

Trailforge — Activity Book

A Spark & Anvil activity book — puzzles, questions, and fun from Trailforge.

Write in the book, circle your answers, and check the Answer Key at the back.

1. Shelter Building Basics

Circle the correct answer

1. What type of natural material is best for creating an insulating layer inside a debris shelter?

- (A) Wet moss from tree trunks (B) Smooth river rocks (C) Green grass clippings
(D) Dry leaves and pine needles

2. Which part of a tree provides the strongest poles for building a shelter frame?

- (A) Dead hardwood branches that are still attached to the tree (B) Rotting logs found on the forest floor (C) Flexible vines hanging from tree canopy (D) Thin green saplings pulled from the ground

3. Why is bark from birch trees often used in wilderness survival shelters?

- (A) It is naturally waterproof and peels off in large sheets (B) It burns too slowly to be useful for anything else (C) It attracts beneficial insects that keep mosquitoes away (D) It is the softest bark available in any forest

4. When gathering materials for a lean-to shelter, how should you test whether a ridgepole branch is strong enough?

- (A) Hold it up and see if it looks straight (B) Measure its length against your arm span (C) Smell it to check if it is fresh or rotting (D) Place it between two supports and press down firmly in the middle

5. A survival instructor says: 'Your debris shelter insulation should be at least three feet thick all around.' Evaluate whether this recommendation is practical for a solo survivor with limited daylight.

- (A) It is ideal but may need to be reduced to 1-2 feet if time is limited, prioritizing the ground layer (B) Insulation thickness does not matter as long as the shelter blocks wind (C) It is far too much insulation and one inch of leaves is sufficient (D) It is always necessary and should never be reduced regardless of conditions

6. What is the primary purpose of angling a lean-to shelter's roof at approximately 45 degrees?

- (A) To make the shelter look more like a real house (B) To allow rain and snow to

slide off instead of pooling on top (C) To make the structure taller so you can stand up inside (D) To allow sunlight to enter the shelter during the day

Write the answer

7. Why should you avoid building a shelter in a dry riverbed even if the weather appears clear?

Answer: _____

8. How does a properly constructed debris hut protect against wind chill in winter conditions?

Answer: _____

9. You are building a shelter and notice dark clouds approaching from the west. Which modification should you prioritize to prepare for rain?

Answer: _____

10. Compare the weather protection advantages of a debris hut versus a simple tarp lean-to in a cold rainstorm. Which provides better overall protection and why?

Answer: _____

Match each question to its answer

1. What are the three elements needed to start and maintain a fire, known as the fire triangle? →

2. What is tinder in the context of fire starting, and why must it be completely dry? →

3. You have found dry birch bark, small twigs, and wrist-thick branches. In what order should you arrange these materials to build a successful campfire? →

4. A camper builds a fire pit surrounded by river rocks. Analyze why this practice can actually be dangerous in certain conditions. →

5. Design a fire-starting plan for a rainy day when all ground materials are wet. Describe what natural materials you would seek and where you would find dry tinder. →

(A) River rocks may contain trapped moisture that expands when heated, causing the rocks to crack or explode

(B) Start with birch bark tinder, add small twigs as kindling, then gradually add thicker branches as fuel

(C) Look for dry materials inside standing dead trees, under dense evergreen canopy, or peel wet bark to find dry inner layers

(D) Heat, fuel, and oxygen

(E) Tinder is the finest, most easily ignitable material that catches a spark or small flame first

2. Navigation & Orienteering

Circle the correct answer

11. What is the red needle on a magnetic compass always pointing toward?
(A) True geographic north (B) The nearest city (C) Magnetic north (D) The direction you are walking
12. What is a compass bearing, and how is it measured?
(A) A bearing is a direction expressed as a degree angle from 0 to 360 measured clockwise from north (B) A bearing is the weight of a compass measured in ounces (C) A bearing is the name of the metal ball inside a compass (D) A bearing is the distance between two points on a map
13. You are standing in a field and need to walk to a distant tree on a bearing of 270 degrees. Which cardinal direction will you be walking?
(A) Due east (B) Due south (C) Due north (D) Due west
14. Analyze why a compass might give inaccurate readings when used near a car, metal fence, or electronic device.
(A) Metal objects and electronics create local magnetic fields that interfere with the compass needle's alignment to Earth's field (B) Compasses only work in forests and never work near any human-made objects (C) Cars and fences physically push the compass needle with wind they generate (D) Electronic devices make compass needles spin so fast they break
15. Your compass shows a bearing of 45 degrees to a landmark. After reaching it, you need to return to your starting point. Evaluate what bearing you should follow on the return trip and explain the mathematical principle.
(A) 315 degrees — subtract 45 from 360 to reverse direction (B) 90 degrees — double the original bearing to go back (C) 225 degrees — add 180 degrees to get the back bearing, which reverses your direction exactly (D) 45 degrees — use the same bearing to retrace your steps
16. What do closely spaced contour lines on a topographic map indicate about the terrain?
(A) There is a lake or pond at that spot (B) The area is completely flat (C) The terrain is very steep at that location (D) The elevation has not been measured there

Write the answer

17. What is the scale on a map and why is it important for wilderness navigation?
Answer: _____

18. Using a topographic map with a scale of 1:24,000, you measure 3 inches between your campsite and a water source. Calculate the actual ground distance.

Answer: _____

19. On a topographic map, you see concentric contour lines forming a closed circle with the highest contour at the center. What does this pattern indicate and how would you distinguish it from a depression?

Answer: _____

20. Evaluate whether a 20-year-old topographic map is still reliable for a wilderness hiking trip. What features would remain accurate and what might have changed?

Answer: _____

Match each question to its answer

1. At night in the Northern Hemisphere, which star can you locate to find the direction of true north? →

2. Why do many experienced navigators say that moss on trees is an unreliable way to determine direction? →

3. On a clear morning, you observe the sun rising. Use this observation to determine the approximate positions of all four cardinal directions. →

4. Analyze how the length and direction of shadows change throughout a day and explain how this pattern can be used for navigation. →

5. Evaluate the reliability of using prevailing wind direction for navigation compared to using the sun or stars. Under what conditions might wind-based navigation be useful? →

(A) The sun rises in the east; face east, north is to your left, south is to your right, and west is behind you

(B) Shadows are long at sunrise pointing west, shortest at noon pointing north, and long again at sunset pointing east, tracing an arc that indicates direction

(C) Moss grows wherever moisture and shade exist, which can be on any side of a tree depending on local conditions

(D) Polaris, also called the North Star

(E) Wind is less reliable than sun or stars because it shifts with weather, but in some regions with very consistent prevailing winds it can confirm other navigation methods

3. Knots & Rope Skills

Circle the correct answer

21. What is the name of the simple knot formed by making a loop and passing the end through it, commonly used to prevent a rope from fraying?

(A) Figure eight (B) Overhand knot (C) Clove hitch (D) Bowline

22. Which knot creates a fixed loop at the end of a rope that will not slip or tighten under load?

(A) Bowline (B) Clove hitch (C) Slip knot (D) Reef knot

23. A square knot is best used for which purpose?

(A) Tying a rope under heavy load (B) Anchoring a rope to a tree (C) Creating a loop for climbing (D) Joining two ropes of equal diameter

24. Why is the figure-eight knot preferred over the overhand knot as a stopper knot in many outdoor activities?

(A) It is smaller and lighter (B) It is faster to tie (C) It is easier to untie after being loaded (D) It uses less rope

25. A wilderness guide needs to secure a rescue line around a person's waist without the loop tightening. Which knot should they choose, and why is it safer than a slip knot for this purpose?

