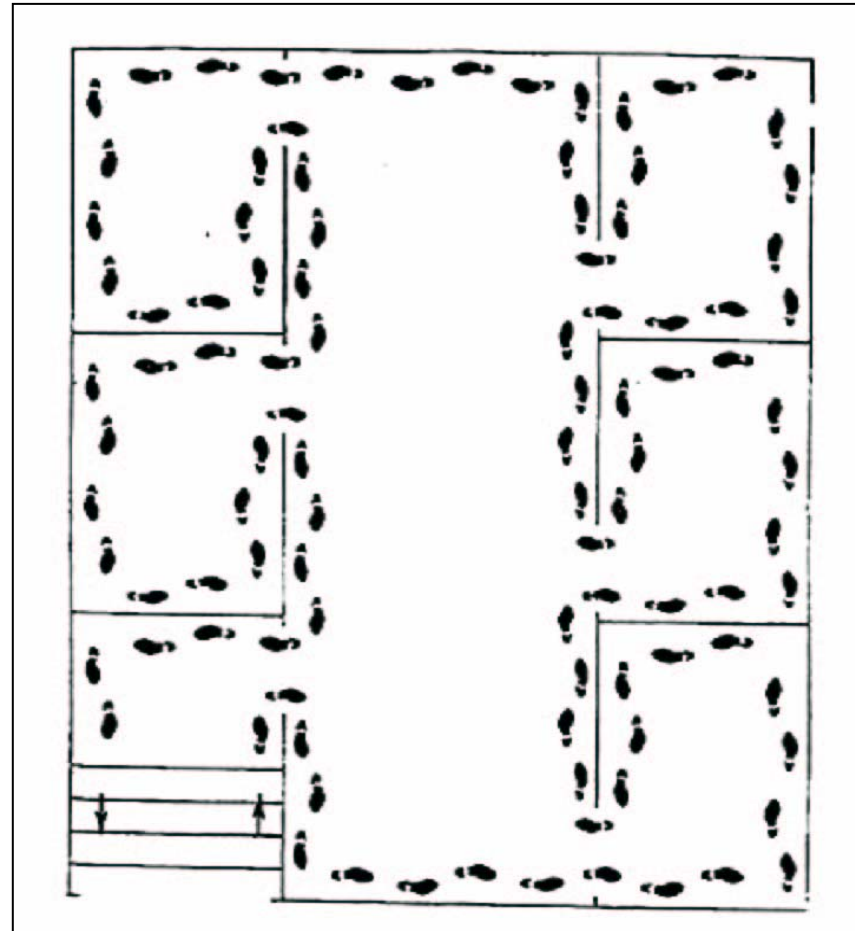
2L
Moved to
CERT-23 med
ops

Search Methodology

- Call out to victims, “If anyone can hear my voice, come here”
- Ask any victims who do respond for more information about the building or others who may be trapped
- Victims might be in shock or confused

Search Methodology

- Bottom-up/top-down for a multi-story building
- Right wall/left wall for a single floor
- Stop frequently to listen

