Day Three: Solving Problems

Time Allowed

45 Minutes

Teaching Format

Troop presentation

Learning Objectives

As a result of this session, participants will be able to do the following:

1. Define the types of problems you leaders typically face
2. Describe how to determine the correct problem to solve
3. Classify problems using the Urgent—Important matrix
4. Apply Scouting America's 7-Step Problem-solving Process

Materials Needed

- Visual aid(s) developed by presenter
- Flip chart or white board plus markers
- Computer
- LCD projector and screen
- Appropriate sound system for presentation venue
- 15 pipe cleaners per patrol
- Solving Problems Patrol Exercise Worksheet (one copy per participant and one additional copy per patrol)

Recommended Presenter

NYLT staff member

Recommended Location

Troop assembly area

PRESENTATION OUTLINE

Opening Activity (8 min)

Give each patrol 15 pipe cleaners. Tell them their task: when you say "Go," they will have five minutes to build the tallest free-standing structure, using only the 15 pipe cleaners they have been given. Troop guides should monitor the patrols but not participate in order that they may lead a reflection of the activity at the end.

One minute after the presenter says "Go," pause the clock. Announce to the troop that some of their resources have been misplaced, and so they will all have to finish the project with one hand behind their backs. Restart the clock. Two minutes later, pause the clock again. Announce that the missing supplies have been found, and so they can use both their hands

again. Restart the clock. Let them know when 30 seconds remain. All stop working at the five-minute point.

Troop Guides should lead a short reflection with their patrols. Questions may include the following:

- How did you decide what to build?
- Was there a project leader? If so, how were they chosen?
- If there was no project leader, how might a leader make the group's efforts more successful?
- What did you think of the communication within your patrol? What did you do well? What might you do differently next time your patrol has to solve a team challenge?

Troop Guides should collect the pipe cleaners following the reflection so they don't become a distraction during the session.

Defining a Problem (10 min)

> ***Note:*** Guide participants to locate the Participant Notes sheet for this session in the Participant Notebook. Encourage them to be taking note of key words, key points, and their top three takeaways from the session.

Albert Einstein once said, "If I had one hour to solve a problem and my life depended on the solution, I'd spend 55 minutes defining the problem and 5 minutes thinking about solutions." Let's think about that for a minute. Ask the group, "What did he mean?" Take 3–4 answers from the group. *(No need to write them down.)* As we will discuss in a few minutes, the biggest challenge leaders face when dealing with a problem is identifying and then defining the correct problem.

But first, let's define what a problem is.

Ask the group to define "problem." Again, take 3–4 answers from the group. The one you are looking for is: "A situation that requires a decision or a solution; a question needing consideration or inquiry." *(Merriam-Webster Dictionary)* If one of the Scouts' answers is close to that textbook answer, recognize that Scout and have them repeat their answer for the troop to hear.

Problem-solving, then, is the process of making the decision or finding a solution.

> ***Presentation Suggestion****: Have a flip chart or PowerPoint slide prepared that lists the five types of problems. Show it as you discuss the types.*

As youth leaders, we face different types of problems, some of them every day and others only once in a great while. The different kinds of problems include the ones listed here. Let's take a minute to describe what we're talking about.

Simple or complicated (difficulty)

- Some problems are easy and don't require much effort to solve, while others are complicated or difficult and will require research, analysis, and choices to arrive at a solution.
- Problems involving human feelings normally require empathy and compromise.

Important or trivial (criticality)

- Problems fall on a range of importance. Good leaders recognize the importance of the problem is relative to all the other aspects of one's life, responsibilities, desires, and needs, and therefore treat the problem accordingly.

Urgent or nonurgent (immediacy)

- Like importance, not all problems are immediate. When faced with multiple problems, good leaders consider the immediacy of the problem when determining when and how to address the challenge.

Routine or unexpected (certainty)

- Routine problems are those we have anticipated, planned for, and practiced dealing with. Unexpected problems, though, can derail a plan and disrupt a team's development.

Personal or team (breadth)

- Problems may be individual or may involve others. The problem-solving process should remain about the same, but if the problem is a team's, then good leaders are collaborative, inclusive, and empowering.

Seven Steps to Problem-solving (5 min)

Now that we have an idea about the types of problems we deal with as youth leaders, let's talk about the process for solving problems. Scouting America uses the 7-Step Problem-solving Process shown here. I'll explain.

> ***Presentation Suggestion****: Have a flip chart or PowerPoint slide prepared that lists the seven steps. Have it displayed as you discuss them.*

1. **Identify the problem.**

- Is there a problem?
- What exactly is the problem?
- Why solve the problem?
- Does the problem have a deadline?