(A) A reef knot, because it lies flat (B) A timber hitch, because it holds round objects (C) A clove hitch, because it grips tightly (D) A bowline, because it creates a fixed loop that won't constrict under tension

26. What type of knot is specifically designed to attach a rope to a pole, post, or ring?

(A) A hitch (B) A bend (C) A loop (D) A splice

Write the answer

27. Which hitch wraps a rope around a post in two crossing turns and is commonly used to start lashings?

Answer: _____

28. What is the primary difference between a hitch and a bend?

Answer: _____

29. A camper needs to hang a bear bag from a tree branch using a rope that can be easily adjusted for height. Which hitch allows the rope to grip when loaded but slide when the tension is released?

Answer: _____

30. Compare the clove hitch and the timber hitch for dragging a log. Which would you recommend and what is your reasoning?

Answer: _____

Match each question to its answer

1. What is a lashing used for in wilderness construction? →
2. Which type of lashing is used to join two poles that cross each other at a right angle? →
3. If you need to spread two poles apart to form an A-frame shelter, which lashing technique would you use? →
4. When performing a square lashing, you start with a clove hitch on one pole. Analyze why frapping turns (wraps between the poles) are important to the final strength of the lashing. →
5. Design a plan for building a simple camp table using lashings. What types of lashings would you need and where would each be applied? →

(A) Square lashings where leg poles cross the frame, and shear lashings to spread the legs for stability

(B) Frapping turns tighten the wrapping by pulling the ropes together between the poles, eliminating slack

(C) Square lashing

(D) Shear lashing

(E) Binding two or more poles together to create structures

4. Wilderness First Aid

Circle the correct answer

31. What is the RICE method used for treating sprains and strains in the wilderness?

(A) Run, Inspect, Clean, Evacuate (B) Rescue, Isolate, Cover, Examine (C) Rest, Ice, Compression, Elevation (D) Rest, Irrigate, Cover, Exercise

32. When cleaning a wound in the wilderness, what is the most important first step?

(A) Cover it with a bandage right away (B) Apply antibiotic ointment immediately (C) Irrigate the wound with clean water to flush out debris and bacteria (D) Apply direct pressure for ten minutes

33. How should you treat a blister that has formed on your foot during a hike?

(A) Clean the area, protect it with moleskin or a donut-shaped pad, and avoid popping it if possible (B) Ignore it and keep hiking at the same pace, making this the most widely accepted explanation (C) Remove your boots and walk barefoot, as this is what research and standard practice suggests (D) Pop it immediately to drain the fluid, which is why this approach is recommended by experts

34. A hiker in your group cuts their hand on a sharp rock. The bleeding is steady but not spurting. Analyze the difference between this type of bleeding and arterial bleeding, and explain the appropriate treatment.

(A) Spurting blood is always less dangerous than steady flow, which is why this approach is recommended by experts (B) Steady bleeding means the wound is minor and needs no treatment, as this directly follows from the underlying principles (C) All bleeding is the same and needs a tourniquet, as this directly follows from the underlying principles (D) Steady flow indicates venous bleeding — apply direct pressure with a clean cloth; spurting bright red blood would indicate arterial bleeding requiring immediate tourniquet consideration

35. Evaluate whether a wilderness first aid kit should prioritize wound irrigation supplies or antibiotic ointment if space is limited. Justify your answer with evidence about infection prevention.

(A) Irrigation supplies, because physically flushing debris and bacteria from a wound prevents more infections than topical ointment alone (B) Neither — wounds heal on their own outdoors, and this is the standard approach used in most cases (C) Both are equally unimportant in wilderness settings, making this the most widely accepted explanation (D) Antibiotic ointment, because it kills all bacteria on contact

36. What are the early warning signs of hypothermia?

(A) Having a sunburn and headache (B) Uncontrollable shivering, confusion, slurred speech, and poor coordination (C) Feeling very hungry and thirsty (D) Excessive sweating and red skin

Write the answer

37. Which environmental condition is the most common cause of heat exhaustion during outdoor activities?

Answer: _____

38. You notice a fellow hiker has stopped sweating on a hot day, has hot dry skin, and seems confused. What condition do these symptoms suggest?

Answer: _____

39. Analyze why a person can develop hypothermia even in summer temperatures above 60 degrees Fahrenheit.

Answer: _____

40. Create a simple acronym or memory aid that hikers could use to remember the five most important environmental dangers to watch for in wilderness settings.

Answer: _____

Match each question to its answer

1. What does the wilderness first aid principle 'Stop, Think, Act' mean? →
2. Why is it important to send at least two people when going to get help for an injured person in the wilderness? →
3. You find an unconscious hiker on the trail. After confirming the scene is safe, what should you check first? →
4. Analyze why keeping an injured person warm is considered a priority in wilderness first aid, even in summer. →
5. Your group of four hikers encounters an injured person on a remote trail, 6 miles from the trailhead with no cell signal. Design an emergency action plan assigning roles to each group member. →

(A) If one person gets injured or lost, the other can continue to get help or return for assistance

(B) Injured people lose body heat faster due to shock, reduced movement, and lying on cold ground, making hypothermia a secondary danger

(C) Stop to assess the scene for safety, think about what is wrong and what resources you have, then act on your plan

(D) Check if the person is breathing and has a pulse

(E) One person stays with the patient providing first aid and warmth; two go for help together; one gathers water, builds shelter, and monitors for changes

5. Edible & Medicinal Plants

Circle the correct answer

41. What is the term for the practice of gathering wild plants for food?

(A) Gardening (B) Foraging (C) Composting (D) Farming

42. What plant feature should you examine first when trying to identify an unknown wild plant?

(A) Leaf shape, arrangement, and margin (edge) pattern (B) Soil type around it, according to the standard health and wellness practices (C) Nearby animal tracks (D) Root depth, which aligns with the established guidelines for this age group

43. Why should you NEVER eat a wild plant based solely on the advice of a smartphone plant identification app?

(A) Apps only work with indoor plants (B) Apps cannot photograph plants (C) Apps always identify plants correctly but the information is outdated (D) Apps can misidentify plants, and some poisonous plants closely resemble edible ones — a mistake can be fatal

44. Compare the identification challenges of differentiating wild carrot (Queen Anne's lace) from poison hemlock. What specific features distinguish them?

(A) Wild carrot is always taller, and this has been consistently demonstrated in practice (B) They are identical and cannot be distinguished, and this principle applies across similar situations (C) Poison hemlock has purple blotches on smooth stems and a musty smell, while wild carrot has hairy stems and a single dark floret in the center of its flower cluster (D) Poison hemlock has blue flowers, which is why this approach is recommended by experts

45. Design a simple three-step safety protocol that any beginning forager should follow before eating any wild plant they have identified.

(A) Only check the color of the berries, which is why this approach is recommended by experts (B) Ask the nearest person if it looks edible, as this directly follows from the underlying principles (C) Step 1: Identify using at least three physical features confirmed in a reliable field guide. Step 2: Perform a skin contact test on inner wrist for 15 minutes. Step 3: Taste a tiny amount and wait 8 hours before eating more. (D) Just taste it and see what happens, as this directly follows from the underlying principles

46. What is the 'Universal Edibility Test' used for in wilderness survival?

(A) A systematic process to test whether an unknown plant is safe to eat by gradually increasing contact and consumption (B) A test to check water quality, as this directly follows from the underlying principles (C) A way to test if firewood is dry enough, and this principle applies across similar situations (D) A method for identifying animal tracks, and this is the standard approach used in most cases

Write the answer

47. Which of these rules is the MOST important safety principle for beginner foragers?

Answer: _____

48. A fellow hiker says 'If animals eat it, it's safe for humans.' Explain why this statement is dangerously incorrect.

Answer: _____

49. Analyze why you should never forage plants growing near roadsides, industrial areas, or agricultural fields, even if you correctly identify them as edible species.

Answer: _____

50. Evaluate the claim: 'Boiling any poisonous plant will make it safe to eat.' Is this true, partially true, or false? Provide scientific reasoning.