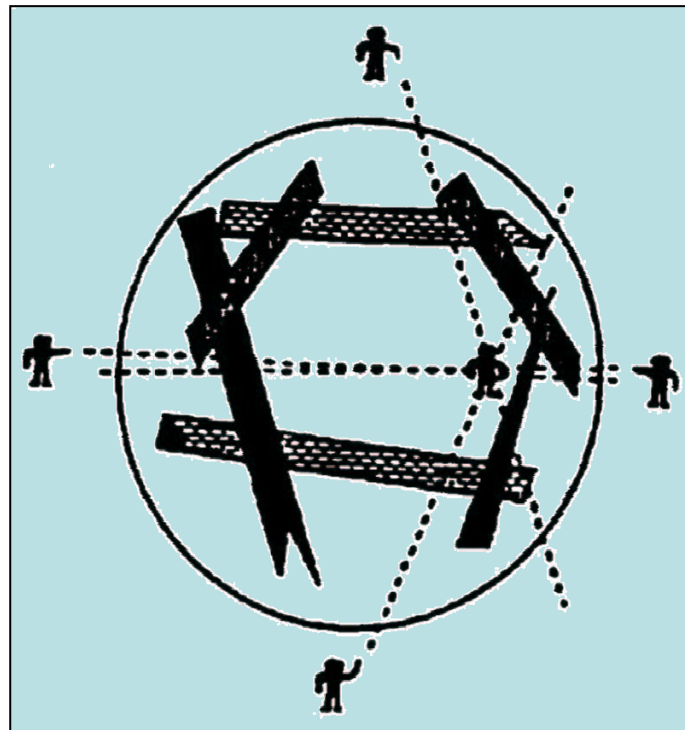


Search Methodology

- Stop frequently to listen for:
 - Tapping
 - Movement
 - Voices

Search Methodology

- Triangulation allows rescuers to view a location from several perspectives

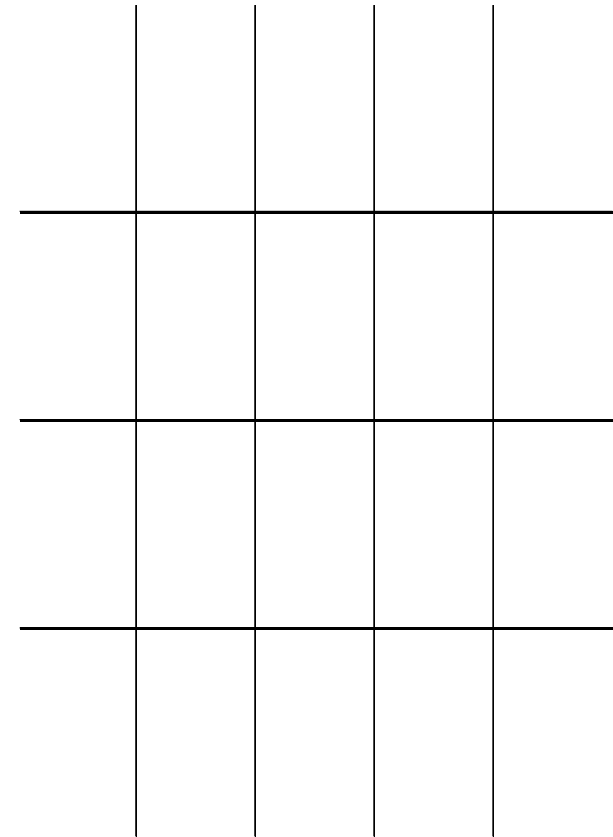


Search Methodology

- Keep records of rescued victims and of those who remain trapped or are dead
- Report information to emergency services personnel

Exterior Search

- Set up a grid search
 - Set distance between searchers according to visibility and debris
 - Overlap patterns for full coverage
 - Search in as straight a line as possible
 - Mark areas that have been searched



Rescue Operations

- Remove objects and debris to free victims and create safe rescue environment
- Triage victims
- Remove victims
- Remove debris



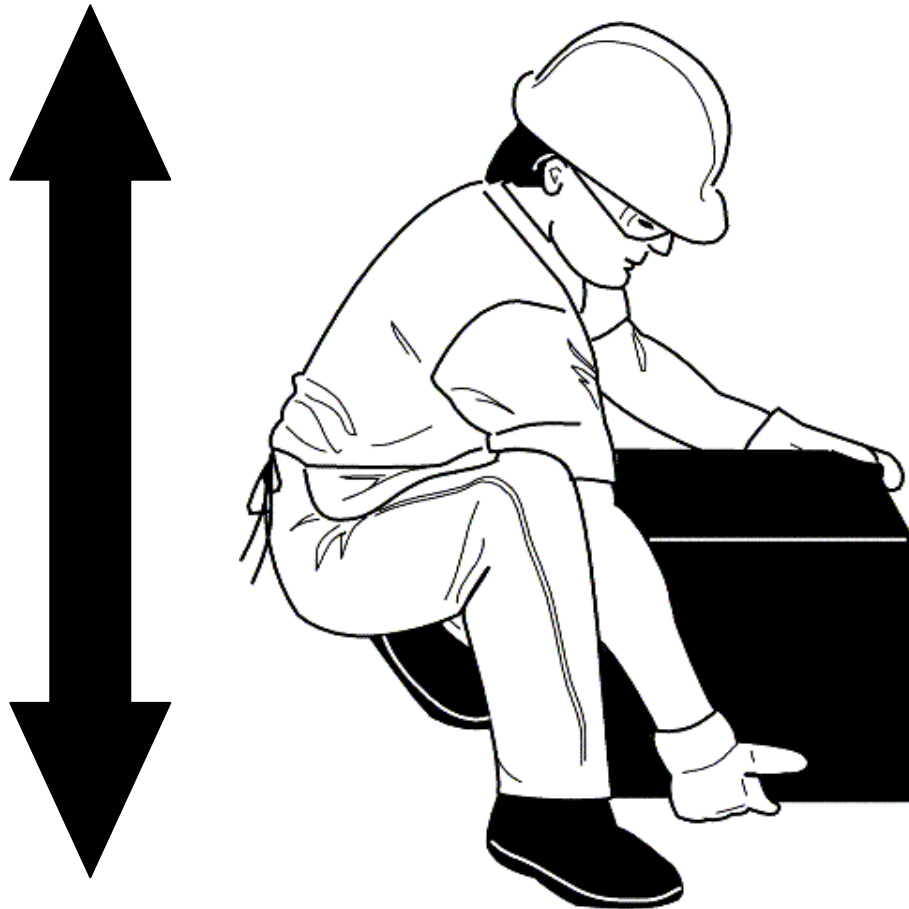
Creating a Safe Environment

- Maintain rescuer safety
- Triage in lightly and moderately damaged buildings
- Evacuate victims as quickly as possible

Precautions to Minimize Risk

- Know your limitations
- Follow safety procedures
- Remove debris by:
 - Leveraging
 - Cribbing

Proper Lifting Procedures



- Back straight
- Bend knees
- Keep load close to body
- Push up with legs

Leveraging and Cribbing



- For heavy lifting
- Performed in tandem
- Helps extricate victims

- Various materials and objects may be used

Two Types of Removal

- Self removal or assist
- Lifts and drags



Which Extrication Method?

- General stability of the immediate environment
- Number of rescuers available
- Strength and ability of the rescuers
- Condition of victim



One-Person Arm Carry

- Lift around victim's back and under knees
- Lift victim by keeping your own back straight and lifting with legs



Pack-Strap Carry



Two-Person Carry



Chair Carry



Blanket Carry



Log Rolling



Blanket Drag



Unit Summary

- You should know:
 - How to decide whether to attempt rescue
 - The objectives of interior and exterior search and rescue
 - How to perform search and rescue sizeup
 - Building markings
 - Rescue functions
 - How to remove debris
 - How to extricate victims

Homework Assignment

1. Read unit to be covered in next session
2. Bring necessary supplies to next session
3. Wear appropriate clothes to next session