2. **Brainstorm solutions.**

    - Assume there is more than one solution.
    - Develop alternatives.
    - Reframe the question. Would a different question achieve the same desired outcome? *(**Note**: This is a call to be creative an innovative during problem-solving—do the unexpected.)*

3. **Evaluate options.**

    - Are there limits on time, cost, number of people, location, etc.?
    - Rank order the options based on defined criteria.
    - Rank order the options based on affective criteria (i.e., emotion, feeling, perception, bias).

4. **Make a decision.**

    - Commit to a solution (which can be a combination of options).
    - Ensure the chosen solution does not generate future or additional problems.

5. **Make a plan.**
6. **Implement the plan.**
7. **Get feedback and be flexible.**

> ***Note**: These last three steps are also part of Planning and were, therefore, covered in that session on Day Two.*

The last three steps are self-explanatory and just need to be stated. Remind participants that because they overlap with the 7 Steps of Planning which were covered in the Planning session on Day Two.

As promised at the beginning, though, the single biggest challenge leaders face is identifying the correct problem to solve, making Step 1 of this process the hardest step.

The 5 Whys (7 min)

This is an iterative process of asking why a condition exists, rather than taking the stated problem at face value. Participants generate multiple answers/conditions asking why those conditions exist, and continuing until reaching a root cause. Let's use an activity to demonstrate what we mean.

Tell the troop, "At the October patrol leaders' council meeting, the Scoutmaster asks the troop leadership the following question, 'Since we returned from summer camp, attendance at weekly troop meetings has dropped by about a third, from 45 Scouts to 30. Only half of the older (15–16 years old) Scouts are coming to meetings or the monthly camping trips now. How do we solve our attendance problem?'"

Ask the troop, "What is the problem?"

- Answer should be, "We have low attendance at our troop meetings." *(SM said that is what the problem is.)*

Ask the troop, “WHY?” Write 4–5 of their answers on the whiteboard or flip chart.

- Three of the older Scouts joined a different troop.
- Four Scouts earned Eagle and quit because they have part-time jobs or are doing fall sports.
- It rained a lot at summer camp, and some of the new Scouts don’t think Scouting is fun.
- Four of the new Scouts joined a different troop.

Pick one of their answers, and again ask, “WHY?” Why did four of the new Scouts join a different troop?

- The other troop has more older Scouts involved in leading the troop.
- The other troop has a program to help Scouts pay for Scouting.
- The other troop’s meetings are fun.
- The other troop goes to better places for weekend campouts.

Again, pick one of their answers and ask, “WHY?” Why do many of the older Scouts continue to stay active as leaders in the other troop?

- Other troop has adult leaders who sponsor high adventure things (rock climbing, kayaking, ski trip, backpacking).
- Other troop offers some exciting and uncommon merit badge opportunities—Space Exploration, Aviation, Game Design, Archaeology, Exploration, Inventing, Robotics, etc.
- Other troop’s meetings are organized and have a variety of games, advancement, and opportunities, like those found in Scouting America’s *Program Features for Troops and Crews.*

After three iterations of WHY, have the participants changed their minds about what their troop’s problem really is? *(They should have.)*

Could it be that the dropping and low attendance is really a symptom of a different problem? Could the problem be that their troop’s program has become tired and stale (nothing new or exciting)? Maybe there are no activities geared toward older Scouts? Could the PLC add fun and excitement to meetings by using ideas from *Program Features*?

Urgent versus Important (5 min)

> ***Presentation Suggestion****: Have the X (Urgent) and Y (Important) axes prepared ahead of time. As the presenter discusses the matrix, write in the quadrant names.*

Leaders, Scouts, and mere mortals have lots of decisions to make and problems to solve every day. It is part of life. The challenge, then, is determining how much time and energy to give to all the different decisions we need to make and problems we need to solve because, as we all know, we only have so much time and energy to give.

Effective leaders know to prioritize their efforts. One successful way to do this is using a matrix first proposed by General Dwight Eisenhower, the commander of Allied forces during the D-Day invasion of occupied Europe. He later served as the 34th President of the United