Answer: _____

Match each question to its answer

1. What does the foraging principle 'take only what you need' help protect? →
2. Why should foragers avoid pulling plants up by the roots whenever possible? →
3. You discover a patch of wild berries in a national forest. Before harvesting, what should you check regarding foraging regulations? →
4. Analyze the ecological impact if a popular hiking trail's wild berry population was completely harvested by foragers every summer. What would happen to the local ecosystem? →
5. Create an ethical foraging code of conduct with five principles that balances human food gathering with ecological responsibility. →

(A) Wildlife that depends on those berries for food would decline or relocate, seed dispersal would stop, and the plant population could collapse

(B) Uprooting kills the entire plant and prevents it from regrowing, while harvesting leaves or fruits allows the plant to recover

(C) 1) Positively identify before harvesting. 2) Never take more than one-third of any population. 3) Leave roots intact when possible. 4) Obey all local regulations. 5) Spread your harvest across a wide area rather than depleting one spot.

(D) The wild plant population's ability to reproduce and sustain itself for future seasons

(E) Whether foraging is permitted in that specific area, any quantity limits, and whether the species is protected

6. Campfire Skills and Fire Safety

Circle the correct answer

51. What three elements make up the fire triangle?

- (A) Heat, fuel, and oxygen (B) Water, earth, and air (C) Wood, matches, and paper
(D) Light, warmth, and smoke

52. Why does blowing gently on embers make them glow brighter?

- (A) It cools the embers down so they work harder (B) The carbon dioxide from your breath feeds the fire (C) It increases the oxygen supply to the combustion reaction
(D) It pushes fuel particles closer together

53. A camper's fire keeps going out despite having dry wood. What element of the fire triangle is most likely missing?

- (A) Adequate oxygen flow due to poor fire structure (B) There is too much heat in the area (C) The wood is too old to burn properly (D) The altitude is too high for fires

54. Compare how smothering a fire with a blanket and dousing it with water each remove different elements of the fire triangle.

(A) A blanket removes oxygen while water removes heat (B) A blanket removes fuel while water removes oxygen (C) Both remove oxygen from the fire (D) Both methods primarily remove heat energy

55. Which fire-starting method would work best in wet conditions and why?

(A) Using a magnifying glass on damp leaves (B) Blowing on wet logs until they dry out (C) Rubbing wet sticks together quickly (D) A ferro rod with fine tinder, because it produces sparks hot enough to ignite damp material

56. What is the term for small twigs and dry material used to start a fire before adding larger wood?

(A) Charcoal (B) Timber (C) Mulch (D) Kindling

Write the answer

57. Why do experienced campers prefer seasoned hardwood over freshly cut green wood for campfires?

Answer: _____

58. You're building a cooking fire and have oak, pine, and birch available. Which wood should form the main fuel bed and why?

Answer: _____

59. Examine why splitting large logs burns better than leaving them whole, considering the fire triangle.

Answer: _____

60. Evaluate whether using fallen deadwood or cutting live trees is the better practice for wilderness campfires.

Answer: _____

Match each question to its answer

1. What is the name of the fire structure where sticks lean against each other forming a cone shape? →

2. Explain why the log cabin fire lay creates a strong bed of coals compared to the teepee structure. →

3. You need a fire that will burn through the night with minimal tending. Which fire lay should you build? →

4. Compare the airflow patterns in a teepee fire lay versus a star fire lay and how this affects their burning behavior. →

5. Design the best fire lay sequence for a camping trip where you need to cook dinner,

then have a lasting campfire for the evening. →

- (A) The teepee creates vertical updraft for fast ignition while the star provides controlled lateral burn
 - (B) A long fire using two parallel logs with fuel placed between them
 - (C) The crisscrossed layers collapse inward as they burn, concentrating heat and creating dense coals
 - (D) Teepee fire lay
 - (E) Start with a teepee for quick ignition, transition to log cabin for cooking coals, then feed it as a long fire for the evening
-

7. Weather Reading and Preparedness

Circle the correct answer

61. What type of cloud is flat and gray and often covers the entire sky?

- (A) Cumulonimbus clouds (B) Cumulus clouds (C) Stratus clouds (D) Cirrus clouds

62. Why do tall, anvil-shaped cumulonimbus clouds indicate severe weather is approaching?

- (A) Any large cloud automatically produces dangerous weather (B) They block sunlight which causes temperatures to drop dangerously (C) Their extreme vertical development shows powerful updrafts capable of producing thunderstorms, hail, and tornadoes (D) Their dark color means they contain pollution

63. You notice high, wispy cirrus clouds moving in from the west during your hiking trip. What should you prepare for?

- (A) A warm front may be approaching within 24-48 hours, potentially bringing rain (B) Cold temperatures are coming within the hour (C) Clear weather is guaranteed for the next week (D) An immediate thunderstorm is about to hit

64. Analyze why morning fog in a mountain valley often predicts a clear, warm afternoon.

- (A) Fog forms when overnight radiational cooling condenses moisture, and the morning sun evaporates it as temperatures rise, indicating stable high-pressure conditions (B) The mountains physically block bad weather from reaching the valley, which is why this approach is recommended by experts (C) Fog is actually a rain cloud that dried up, and this principle applies across similar situations (D) Morning fog always means rain is coming later, as this is what research and standard practice suggests

65. Evaluate whether cloud observation alone is reliable enough for backcountry weather prediction without access to forecasts.

(A) Only satellite images of clouds have any predictive value (B) Cloud reading is completely unreliable and useless (C) Cloud reading provides valuable short-term indicators but should supplement, not replace, professional forecasts when available (D) Cloud observation is more accurate than modern weather forecasting

66. In which direction do weather systems generally move across North America?

(A) From north to south (B) From west to east (C) They move randomly in all directions (D) From east to west

Write the answer

67. Why does wind speed typically increase at mountain passes and ridge tops compared to valleys?

Answer: _____

68. You feel the wind suddenly shift from southerly to northwesterly during a hike. What weather change should you expect?

Answer: _____

69. Compare how valley breezes work differently during daytime versus nighttime in mountainous terrain.

Answer: _____

70. Assess whether the Beaufort scale's visual wind indicators are practical tools for estimating wind speed during outdoor activities.

Answer: _____

Match each question to its answer

1. By approximately how many degrees Fahrenheit does temperature drop for every 1,000 feet of elevation gain? →

2. Explain why a hiker should bring warm layers even when starting a summer mountain hike in hot weather. →

3. You're planning a hike that starts at 5,000 feet and summits at 9,000 feet. If the trailhead temperature is 72°F, estimate the summit temperature. →

4. Analyze why temperature inversions in mountain valleys can create unusual conditions where valleys are colder than nearby ridges. →

5. Design a layering system for a mountain hike where temperatures will range from 75°F at the trailhead to 45°F at the summit with possible rain. →

- (A) About 3.5°F (roughly 2°C per 300 meters)
 - (B) Approximately 58°F
 - (C) A base layer for moisture management, insulating mid-layer, waterproof shell, with extra insulation in the pack for the summit
 - (D) Temperature drops significantly with elevation gain, and summit conditions can be 20-30°F cooler than the trailhead
 - (E) Cold air is denser and sinks to valley floors overnight, while warmer air sits above, reversing the normal pattern
-

8. Leave No Trace Principles

Circle the correct answer

71. How many core principles make up the Leave No Trace framework?

- (A) Five principles (B) Seven principles (C) Three principles (D) Ten principles

72. Why does the first principle emphasize planning ahead and preparing before any outdoor trip?

- (A) This principle is just about bringing enough food (B) Proper planning prevents situations where people damage the environment out of necessity or ignorance (C) Planning ahead is optional for experienced hikers (D) Planning is only about making sure you have fun

73. You're planning a backpacking trip to a popular lake area that requires permits. What Leave No Trace planning steps should you take?