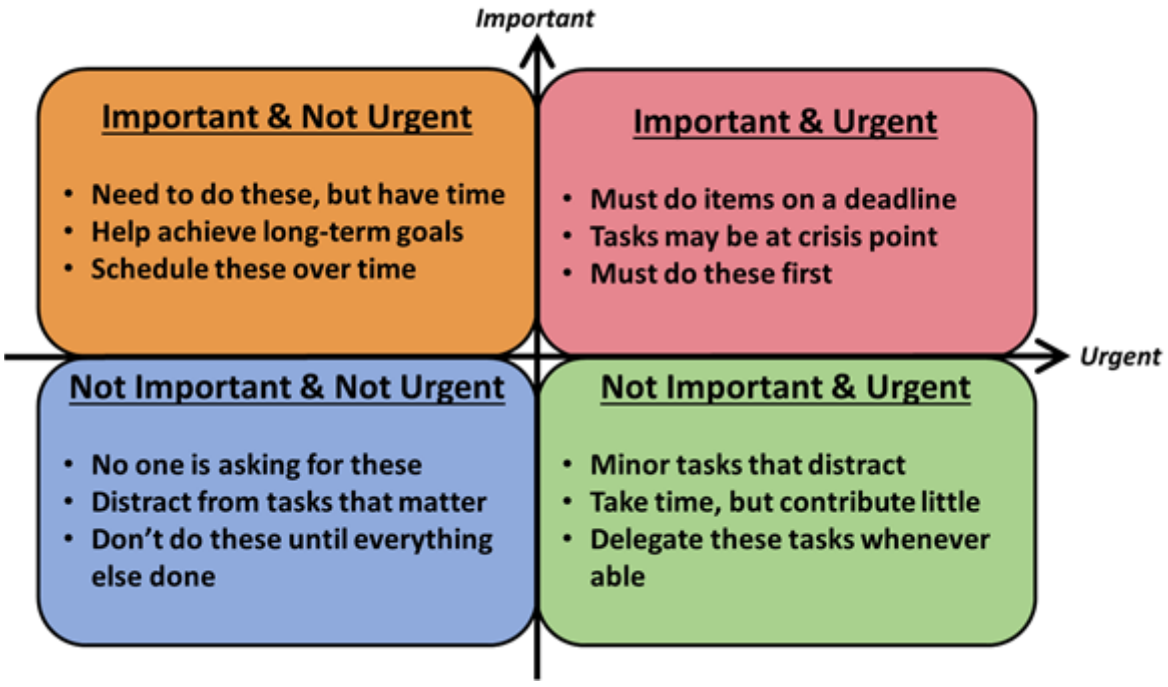
States. Eisenhower was never a Scout himself, but he became a huge and lifelong supporter when his son became a Scout in the 1930s.

The matrix we're going to use considers each problem or decision's importance to the team or person's success and the urgency required for a response.

- The highest priority problems or decisions are those that are both important and urgent, perhaps because the deadline is approaching or because they are already crises. They belong in the upper right. Normally, about 20% of our problems and decisions fall into this category.
- The least important decisions are those no one is asking for. These can be put off until everything else is done. Those go in the bottom left.
- In the middle are the categories of important but not urgent, and urgent but not important.

This is where leaders need to define their own and their team's priorities. Importance is defined in terms of school, family, your troop or crew, sports, clubs, etc. Urgency is often a function of external factors, such as the deadlines and timelines set by others.