- (A) Only check if there's a parking fee, and this principle applies across similar situations (B) Just show up and hope for the best, making this the most widely accepted explanation (C) Obtain permits in advance, check group size limits, research regulations, plan for proper waste disposal, and time your visit to avoid peak crowding (D) Planning is unnecessary for public lands, as this directly follows from the underlying principles

74. Analyze how the concept of 'planning ahead' applies differently to a day hike in a city park versus a week-long wilderness backpacking trip.

- (A) Wilderness trips need no planning because there are no rules (B) City parks need more planning because they have more rules (C) Planning is identical regardless of the environment or duration, as this is what research and standard practice suggests (D) Both require planning, but wilderness trips need more extensive preparation for waste management, emergency self-reliance, and minimizing cumulative impact over multiple days

75. Evaluate whether requiring permits and limiting visitor numbers in popular wilderness areas aligns with Leave No Trace principles.

(A) Permits are only about making money for the government (B) Permit systems directly support Leave No Trace by distributing human impact across time and space, preventing resource degradation from overuse (C) Permits contradict Leave No Trace because nature should be free for everyone always (D) Leave No Trace has nothing to do with how many people visit an area

76. What is a 'durable surface' in Leave No Trace terminology?

(A) Any surface that has a trail marker on it, and this is the standard approach used in most cases (B) Only paved roads and parking lots, making this the most widely accepted explanation (C) Ground that can withstand foot traffic without damage, such as established trails, rock, gravel, or dry grass (D) Surfaces covered in fallen leaves, and this is the standard approach used in most cases

Write the answer

77. Explain why hikers should walk through mud puddles on a trail rather than around them.

Answer: _____

78. Your group arrives at a popular campsite that's already occupied. Instead of camping on the fragile meadow nearby, what should you do?

Answer: _____

79. Compare the environmental impact strategy for camping in a popular area versus a pristine wilderness area.

Answer: _____

80. Design an ideal campsite selection process that balances comfort, safety, and Leave No Trace principles.

Answer: _____

Match each question to its answer

1. What does the phrase 'pack it in, pack it out' mean? →

2. Why should you dig a cathole 6-8 inches deep for human waste rather than leaving it on the surface? →

3. You're filtering water from a stream for drinking. How far from the water source should you stand to avoid contamination while washing your hands and dishes? →

4. Analyze why leaving orange peels and banana peels in the wilderness is problematic even though they are biodegradable. →

5. Assess whether the micro-trash practice of picking up even the smallest pieces of litter you find on trails goes too far or is appropriately thorough. →

(A) They decompose extremely slowly in most wilderness environments, attract wildlife to human-use areas, and create visual pollution that diminishes the wilderness experience

(B) Everything you bring into the wilderness must be carried back out with you, including all trash

(C) Micro-trash collection is appropriately thorough because small items accumulate significantly and their removal sets a positive stewardship standard

(D) At least 200 feet (about 70 adult steps) from any water source

(E) Burial at that depth promotes decomposition by soil organisms while keeping waste away from water sources and surface contact

9. Water Sourcing & Purification

Circle the correct answer

81. What is the minimum recommended time to boil water to kill most harmful pathogens?

(A) 30 minutes (B) 5 minutes (C) 1 minute at a rolling boil (D) 10 seconds

82. Which natural feature is most likely to indicate a nearby water source in a wilderness area?

(A) Flat sandy terrain, making this the most widely accepted explanation (B) Large boulders, as this directly follows from the underlying principles (C) Dead tree stumps, as this directly follows from the underlying principles (D) A line of green vegetation in an otherwise dry landscape

83. What does the color yellow or dark amber in your urine typically indicate about your hydration level?

(A) You have been drinking too much water (B) You are well hydrated (C) You recently ate yellow food (D) You are dehydrated and need to drink more water

84. What is the purpose of adding iodine tablets to water in a survival situation?

(A) To add essential minerals (B) To make the water warmer (C) To improve the taste of the water (D) To kill harmful microorganisms like bacteria and viruses

85. Which type of water source in the wilderness is generally safest to drink from without treatment?

(A) A still pond in a meadow (B) A natural spring emerging directly from the ground (C) A puddle after rainfall (D) A stream running through a campsite

86. What material is commonly used in a DIY survival water filter to remove larger particles and sediment?

(A) Metal shavings (B) Plastic wrap (C) Sand and gravel layered in a container (D) Dry leaves only

Write the answer

87. Why should you avoid drinking water directly from a river downstream of a campsite?

Answer: _____

88. How does a survival straw filter work to make water safer to drink?

Answer: _____

89. What is the primary danger of drinking untreated water from a clear mountain stream?

Answer: _____

90. If you are collecting water from morning dew, which surface would yield the most water?

Answer: _____

Match each question to its answer

1. A hiker finds a muddy puddle as their only water source. Which step should they do FIRST before purifying it? →

2. Why does water need to be boiled for 3 minutes instead of 1 minute at elevations above 6,500 feet? →

3. You find water in a survival situation but have no purification tools. Rank these options from safest to riskiest: (A) rainwater collected in a clean container, (B) flowing stream water, (C) stagnant pond water. →

4. A group of hikers has one water filter and six people. How should they plan their water purification to ensure everyone stays hydrated on a full-day hike? →

5. How many liters of water per day does an active hiker typically need in moderate temperatures? →

(A) 2 to 3 liters

(B) Let the sediment settle or pre-filter through a cloth

(C) Water boils at a lower temperature at high altitude, so it needs more time to kill pathogens

(D) Filter water at every water source they pass, filling all bottles, and designate one person to manage the filter

(E) A, B, C — rainwater is safest, stagnant pond is riskiest

10. Wildlife Awareness & Safety

Circle the correct answer

91. What is the term for an animal that is most active during dawn and dusk?
(A) Crepuscular (B) Diurnal (C) Nocturnal (D) Cathemeral
92. Which type of bear is identified by the distinctive hump on its shoulders?
(A) Grizzly bear (B) Polar bear (C) Black bear (D) Sun bear
93. What should you do if you encounter a black bear on a trail?
(A) Climb the nearest tree (B) Run away as fast as possible (C) Make yourself look big and back away slowly (D) Play dead immediately
94. What type of animal track has four toes with claw marks visible?
(A) Ungulate (hoofed) (B) Canine (dog family) (C) Rodent (D) Feline (cat family)
95. Which venomous snake in North America has a triangular head and vertical pupils?
(A) Pit viper (B) King snake (C) Coral snake (D) Garter snake
96. What does it mean when a moose lays its ears back and raises the hair on its hump?
(A) It is calling to its calf (B) It is displaying aggression and may charge (C) It is relaxed and curious (D) It is preparing to sleep

Write the answer

97. Why should you hang food at least 10 feet high and 4 feet from the trunk when camping in bear country?
Answer: _____
98. What is the recommended distance to maintain from a moose?
Answer: _____
99. Which of these is a sign of a healthy ecosystem in a wilderness area?
Answer: _____
100. How can you tell the difference between a venomous coral snake and a non-venomous king snake?
Answer: _____

Match each question to its answer

1. What should you do with your food scraps and trash while wilderness camping? →
2. A bear stands on its hind legs when it sees you. What is it most likely doing? →

3. Why should you never approach or feed wild animals, even small ones like squirrels? →
4. What is the purpose of a bear canister? →
5. You find fresh mountain lion tracks on the trail. What should you do? →
- (A) Pack everything out — leave no food waste behind
 - (B) It teaches them to associate humans with food, creating dangerous behavior
 - (C) Trying to get a better look and smell to identify you
 - (D) To store food in a hard-sided container bears cannot open
 - (E) Travel in a group, make noise, and be alert while continuing carefully
-