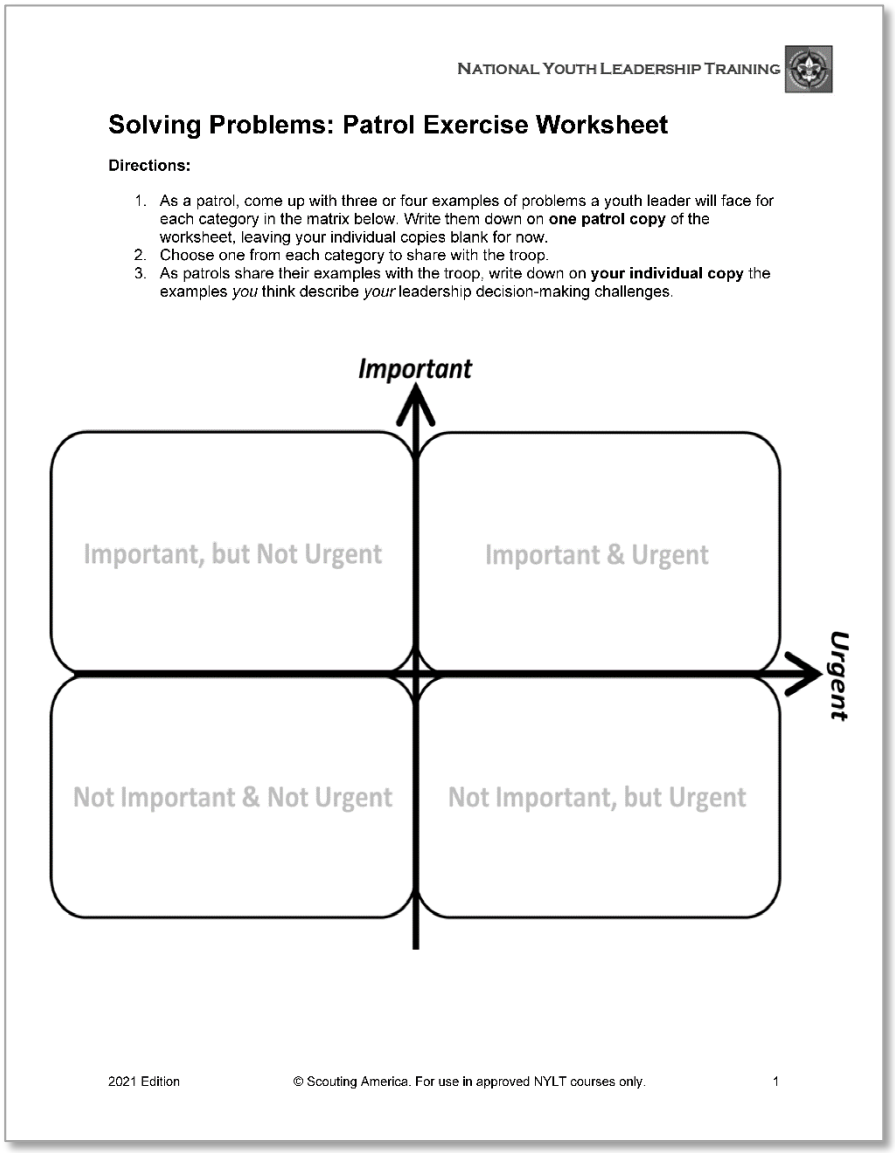
- **Important but not urgent** issues are long-term decisions that must be made but that can be delayed and scheduled over time. Successful leaders spend most of their energy in this quadrant because they are getting ahead and making decisions about future events.
- **Urgent but not important** issues are those minor tasks that distract from the important work. They take time but contribute little to success. Effective leaders minimize the time they spend in this quadrant, although they sometimes have no choice. If a friend interrupts you studying, a short break may be okay, but remember, it disrupts your other priorities for the day, so you need to get back on schedule.



Patrol Activity (8 min)

Distribute copies of the Solving Problems Patrol Exercise Worksheet to the troop. Provide one copy for each Scout and an additional copy for each patrol.

- Ask the patrols to discuss among themselves and come up with three or four examples of problems a youth leader will face for each category. Have them enter them in the **patrol copy** of the blank matrix.
- After 5 minutes, ask each patrol to share one example from each of their categories. Encourage the rest of the troop to use their own **blank matrices** to write down the examples *they* think describe their *individual* leadership decision-making challenges.
- After every patrol has provided one example for each quadrant, offer the troop the opportunity to add additional good examples that were not brought up during the sharing.
- Thank the patrols for their answers.



NATIONAL YOUTH LEADERSHIP TRAINING

Solving Problems: Patrol Exercise Worksheet

Directions:

1. As a patrol, come up with three or four examples of problems a youth leader will face for each category in the matrix below. Write them down on **one patrol copy** of the worksheet, leaving your individual copies blank for now.
2. Choose one from each category to share with the troop.
3. As patrols share their examples with the troop, write down on **your individual copy** the examples *you* think describe *your* leadership decision-making challenges.

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Emergency Problem-solving (5 min)

Emergency problem-solving can occur when a team must come up with a solution to a problem very quickly. For example:

> You are on a mountain trail hiking with your patrol. Your plan is to reach the lake and camp overnight. It is late afternoon, and you are five miles from the nearest road when a member of your patrol trips over a rock and takes a bad fall. You examine him and find he has injured his ankle, perhaps has even broken it. What do you do? The person who fell and broke his ankle is also lying in a cold stream.

The patrol leader may need to make a quick call. Even though there is little or no time for discussion, the problem-solving process is the same.

The patrol leader (or the person with the best first aid skills) directs the rest of the patrol, telling them:

- **Identify the Problem.** The injured person must be moved out of the stream to prevent further injury. The team must stabilize the ankle during the move.
- **Develop a Workable Solution.** In an emergency, there is rarely time for brainstorming and working through the multiple iterations of options and alternatives. Some patrol members will stabilize the ankle while others lift the victim to a safe spot.
- **Make a decision and plan the solution.** Decide the order in which each step will be done.
    - First, prepare the place to put the victim.
    - Second, stabilize the ankle.
    - Third, get ready to move him.
    - Fourth, move the victim to safety.
    - Fifth, begin first aid treatment.
- **Assign Responsibilities.** Who is responsible for each step? “Everyone grab a towel from your backpack, and give it to Will. Will, get your foam pad from your pack and spread it on the ground right there. Kai and Aiden, you use another foam pad to support his leg and foot so that his ankle doesn’t move. The rest of you, space yourselves along either side of his body, and get a firm grip on his clothing. Tell me when you are ready. When I count to three, everybody lift together, and move him to the safe spot. Remember, everybody, please lift with your legs, not your backs.”

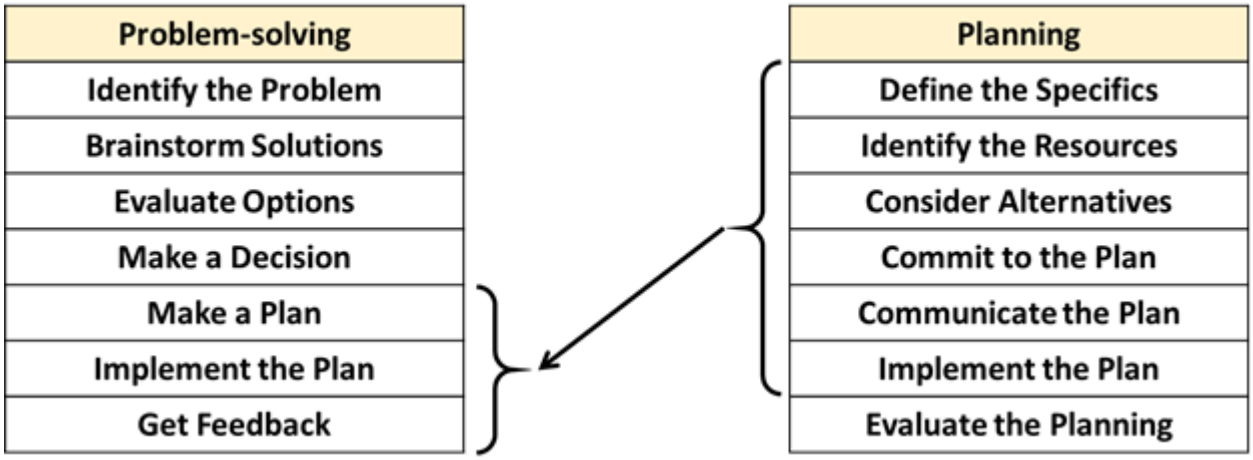
Leader Responsibilities

In emergency problem-solving, a leader directing a team toward a solution should try to stay a step back from the action. The leader needs to maintain an understanding of the big picture. If the leader gets involved in one step—for instance, stabilizing the injured person’s ankle—they are no longer free to view and direct everything else that is happening. Advanced first aid training reminds team leaders to “Don’t just do something . . . Stand there!” This applies to nearly every emergency situation. The leader needs to stay focused on providing the leadership the situation requires.

Problem-solving versus Planning (1 min)

> ***Presentation Suggestion:*** Presenter may want to have a poster available that shows the overlap between *problem-solving* and *planning*.

Problem-solving is related to, but not the same as, planning. Problem-solving is about making a decision or finding a solution. As the graphic shows, planning usually results from the decision. Scouting America's 7-Step Planning Process is an expansion of the last three steps of Scouting America's 7-Step Problem-solving process.



Conclusion: Solving Problems Round-robin (1 min)

Conclude this session by describing the Solving Problems Round-robin that is about to begin. Whatever the challenge (or series of challenges), it should involve collaboration among everyone in the patrol to come up with a solution and then to make it happen. Encourage patrols to use the 7-Step Problem-solving Process to guide their efforts.

Remind participants to take a moment to ensure they have noted their top three takeaways in their Participant Notes for this session.

Day Three: Solving Problems Round-robin

Time Allowed

45 Minutes

Teaching Format

The round-robin is made up of the same number of events as there are patrols in the course. Patrols rotate through the events, spending 6–8 minutes at each station. Patrols will only be able to complete five or six of the activities given the allotted time. A youth staff member at each station will use effective communication skills to explain the problem-solving situation and provide patrol members with the materials they need. When appropriate, they will offer additional guidance to allow patrols to complete an event. They also will monitor activities to ensure that activities are conducted in a safe manner. NYLT staff members have the authority to stop any activity they feel is unsafe or inappropriate.

Wherever needed, NYLT staff will serve as spotters. A course staff member acts as timekeeper, sounding an alert at the end of each 6–8-minute segment that patrols should move on to the next events.

Learning Objectives

As a result of this session, participants will be able to do the following:

1. Put into action the principles they have learned about planning and problem-solving.
2. Practice teamwork, including identifying their patrols' stage of development.
3. Have fun, especially as a patrol.

Materials Needed

- Every activity in the round-robin has its own requirements for materials. See the descriptions below.