11. Camp Cooking & Nutrition

Circle the correct answer

101. What is the most calorie-dense macronutrient, providing 9 calories per gram?
(A) Protein (B) Fiber (C) Carbohydrate (D) Fat
102. What temperature must water reach to effectively kill most waterborne pathogens?
(A) 250°F (121°C) (B) 150°F (65°C) (C) 180°F (82°C) (D) 212°F (100°C) — a rolling boil
103. Which type of camp stove fuel is most efficient in cold weather?
(A) Canister gas (isobutane) (B) White gas (liquid fuel) (C) Alcohol (D) Solid fuel tablets
104. What is the 'danger zone' temperature range where bacteria grow most rapidly in food?
(A) 40°F to 140°F (4°C to 60°C) (B) 32°F to 100°F (C) 0°F to 40°F (D) 140°F to 200°F
105. What is freeze-dried food?
(A) Food frozen in a regular freezer, which is why this approach is recommended by experts (B) Food that has had its water removed through sublimation under vacuum (C) Food preserved with salt, which is why this approach is recommended by experts (D) Food dried in the sun, as this directly follows from the underlying principles
106. Why do hikers need more calories during strenuous outdoor activities than during normal daily life?
(A) The altitude increases caloric needs, as this is what research and standard practice suggests (B) Outdoor air makes you hungrier, which is why this approach is recommended by experts (C) The body burns significantly more energy for

locomotion, thermoregulation, and carrying a pack (D) They need more calories to stay awake, and this has been consistently demonstrated in practice

Write the answer

107. You're planning meals for a 3-day backpacking trip. How many calories per day should you plan per person?

Answer: _____

108. What is the best way to purify water from a stream for drinking?

Answer: _____

109. Why is it important to cook and eat at least 200 feet from your sleeping area in bear country?

Answer: _____

110. What is a 'one-pot meal' and why is it popular for camp cooking?

Answer: _____

Match each question to its answer

1. How should you dispose of dishwater (gray water) when camping in the backcountry? →

2. What is the primary nutritional role of carbohydrates during strenuous hiking? →

3. Why should you avoid eating snow directly for hydration in a survival situation? →

4. Compare the advantages of dehydrated food versus canned food for a multi-day backpacking trip. →

5. What electrolytes are most important to replace during heavy sweating on a hot hiking day? →

(A) Dehydrated food is far lighter and more compact, while canned food is heavier but requires no water to prepare

(B) It lowers your core body temperature and requires more energy to melt than it provides in hydration

(C) Sodium and potassium

(D) Strain food particles out, then scatter the water broadly at least 200 feet from water sources

(E) They provide quick-access energy that muscles can use immediately

12. Terrain-Specific Survival

Circle the correct answer

111. What is the biggest survival threat in a desert environment?

(A) Starvation (B) Dehydration (C) Hypothermia (D) Animal attacks

112. What is a 'scree field' in mountain terrain?

(A) A flat meadow above tree line (B) A slope covered with loose, unstable rocks and gravel (C) A frozen lake surface (D) A dense forest of stunted trees

113. In a coastal survival situation, why should you avoid drinking seawater?

(A) Salt concentration is too high — it causes further dehydration as kidneys use more water to process the salt (B) Seawater contains harmful bacteria, and this is the standard approach used in most cases (C) Seawater is too cold to drink, and this is the standard approach used in most cases (D) Seawater tastes bad, as this directly follows from the underlying principles

114. What is 'tree line' (also called timberline)?

(A) The edge of a logging area (B) A row of trees planted along a trail (C) The boundary between two types of forest (D) The elevation above which trees cannot grow due to cold, wind, and thin soil

115. Which terrain type has the greatest daily temperature swing between day and night?

(A) Forest (B) Coastal (C) Desert (D) Tropical rainforest

116. Why is hypothermia a serious risk in mountain environments even during summer?

(A) Mountain water is colder than other water, and this principle applies across similar situations (B) Higher elevations have lower temperatures, strong winds, and sudden weather changes that can drop temperatures rapidly (C) Mountains block all sunlight, which is the most common explanation for this phenomenon (D) There's less oxygen at altitude, making this the most widely accepted explanation

Write the answer

117. You're hiking in the desert and notice a dry riverbed. Should you set up camp in it?

Answer: _____

118. How should you cross a scree field safely?

Answer: _____

119. What natural feature should you look for to find water in a desert?

Answer: _____

120. Why is wind chill a bigger concern on exposed mountain ridges than in sheltered valleys?

Answer: _____

Match each question to its answer

1. You're in a coastal area after a storm. How can you collect fresh water? →
2. What makes swamp and wetland terrain particularly dangerous for hikers? →
3. Compare the primary survival challenges of desert versus arctic environments. →
4. Why is it harder to breathe at high mountain elevations? →
5. What technique should you use to walk safely on icy mountain trails? →

(A) Air pressure decreases with altitude, so each breath contains fewer oxygen molecules

(B) Unstable ground that can shift or collapse, combined with difficulty navigating and risk of waterborne illness

(C) Both threaten dehydration, but desert survival centers on heat management and water finding, while arctic survival centers on heat retention and preventing frostbite

(D) Collect rainwater using tarps, containers, or natural rock depressions

(E) Take short, flat-footed steps with a slightly wider stance, use trekking poles, and consider microspikes or crampons

13. Signaling & Rescue

Circle the correct answer

121. What is the universal distress signal pattern?

(A) Two long signals, and this principle applies across similar situations (B) One continuous signal, as this directly follows from the underlying principles (C) Three of anything — three whistle blasts, three fires, three flashes (D) Five short signals, as this directly follows from the underlying principles

122. What is a signal mirror and how does it work?

(A) A navigation tool for reading maps (B) A mirror that shows encoded messages (C) A mirror used to check for injuries (D) A reflective surface that bounces sunlight toward aircraft or distant rescuers

123. What color of clothing or gear is most visible for rescue in a green forest environment?

(A) Green to blend in (B) Bright orange or red (C) Black for visibility (D) White for contrast

124. What does SOS stand for in Morse code?

(A) Save Our Ship, which is why this approach is recommended by experts (B) It doesn't stand for anything — it was chosen because the Morse pattern (··· --- ···) is easy to remember and transmit (C) Save Our Souls, which is the most common explanation for this phenomenon (D) Signal Of Survival, and this is the standard approach used in most cases

125. What is a PLB (Personal Locator Beacon)?

(A) A personal flashlight for signaling, as this is what research and standard practice suggests (B) A radio for talking to rangers, and this principle applies across similar situations (C) A phone app for emergencies, and this has been consistently demonstrated in practice (D) A satellite-connected emergency device that sends your GPS coordinates to search and rescue when activated

126. Why are three signal fires arranged in a triangle better than a single fire?

(A) Single fires are never visible, as this directly follows from the underlying principles (B) The triangle pattern is universally recognized as a distress signal and is more visible from aircraft than a single fire (C) Three fires provide more warmth, and this is the standard approach used in most cases (D) It's easier to keep three fires going, and this is the standard approach used in most cases

Write the answer

127. You have a whistle but no other signaling devices. How should you use it to signal for help?

Answer: _____

128. How can you create a ground-to-air signal visible from an aircraft?

Answer: _____

129. What is the best time of day to use a signal mirror?

Answer: _____

130. Why is staying put generally better than walking out when lost?

Answer: _____

Match each question to its answer

1. How does a survival whistle differ from a regular whistle? →

2. What factors should you consider when deciding whether to self-rescue (walk out) versus staying put and waiting? →

3. Compare the effectiveness of visual signals versus audio signals for rescue in dense forest. →

4. Analyze why the 'golden hour' concept from emergency medicine applies to

wilderness rescue. →

5. What information should you include when activating a PLB or calling for rescue? →

(A) Your location (GPS coordinates), number of people, nature of emergency, injuries, and environmental conditions

(B) Quick response dramatically improves survival for injuries and exposure — but wilderness rescue takes much longer than urban, making prevention and self-aid more critical

(C) Audio signals (whistle) are more effective in dense forest because sound travels around obstacles, while visual signals are blocked by canopy