Recommended Presenter

- Youth staff will present the problem-solving challenges.
- Patrol leaders will provide leadership as their patrols tackle the challenges.

Recommended Location

Troop assembly area or other suitable location

Recommended Facility Layout

Each event of the round-robin requires enough space for participants to engage in the activities without feeling cramped, though the sites should be close enough to one another for patrols to move quickly from one event to the next.

NYLT staff members will take responsibility for setting up the events well in advance of the round-robin and for ensuring that all the materials are on hand.

PRESENTATION OUTLINE

Introduction

Each event of the Solving Problems Round-robin has its own presentation procedure. See the descriptions below for details. Staff members may choose which of the events they would like to use from those described below.

Trolley (6–8 min)

The Trolley is a traditional Scouting challenge course problem that requires the utmost in teamwork for a patrol to succeed.

Equipment

- Two 2 x 6-inch boards, each 10 to 12 feet long and each having 2 ½–3-foot lengths of rope attached to it at 1-foot intervals

Preparations by the Instructor

1. Mark the start and finish points of the trolley course.
2. Inspect the condition of boards and ropes.
3. Place the trolley at the starting point.

The Problem and Objectives

While standing with one foot on each of the two boards that make up the trolley, patrol members grasp ropes attached to each board and then synchronize their movements to propel the trolley the length of a prescribed course. Patrols must follow these rules:

1. Once the trolley begins to move, participants may not touch the ground.
2. A time penalty will be assessed whenever a participant steps off the trolley.
3. Trolley sections may not be placed end-to-end or on top of each other.

Tasks of the Instructor

1. Explain the problem and objectives to each patrol. Clarify the rules before the patrol begins its problem-solving.
2. Monitor the activities of each patrol.
3. After a patrol completes this task, encourage them to use SSC (Start, Stop, Continue) to discuss the strengths and weaknesses of their problem-solving methods and to consider other ways they might have achieved their goal.

Safety Precautions to Consider

Use a smooth, level area for this problem.

Variations on the Original Problem

Challenge patrols to traverse the trolley course backwards.

Stepping Domes (6–8 min)

Equipment

- A set of 24 to 48 hard, plastic domes, about 8 inches in diameter and 3 ½ inches high (Provide about six domes for every three participants.)

Preparations by the Instructor

Place the domes on level ground, and position them a comfortable stepping-distance apart.

The Problem and Objectives

Each participant steps across a series of hard plastic domes without touching the ground or floor. The idea is to teach participants how to balance and to learn some of the basic moves for climbing. This is a great indoor activity for a rainy day.

Start by having each participant in turn step across a series of five to seven domes. When participants have demonstrated success, space the domes a little farther apart. Next, lay the domes out in a zigzag pattern, causing participants to shift their weight from one foot to the other. Then place a tennis ball or other easily grasped object near one of the domes so that participants must squat down while maintaining balance on the domes. Finally, place a more difficult item to grasp a little farther away from the domes so that participants must reach for it while maintaining balance on the domes.

Tasks of the Instructor

1. Inspect each dome to make sure it is not cracked. Stand on each one to ensure that it will hold up under full weight.
2. After a patrol completes this task, encourage them to use SSC (Start, Stop, Continue) to discuss the strengths and weaknesses of their problem-solving methods and to consider other ways they might have achieved their goal.

Safety Precautions to Consider

1. Clear the area of obstructions.
2. Have participants test to see that their footwear will not easily slip while stepping on the domes.
3. Use spotters as needed.
4. Avoid muddy or damp areas that could cause players to slip and fall.

Variations on the Original Problem

1. Have participants begin from opposite directions and cross in the middle of the series of domes.
2. Allow participants to help one another across the domes.
3. Set up several series of domes with varying difficulty, and let the group choose its challenge.

Brownsea Island Turnaround (6–8 min)

A patrol on Brownsea Island is asked to help conserve the area by rotating its campsite. Because of the small size of Brownsea, the most appropriate solution is to flip over the entire island.

Equipment

- A durable tarp, retired tent fly, drop cloth, or sheet of plastic approximately 5 x 5 feet in size

Preparations by the Instructor

Spread Brownsea Island (the tarp) flat on the ground in an area free of obstructions.

The Problem and Objectives

The entire patrol stands on Brownsea Island. Without stepping into the “water” surrounding the island, patrol members must figure out a way to flip over the island and spread it out again so that they can stand comfortably on the other side. Patrols must follow these rules:

1. All patrol members must remain on Brownsea Island for the duration of the challenge.
2. No participant may be lifted above shoulder height.

Tasks of the Instructor

1. Explain the problem and objectives to each team. Clarify the rules before the patrol begins its problem-solving.
2. Monitor the activities of each patrol.
3. After a patrol completes this task, encourage them to use SSC (Start, Stop, Continue) to discuss the strengths and weaknesses of their problem-solving methods and to consider other ways they might have achieved their goal.

Safety Precautions to Consider

“Brownsea Island” should be placed on smooth ground in an area free of obstructions.

Mafeking Message Machine (6–8 min)

Equipment

- 10 to 12 “message tubes” (Form the tubes by cutting PVC tubing into lengths of 18 to 24 inches. The tubing should have a diameter of at least 2 inches—large enough for golf balls to roll easily through it. Add variety by attaching PVC elbow joints to one or both ends of several of the message tubes.)
- Golf balls

Preparations by the Instructor

1. Determine the starting point and destination of the message.
2. Pile the message tubes near the starting point.

The Problem and Objectives

The patrol members are serving under the command of Baden-Powell during the siege of Mafeking. In his usual clever way, B-P has concealed a highly sensitive message inside a golf ball and has asked the patrol to deliver it to a certain location. Using the message tubes, the patrol members are challenged to form a Mafeking Message Machine to convey the message to its destination.

The instructor starts the message (the golf ball) on its way by placing it in the end of the message tube held by one of the participants. Patrol members must then arrange themselves in such a way that they can roll the message from one tube to the next until it arrives at its goal. They do so according to the following rules:

1. Patrol members cannot touch the ball. (That would leave telltale fingerprints.)
2. A patrol member who has the ball inside a message tube cannot move their feet until the ball has passed into another message tube.
3. The ball must remain hidden in the message tubes. (The Boers are watching with their binoculars.)
4. At no time can the ball touch the ground. (Nobody but Baden-Powell knows why—it’s just a rule.)

Tasks of the Instructor

1. Explain the problem and objectives to each patrol. Clarify the rules before the patrol begins its problem-solving.
2. Monitor the activities of each patrol.
3. After a patrol completes this task, encourage them to use SSC (Start, Stop, Continue) to discuss the strengths and weaknesses of their problem-solving methods and to consider other ways they might have achieved their goal.

Safety Precautions to Consider

None

Variations on the Original Problem

The problem can be made more difficult by placing the destination of the message uphill from its spot of origin. Patrols also will find the problem more difficult if they must solve it in silence.

Nail-biters Nightmare (6–8 min)

Equipment

- Two dozen large nails
- A piece of wood, about 4 by 6 inches, with a large nail set upright in the center

Preparations by the Instructor

On a level, roomy workspace, set out the wood with the upright nail and, beside it, the pile of large nails. A sturdy picnic table is an ideal location for this activity.

The Problem and the Objectives

The problem is very simple—arrange as many large nails as possible on the head of the upright nail. In doing so, participants must follow these rules:

1. The large nails can touch only the upright nail and/or one another.
2. The large nails may not touch the board.

Tasks of the Instructor

1. Explain the problem and objectives to each patrol. Clarify the rules before the patrol begins its problem-solving.
2. Monitor the activities of each patrol.
3. After a patrol completes this task, encourage them to use SSC (Start, Stop, Continue) to discuss the strengths and weaknesses of their problem-solving methods and to consider other ways they might have achieved their goal.

Safety Precautions to Consider

None

Variations on the Original Problem

The original problem is sufficiently difficult. There are, however, a surprising number of variations in workable solutions.

Spider Web (6–8 min)

Equipment

- A grid-shaped web made of parachute cord stretched between two trees, posts, or other stationary standards. The web can be of any width (10 feet is a good size) and must be no more than 5 feet high. The openings in the grid are of various sizes; each of them must be large enough for a person to pass through. Openings should be of varying sizes.

Preparations by the Instructor

Set up the web. This is the most complicated preparation of any of the stations that will be used during the Solving Problems Round-robin. All of the station instructors can cooperate to build the web before the session and to test it for durability and the appropriateness of the challenge.

The Problem and the Objectives

On a hike, the patrol finds its way blocked by the spider web. Patrol members must cooperate to get the entire patrol to the other side of the web. While doing so, participants must follow these rules:

1. No one can touch the web.
2. Each opening in the web can be used only once for passage. After a participant has gone through an opening, no one else can use the same opening.
3. If any participant is lifted off the ground by other patrol members, that participant must be protected from falling.

Tasks of the Instructor

1. Explain the problem and objectives to each patrol. Clarify the rules before the patrol begins its problem-solving.
2. Monitor the activities of each patrol. Act as a spotter to help protect any participant lifted off the ground.
3. After a patrol completes this task, encourage them to use SSC (Start, Stop, Continue) to discuss the strengths and weaknesses of their problem-solving methods and to consider other ways they might have achieved their goal.