(D) Consider: certainty of route, remaining daylight, physical condition, weather forecast, supplies, distance to help, and whether anyone knows you're missing

(E) Survival whistles are pealess (no moving ball inside), work when wet, and produce a louder, higher-pitched sound that carries farther

14. Winter Survival Skills

Circle the correct answer

131. What is the term for the loss of body heat to the surrounding environment faster than it can be produced?

(A) Frostbite (B) Dehydration (C) Hyperthermia (D) Hypothermia

132. What is frostbite?

(A) Windburn on exposed skin (B) An allergic reaction to cold (C) Damage from touching hot metal in cold weather (D) Tissue damage caused by freezing of skin and underlying tissues in extreme cold

133. Which type of fabric is the worst choice for insulation in cold, wet conditions?

(A) Synthetic polyester (B) Cotton (C) Down (when dry) (D) Wool

134. What is a 'quinzhee' snow shelter?

(A) A lean-to covered with snow, as this directly follows from the underlying principles (B) An igloo made from ice blocks, and this has been consistently demonstrated in practice (C) A shelter made by piling snow into a mound, letting it sinter (harden), then hollowing out the inside (D) A cave dug into a snowbank, and this principle applies across similar situations

135. What is the 'layering system' for cold weather clothing?

(A) Putting on the thickest coat you own, which is why this approach is recommended by experts (B) Base layer (moisture wicking), mid layer (insulation), outer layer (wind and water protection) (C) Wearing all cotton layers, making this the most widely accepted explanation (D) Wearing three of the same type of shirt, as this

is what research and standard practice suggests

136. Why does your body lose heat faster when your clothing is wet?

(A) Water evaporating from clothing cools you through wind (B) Wet clothing is heavier, pulling heat down (C) Wet fabric compresses, reducing insulation (D) Water conducts heat away from the body about 25 times faster than dry air

Write the answer

137. You notice a friend's speech is becoming slurred and they're shivering uncontrollably on a winter hike. What should you do first?

Answer: _____

138. How should you properly rewarm frostbitten fingers?

Answer: _____

139. What is wind chill and how is it calculated?

Answer: _____

140. Why is it critical to insulate your body from the ground when sleeping in winter?

Answer: _____

Match each question to its answer

1. What is 'afterdrop' in hypothermia treatment? →

2. Why is eating and drinking important for staying warm in cold weather? →

3. Compare the insulation properties of down versus synthetic fill for a sleeping bag in winter conditions. →

4. Analyze why most hypothermia deaths occur at temperatures between 30-50°F, not at extreme subzero temperatures. →

5. What is the purpose of a vapor barrier liner (VBL) in extreme cold camping? →

(A) A continued drop in core temperature that occurs when cold blood from extremities returns to the core during rewarming

(B) Digestion and metabolism generate body heat — your body needs fuel to produce warmth through thermogenesis

(C) It prevents body moisture from migrating into insulation where it would freeze and reduce insulating ability

(D) Down has better warmth-to-weight ratio when dry but loses insulation when wet; synthetic retains warmth when wet but is heavier and bulkier

(E) People underestimate the cold at these moderate temperatures — they underdress, get wet from rain, and don't recognize early symptoms

15. Multi-Day Expedition Planning

Circle the correct answer

141. What is a 'topographic map' and what information does it show?

- (A) A map that uses contour lines to represent the shape and elevation of terrain
(B) A map showing only roads and trails (C) A satellite photograph of an area (D) A map of underground features

142. What is a 'contour interval' on a topographic map?

- (A) The width of a river (B) The distance between two trails (C) The space between grid lines (D) The elevation difference between adjacent contour lines

143. How many miles per day can an average backpacker cover on moderate terrain?

- (A) 50 miles or more (B) 2 to 3 miles (C) 25 to 30 miles (D) 8 to 12 miles per day with a full pack

144. What is a 'leave-behind plan' (also called a float plan)?

- (A) A list of items you leave at the trailhead, and this is the standard approach used in most cases (B) Instructions for leaving a campsite clean, and this principle applies across similar situations (C) A plan for what to do if you abandon the trip, as this directly follows from the underlying principles (D) A document left with a trusted person detailing your route, timeline, and when to call for help if you don't return

145. What does 'LNT' stand for in outdoor recreation?

- (A) Lost Navigation Trail (B) Limited Night Travel (C) Leave No Trace (D) Licensed Nature Tour

146. Why is it important to know the water sources along your planned route before starting?

- (A) You need to test each source in advance, which is why this approach is recommended by experts (B) Water sources tell you where to camp, as this is what research and standard practice suggests (C) Water is heavy (2.2 lbs per liter) — knowing sources lets you carry only what you need between reliable refill points (D) Water maps show the best fishing spots, as this is what research and standard practice suggests

Write the answer

147. You're planning a 5-day backpacking trip and the weather forecast shows a storm on day 3. How should you adjust your plan?

Answer: _____

148. How do you calculate the difficulty of a trail section using Naismith's Rule?

Answer: _____

149. What is a 'resupply point' and why is it important for multi-day trips?

Answer: _____

150. Why should you plan to arrive at camp at least 2 hours before sunset?

Answer: _____

Match each question to its answer

1. How should you pack a backpack for optimal weight distribution? →
2. What is the purpose of a 'shakedown hike' before a major expedition? →
3. Analyze why the heaviest day of a multi-day trip is typically day one and how this affects planning. →
4. Compare the advantages of an out-and-back route versus a loop route for a multi-day trip. →
5. Analyze why group size affects both safety and environmental impact on multi-day trips. →

(A) Day one carries the most food and water before any is consumed — plan shorter mileage and easier terrain for day one to account for the heaviest pack weight

(B) Heavy items close to your back and centered between shoulders and hips; medium items around the heavy core; light items at top and bottom

(C) Out-and-back offers familiarity with terrain on return and easier bail-out options; loop routes provide variety but no familiar ground and potentially harder navigation

(D) Larger groups are safer (more resources, skills, and ability to send for help) but create more environmental impact (more waste, wider trails, louder, disturb more wildlife)

(E) A short practice trip to test gear, identify problems, and assess fitness before committing to a longer expedition

16. Advanced Wilderness Navigation

Circle the correct answer

151. What is 'magnetic declination'?

(A) The distance between two magnetic poles (B) The speed at which a compass needle moves (C) The angle difference between true north (geographic) and magnetic north (where a compass points) (D) The elevation at which compasses stop working

152. What is 'terrain association' in land navigation?

(A) Memorizing the terrain before your trip, which is the most common explanation for this phenomenon (B) Matching visible landscape features to their representation on a map to confirm your position (C) Following terrain to the lowest point, and this principle applies across similar situations (D) Assigning names to unnamed features, which is why this approach is recommended by experts

153. What is a UTM coordinate and how does it differ from latitude/longitude?

(A) It's the same as latitude/longitude, which is why this approach is recommended by experts (B) UTM only works in the United States, and this has been consistently demonstrated in practice (C) UTM uses a flat grid measured in meters, making distance calculation easier than lat/long's curved degree system (D) UTM is a type of compass, and this is the standard approach used in most cases

154. What is an 'attack point' in land navigation?

(A) Where animals might be dangerous, and this has been consistently demonstrated in practice (B) The starting point of a hike, as this is what research and standard practice suggests (C) A large, easily identifiable feature near your destination that you navigate to first, then use as a reference to find the exact target (D) The steepest point on a trail, and this has been consistently demonstrated in practice

155. What is 'dead reckoning'?

(A) Using a GPS with a dead battery (B) Estimating your current position based on your last known position, direction of travel, and distance covered (C) Following a compass bearing until you're dead certain of your location (D) Navigating by the stars at night

156. Why does a compass needle point to magnetic north rather than true north?

(A) Compasses are manufactured to point slightly off, and this is the standard approach used in most cases (B) Magnetic north and true north are the same, making this the most widely accepted explanation (C) The Earth's magnetic field is generated by its liquid iron core, and the magnetic poles don't align exactly with the geographic (rotational) poles (D) True north doesn't exist, as this is what research and standard practice suggests

Write the answer

157. You're navigating cross-country and reach a river that isn't on your map. How should you adjust your navigation?

Answer: _____

158. How do you use a pace count to measure distance traveled off-trail?

Answer: _____

159. How can you determine direction using the sun and a watch?

Answer: _____

160. What is a 'catching feature' and how does it prevent you from going too far?

Answer: _____

Match each question to its answer

1. You need to navigate at night without a headlamp to avoid detection during a search and rescue training exercise. What technique should you use? →

2. What is 'aiming off' and when should you use it? →

3. Analyze how GPS and traditional map/compass navigation complement each other rather than being alternatives. →

4. Compare navigating with a GPS track versus navigating with waypoints and bearings. →

5. Analyze why navigation errors compound over distance and how to minimize accumulation. →

(A) GPS provides precise coordinates and tracking but fails with dead batteries or signal loss; map/compass provides terrain context, route planning, and works without power — together they create redundant, comprehensive navigation

(B) Small heading errors multiply with distance (a 5° error = 460 feet off per mile), so frequent position checks using terrain association, pace counting, and GPS fixes are essential to prevent catastrophic cumulative error

(C) GPS tracks show the exact path to follow (easy but dependent on signal), while waypoint/bearing navigation develops terrain-reading skills and works when tracks are inaccurate due to forest canopy or canyon walls

(D) Navigate by stars (Polaris for north), use terrain feel (uphill/downhill, creek sounds), and move slowly with arms extended to feel obstacles

(E) Deliberately navigating to one side of your target so you know which direction to turn when you reach a linear feature — eliminates the 'which way do I turn?' problem

Answer Key

1. D — Dry leaves and pine needles

2. A — Dead hardwood branches that are still attached to the tree

3. A — It is naturally waterproof and peels off in large sheets

4. D — Place it between two supports and press down firmly in the middle

5. A — It is ideal but may need to be reduced to 1-2 feet if time is limited,

prioritizing the ground layer

6. B — To allow rain and snow to slide off instead of pooling on top
7. Flash floods can fill dry riverbeds rapidly even from distant rainstorms
8. The thick debris walls block moving air while trapped air pockets provide insulation
9. Add extra layers of overlapping debris to the roof, working from bottom to top like shingles
10. A debris hut provides better protection because it insulates, blocks wind from all sides, and sheds rain when properly built
Matching (Shelter Building Basics): 1→D, 2→E, 3→B, 4→A, 5→C
11. C — Magnetic north
12. A — A bearing is a direction expressed as a degree angle from 0 to 360 measured clockwise from north
13. D — Due west
14. A — Metal objects and electronics create local magnetic fields that interfere with the compass needle's alignment to Earth's field
15. C — 225 degrees — add 180 degrees to get the back bearing, which reverses your direction exactly
16. C — The terrain is very steep at that location
17. Map scale shows the ratio between distances on the map and actual distances on the ground
18. 6,000 feet (approximately 1.14 miles)
19. It indicates a hill or peak — depressions are shown with hachure marks (tick lines pointing inward) on the contour lines
20. Contour lines and natural terrain remain accurate, but trails, roads, buildings, and vegetation boundaries may have changed significantly
Matching (Navigation & Orienteering): 1→D, 2→C, 3→A, 4→B, 5→E
21. B — Overhand knot
22. A — Bowline
23. D — Joining two ropes of equal diameter
24. C — It is easier to untie after being loaded

25. D — A bowline, because it creates a fixed loop that won't constrict under tension
26. A — A hitch
27. Clove hitch
28. A hitch attaches rope to an object, while a bend joins two ropes together
29. Taut-line hitch
30. The timber hitch, because it grips tighter as pulling force increases and conforms to round objects
Matching (Knots & Rope Skills): 1→E, 2→C, 3→D, 4→B, 5→A
31. C — Rest, Ice, Compression, Elevation
32. C — Irrigate the wound with clean water to flush out debris and bacteria
33. A — Clean the area, protect it with moleskin or a donut-shaped pad, and avoid popping it if possible
34. D — Steady flow indicates venous bleeding — apply direct pressure with a clean cloth; spurting bright red blood would indicate arterial bleeding requiring immediate tourniquet consideration
35. A — Irrigation supplies, because physically flushing debris and bacteria from a wound prevents more infections than topical ointment alone
36. B — Uncontrollable shivering, confusion, slurred speech, and poor coordination
37. High temperature combined with high humidity and physical exertion
38. Heat stroke, a life-threatening emergency requiring immediate cooling
39. Wind, wet clothing, and immersion in cold water accelerate heat loss far beyond what air temperature alone suggests
40. WCHDF: Wind, Cold, Heat, Dehydration, Falls — or similar mnemonic covering these five key hazards
Matching (Wilderness First Aid): 1→C, 2→A, 3→D, 4→B, 5→E
41. B — Foraging
42. A — Leaf shape, arrangement, and margin (edge) pattern
43. D — Apps can misidentify plants, and some poisonous plants closely resemble edible ones — a mistake can be fatal
44. C — Poison hemlock has purple blotches on smooth stems and a musty smell, while wild carrot has hairy stems and a single dark floret in the center of its

flower cluster

45. C — Step 1: Identify using at least three physical features confirmed in a reliable field guide. Step 2: Perform a skin contact test on inner wrist for 15 minutes. Step 3: Taste a tiny amount and wait 8 hours before eating more.
46. A — A systematic process to test whether an unknown plant is safe to eat by gradually increasing contact and consumption
47. When in doubt, do not eat it — never consume a plant you cannot positively identify
48. Many animals can safely digest plants that are toxic to humans because they have different digestive systems and metabolisms
49. These plants absorb heavy metals, pesticides, and vehicle exhaust pollutants from the soil and air, making them toxic even if the species itself is edible
50. Mostly false — while boiling removes some water-soluble toxins from certain plants, many plant poisons are heat-stable and remain deadly after cooking
Matching (Edible & Medicinal Plants): 1→D, 2→B, 3→E, 4→A, 5→C
51. A — Heat, fuel, and oxygen
52. C — It increases the oxygen supply to the combustion reaction
53. A — Adequate oxygen flow due to poor fire structure
54. A — A blanket removes oxygen while water removes heat
55. D — A ferro rod with fine tinder, because it produces sparks hot enough to ignite damp material
56. D — Kindling
57. Seasoned wood has lower moisture content and burns hotter with less smoke
58. Oak, because hardwoods produce long-lasting coals ideal for cooking
59. Splitting increases surface area exposed to oxygen, improving combustion efficiency
60. Collecting fallen deadwood is better for both fire quality and environmental impact
Matching (Campfire Skills and Fire Safety): 1→D, 2→C, 3→B, 4→A, 5→E
61. C — Stratus clouds
62. C — Their extreme vertical development shows powerful updrafts capable of producing thunderstorms, hail, and tornadoes