Safety Precautions to Consider

Patrol members must plan their moves through the web so that any participants who are lifted to pass through openings higher on the web can do so safely.

Variations on the Original Problem

Invite patrols to remain silent while addressing the problem.

Human Knot (6–8 min)

Equipment

None

Preparations by the Instructor

Select a flat area free of obstructions.

The Problem and the Objectives

Patrol members stand in a tight circle. They reach into the center of the circle with both hands and, with each hand, grasp the hand of another patrol member, thus forming a human knot.

Maintaining their grasps, participants untie the knot by moving over, under, and around one another. The utmost of cooperation will be required for participants to visualize the moves that must occur and then to carry them out.

Tasks of the Instructor

1. Explain the problem and objectives to each patrol. Clarify the rules before the patrol begins its problem-solving.
2. Monitor the activities of each patrol.
3. A patrol sometimes forms a knot that cannot be fully untied or reaches a point where it is physically impossible to continue a particular solution. In either case, the instructor may change the grasp of one or several participants or may restart the challenge by having the patrol form a new human knot.
4. After a patrol completes this task, encourage them to use SSC (Start, Stop, Continue) to discuss the strengths and weaknesses of their problem-solving methods and to consider other ways they might have achieved their goal.

Safety Precautions to Consider

Participants must move deliberately to minimize the possibility of injury.

Variations on the Original Problem

The original problem is sufficiently difficult.

Team Pen (6–8 min)

Equipment

- A large sheet of paper for each patrol
- A large marker (like a highlighter marker) that has a 24-inch piece of string tied around it (or taped to it) for each patrol member. (The number of strings tied around the marker should equal the number of patrol members.)

Preparations by the Instructor

The only preparation is to have the sheets of paper and to prepare the marker(s) with the strings. (Each patrol may need its own marker if patrols are of different sizes.)

The Problem and the Objectives

1. The patrol members must work together to collectively write a word that is provided by the instructor using the "team pen."
2. The instructor will give each patrol a word to write on the piece of blank paper.
3. The patrol members will have to navigate the pen together to write the word.
4. Instructors should start out with easy and short words at first but then can increase the difficulty.
5. The best part of this activity is seeing what the word ends up looking like once the patrol members are done.

Tasks of the Instructor

1. Explain the problem and objectives to each patrol. Clarify the rules before the patrol begins its problem-solving.
2. Monitor the activities of each patrol.
3. After a patrol completes this task, encourage them to use SSC (Start, Stop, Continue) to discuss the strengths and weaknesses of their problem-solving methods and to consider other ways they might have achieved their goal.

Safety Precautions to Consider

No extraordinary safety precautions for this activity

Variations on the Original Problem

Invite patrols to remain silent while addressing the problem.

Balloon Pyramid Construction (6–8 min)

Equipment

- A balloon for each patrol member (balloons will not be reusable by any other participants)
- Plastic drinking cups that have dimensions that make them stackable with each other. There should be one or more cups per patrol member (the number depends on the stacking configuration that the patrols are instructed to construct).

Preparations by the Instructor

The instructor needs to know the different stacking/pyramid shapes that they want the patrols to construct using the plastic drinking cups.

The Problem and the Objectives

1. The patrol members must work together to construct different pyramid shapes or other stacking configurations using the plastic drinking cups.
2. Each patrol member is given an individual balloon that they must use to move the plastic drinking cups. The patrol member inflates and deflates the balloon using their breath.
3. Patrol members inflate and deflate their balloons while the balloons remain in their mouths. Participants are not allowed to use their hands in constructing the pyramid or other shape.
4. Patrol members must inflate their balloon within the inside of the plastic drinking cup in order to be able to “pick up” the cup and then release their breath (to deflate the balloon) to place the cup in the desired location.
5. Instructors can tell the patrol that the pyramid or other shape must be constructed within a set amount of time.

Tasks of the Instructor

1. Explain the problem and objectives to each patrol. Clarify the rules before the patrol begins its problem-solving.
2. Monitor the activities of each patrol.
3. After a patrol completes this task, encourage them to use SSC (Start, Stop, Continue) to discuss the strengths and weaknesses of their problem-solving methods and to consider other ways they might have achieved their goal.

Safety Precautions to Consider

Ensure that the balloons that are used for the activity are easily inflated. Accommodations may need to be made for participants that have health conditions that prevent them from inflating a balloon.

Variations on the Original Problem

Invite patrols to remain silent while addressing the problem. Set a time limit for constructing the shape or decrease the time limit.