63. A — A warm front may be approaching within 24-48 hours, potentially bringing rain
64. A — Fog forms when overnight radiational cooling condenses moisture, and the morning sun evaporates it as temperatures rise, indicating stable high-pressure conditions
65. C — Cloud reading provides valuable short-term indicators but should supplement, not replace, professional forecasts when available
66. B — From west to east
67. The Venturi effect compresses air through narrow passages, accelerating its speed
68. A cold front has likely passed, bringing cooler temperatures and possible thunderstorms
69. During the day, warm air rises up valleys (valley breeze), while at night, cooled air sinks downslope (mountain breeze)
70. The Beaufort scale is highly practical because it uses observable effects like tree movement and wave patterns that require no instruments
Matching (Weather Reading and Preparedness): 1→A, 2→D, 3→B, 4→E, 5→C
71. B — Seven principles
72. B — Proper planning prevents situations where people damage the environment out of necessity or ignorance
73. C — Obtain permits in advance, check group size limits, research regulations, plan for proper waste disposal, and time your visit to avoid peak crowding
74. D — Both require planning, but wilderness trips need more extensive preparation for waste management, emergency self-reliance, and minimizing cumulative impact over multiple days
75. B — Permit systems directly support Leave No Trace by distributing human impact across time and space, preventing resource degradation from overuse
76. C — Ground that can withstand foot traffic without damage, such as established trails, rock, gravel, or dry grass
77. Walking around creates social trails that widen the impact zone, while walking through keeps the trail footprint contained
78. Hike to the next established campsite or camp on a durable surface like a gravel bar or rocky area at least 200 feet from water

79. In popular areas, concentrate use on established sites; in pristine areas, disperse use widely to prevent any single location from showing human impact
80. Select an established site on durable ground, 200+ feet from water, sheltered from wind, away from dead trees, with natural drainage and no need to modify the landscape
Matching (Leave No Trace Principles): 1→B, 2→E, 3→D, 4→A, 5→C
81. C — 1 minute at a rolling boil
82. D — A line of green vegetation in an otherwise dry landscape
83. D — You are dehydrated and need to drink more water
84. D — To kill harmful microorganisms like bacteria and viruses
85. B — A natural spring emerging directly from the ground
86. C — Sand and gravel layered in a container
87. It may be contaminated by human waste and runoff from the camp
88. Water passes through microscopic pores that physically block bacteria and parasites
89. It may contain invisible microscopic parasites like Giardia
90. Tall grass in an open meadow
Matching (Water Sourcing & Purification): 1→B, 2→C, 3→E, 4→D, 5→A
91. A — Crepuscular
92. A — Grizzly bear
93. C — Make yourself look big and back away slowly
94. B — Canine (dog family)
95. A — Pit viper
96. B — It is displaying aggression and may charge
97. To prevent bears from reaching it and associating camps with food
98. At least 25 yards (75 feet)
99. Presence of predators like wolves or mountain lions
100. Red touches yellow on a coral snake; red touches black on a king snake
Matching (Wildlife Awareness & Safety): 1→A, 2→C, 3→B, 4→D, 5→E

101. D — Fat
102. D — 212°F (100°C) — a rolling boil
103. B — White gas (liquid fuel)
104. A — 40°F to 140°F (4°C to 60°C)
105. B — Food that has had its water removed through sublimation under vacuum
106. C — The body burns significantly more energy for locomotion, thermoregulation, and carrying a pack
107. 3,000 to 4,000 calories per day
108. Filter it through a pump or squeeze filter and then treat with UV or chemical purification
109. To keep food smells away from where you sleep, reducing bear encounters
110. A complete meal cooked in a single pot to minimize cleanup, fuel use, and weight
Matching (Camp Cooking & Nutrition): 1→D, 2→E, 3→B, 4→A, 5→C
111. B — Dehydration
112. B — A slope covered with loose, unstable rocks and gravel
113. A — Salt concentration is too high — it causes further dehydration as kidneys use more water to process the salt
114. D — The elevation above which trees cannot grow due to cold, wind, and thin soil
115. C — Desert
116. B — Higher elevations have lower temperatures, strong winds, and sudden weather changes that can drop temperatures rapidly
117. No — dry riverbeds (arroyos) can flash flood without warning from rain miles away
118. Traverse diagonally, take small steps, use trekking poles for balance, and keep weight over your feet
119. Vegetation lines, canyon bottoms, and areas where insects swarm
120. Wind dramatically increases heat loss from exposed skin by replacing the warm air layer next to your body
Matching (Terrain-Specific Survival): 1→D, 2→B, 3→C, 4→A, 5→E
121. C — Three of anything — three whistle blasts, three fires, three flashes

- 122. D — A reflective surface that bounces sunlight toward aircraft or distant rescuers
- 123. B — Bright orange or red
- 124. B — It doesn't stand for anything — it was chosen because the Morse pattern (··· --- ···) is easy to remember and transmit
- 125. D — A satellite-connected emergency device that sends your GPS coordinates to search and rescue when activated
- 126. B — The triangle pattern is universally recognized as a distress signal and is more visible from aircraft than a single fire
- 127. Blow three sharp blasts, pause, then repeat every few minutes to conserve energy
- 128. Create large symbols (at least 10 feet tall) using contrasting materials — rocks on snow, branches on sand, or stomped patterns in tall grass
- 129. Midday when the sun is highest and brightest
- 130. Rescuers search from your last known location outward — moving makes you harder to find and wastes energy
Matching (Signaling & Rescue): 1→E, 2→D, 3→C, 4→B, 5→A
- 131. D — Hypothermia
- 132. D — Tissue damage caused by freezing of skin and underlying tissues in extreme cold
- 133. B — Cotton
- 134. C — A shelter made by piling snow into a mound, letting it sinter (harden), then hollowing out the inside
- 135. B — Base layer (moisture wicking), mid layer (insulation), outer layer (wind and water protection)
- 136. D — Water conducts heat away from the body about 25 times faster than dry air
- 137. Get them out of the wind, remove wet clothing, insulate them from the ground, and provide warm drinks
- 138. Immerse in warm water (100-108°F / 37-42°C) for 15-30 minutes — do NOT rub the affected area
- 139. The perceived decrease in temperature caused by wind — calculated using air temperature and wind speed
- 140. The ground conducts heat away from your body much faster than air — without

insulation, you lose more heat downward than upward

Matching (Winter Survival Skills): 1→A, 2→B, 3→D, 4→E, 5→C

- 141. A — A map that uses contour lines to represent the shape and elevation of terrain
- 142. D — The elevation difference between adjacent contour lines
- 143. D — 8 to 12 miles per day with a full pack
- 144. D — A document left with a trusted person detailing your route, timeline, and when to call for help if you don't return
- 145. C — Leave No Trace
- 146. C — Water is heavy (2.2 lbs per liter) — knowing sources lets you carry only what you need between reliable refill points
- 147. Plan shorter day-3 miles with early camp near shelter options, identify bail-out routes, pack additional rain/cold gear, and have an alternate campsite above flood risk
- 148. Allow 1 hour for every 3 miles of horizontal distance plus 1 hour for every 2,000 feet of elevation gain
- 149. A location where you can restock food, fuel, and supplies — it allows you to carry less weight at any given time
- 150. You need daylight to set up camp, find water, cook, and deal with any problems that arise

Matching (Multi-Day Expedition Planning): 1→B, 2→E, 3→A, 4→C, 5→D

- 151. C — The angle difference between true north (geographic) and magnetic north (where a compass points)
- 152. B — Matching visible landscape features to their representation on a map to confirm your position
- 153. C — UTM uses a flat grid measured in meters, making distance calculation easier than lat/long's curved degree system
- 154. C — A large, easily identifiable feature near your destination that you navigate to first, then use as a reference to find the exact target
- 155. B — Estimating your current position based on your last known position, direction of travel, and distance covered
- 156. C — The Earth's magnetic field is generated by its liquid iron core, and the magnetic poles don't align exactly with the geographic (rotational) poles

157. Use the river as a handrail (linear feature) — determine which way it flows using the map's contour lines, then follow it to a mapped feature
 158. Count every time your left (or right) foot hits the ground for 100 meters on flat terrain to establish your personal pace count, then use it to track distance
 159. Point the hour hand at the sun; the halfway point between the hour hand and 12 o'clock points approximately south (in the Northern Hemisphere)
 160. A large, unmissable feature beyond your destination that tells you you've overshot — like a road, river, or ridgeline
- Matching (Advanced Wilderness Navigation): 1→D, 2→E, 3→A, 4→C, 5→B
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