

Sea Scout Advancement SPAR

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Apprentice

1. Ideals

- a. Qualify as a member of your Sea Scout ship by taking part in the ship’s admission ceremony. _____
- b. Repeat from memory and discuss with an adult leader, an Able Scout, or a Quartermaster Scout the Scout Oath and Law and the Sea Promise and agree to carry out the provisions of your ship’s code and bylaws. _____
- c. Demonstrate acceptable courtesies used aboard a Sea Scout vessel. _____
- d. Demonstrate the proper procedure for boarding a Sea Scout vessel and landship. _____
- e. With other Sea Scouts, friends or family members, complete the Personal Safety Awareness Training for Scouting America’s Older Youth Programs led by an adult leader or designee. The adult conducting the program should follow the program guidelines found in <https://seascout.org/program-toolbox/> to complete this requirement. _____

2. Active Membership

- a. Provide evidence that you are fulfilling your financial obligations to your ship, including helping with fundraisers. _____
- b. Obtain a Sea Scout uniform. Describe the Sea Scout uniform. Tell how and when to wear the uniform. _____
- c. Meet your ship’s bylaws requirement for active participation in your ship’s meetings and activities for three months. _____

3. Leadership

- a. Describe your ship’s organization, including the youth and adult leadership positions. _____
- b. Demonstrate your ability to identify insignia of youth and adult leadership positions. Explain the chain of command in your ship. _____

4. Swimming

Demonstrate your ability to swim by doing one of the following: Jump feet first into water over your head, swim 75 yards/meters in a strong manner using one or more of the following strokes: sidestroke, breaststroke, trudgen, or crawl; then swim 25 yards/meters using the elementary backstroke. The 100 yards/meters must be swum continuously and include at least one sharp turn. After completing the swim, rest by floating on your back, remaining as motionless as possible. _____

5. Safety

a. Explain the uses, advantages, and disadvantages of the various types of Coast Guard–approved life jackets. Demonstrate the proper use and care of life jackets used by your ship. Discuss your state's boating laws as they relate to life jacket wear.

b. Identify visual day and night marine distress signals and know their location and the proper use for your ship's vessel(s).

OR

Know and demonstrate basic hand, paddle, and whistle signals commonly used on paddlecraft trips.

c. Use the Distress Communications Form to demonstrate the procedure to send the following VHF emergency messages: Mayday, Pan Pan, and Security.

d. Know the safety rules that apply to vessels and equipment used by your ship, and safety standards in the use of power tools, machinery, lifting heavy objects, and other safety devices used by your ship.

OR

Obtain and discuss with your leader or designee, your state's paddlecraft safety rules for the craft most frequently used by your ship.

e. Obtain a current copy of the U.S. Coast Guard Auxiliary (USCG AUX) or America's Boating Club (ABC) Vessel Safety Check (VSC) Form online. With an approved Vessel Examiner or an experienced adult leader, perform a VSC on the vessel(s) in use by your Ship. Additionally, obtain, or create your own, USCG "IF FOUND" sticker(s). Complete the contact information and place it on the vessel(s) used by your Ship. If your Ship's vessel(s) already displays an "IF FOUND" sticker, verify the contact information is still correct. If not, correct it.

6. Marlinspike Seamanship

Using both large and small lines, tie and explain the use of the following knots:

- overhand
- square
- figure eight
- bowline
- two half hitches
- clove hitch
- sheet bend
- cleat hitch

7. Boat Handling

a. Name the principal parts of a typical sailboat, runabout, canoe, kayak, SUP, and raft.

b. Describe the identifying characteristics of:

- i. A sloop, ketch, yawl, cutter, and schooner
- ii. An open motorboat and cabin motorboat
- iii. A touring canoe and whitewater canoe

- iv. A whitewater kayak and sea kayak _____
- v. Oar frame raft and a paddle raft _____
- c. Demonstrate the ability to use a heaving line. _____

OR

While on land, demonstrate the ability to throw a rescue throw bag and hit a four-foot-wide target 30 feet (10 meters) away. Then, without hesitation, retrieve the line, and immediately throw it as a coil, and hit a four-foot-wide target 21 feet (seven meters) away. Finally, retrieve the line and re-stuff the bag. _____

8. Service

- a. Log at least eight hours of work on ship equipment, projects, or activities other than regular ship meetings, parties, dances, or fun events. _____
- b. Participate with your ship for at least eight hours in community service projects. Note: Arrange for this work through the ship's officers. _____

Ordinary

1. Ideals

- a. Explain the symbolism of the Sea Scout emblem. _____
- b. Give a brief oral history of the U.S. flag. _____
- c. Demonstrate how to fly, hoist, lower, fold, display and salute the U.S. flag. Explain flag etiquette and protocols for both land and sea. _____
- d. Discuss with an adult leader how you live the Scout Oath and Law in your daily life. _____

2. Active Membership

- a. Meet your ship's bylaws requirement for active participation in your ship's meetings and activities for three months. _____
- b. Do one of the following. Recruit a new member for your ship and follow through until the new member is registered and formally admitted with an admissions ceremony or assist in planning and carrying out a ship recruiting activity, such as an open house or joint activity with a youth group or organization (another Sea Scout ship will not count). _____

3. Leadership

- a. Participate in the Scouting America's Introduction to Leadership Skills for Ships (ILSS) course. _____
- b. Complete quarterdeck training, either as an officer or as a prospective officer. _____
- c. Serve as an activity chair for a major ship event. Responsibilities should include planning, directing, and evaluating the event. _____

4. Swimming

Pass all requirements for Scouting America's Swimming merit badge. _____

5. Safety

- a. Discuss Scouting America’s Safety Afloat with an adult leader or a Quartermaster candidate. _____
- b. Describe the safety equipment required by law for your ship’s primary vessel. Know and demonstrate basic hand, paddle, and whistle signals commonly used on paddlecraft trips. _____
- c. For larger vessels that require a crew, develop a ship’s station bill for your ship and review it with an adult leader. _____

OR

For smaller vessels with only one or two people aboard, develop a roster of attendees for your ship’s next float trip. Identify lead and sweep boats. Note which boats are carrying rescue and first aid equipment, the trip roster, and medical forms. Review the roster with an adult leader.

- d. Plan and practice the following drills: man overboard, fire, and abandon ship. _____

OR

If your ship uses small vessels such as small sailboats or paddlecraft, plan and practice man overboard drills (if appropriate), capsize drills, and deep water re-entries.

- e. Describe any three types of equipment used in marine communications. _____
- f. Demonstrate proficiency with the communication devices used on your ship’s primary vessel. _____
- g. Galley _____

- i. Before an activity, submit a menu that uses cooked and uncooked dishes, a list of provisions, and estimated costs for a day’s meal (breakfast, lunch, and dinner). Once the provision list is approved, help obtain the items on the list. _____
- ii. Explain the use of charcoal, isobutane, white gas, and propane. Include safety precautions for each. _____
- iii. Prepare breakfast, lunch, and dinner while on the activity. Demonstrate your ability to properly use the galley equipment or personal cooking gear generally used by your ship. If your vessel does not have a galley space, these may be done ashore. _____
- iv. Demonstrate appropriate sanitation techniques for food preparation and meal cleanup. _____

6. Marlinspike Seamanship

- a. Name the various materials used to manufacture rope, the advantages and disadvantages of each, and the characteristics of laid and braided rope. Discuss the meaning of lay, thread, strand, and hawser. Explain how rope is sized and measured. _____

b. Using both large and small lines, tie and explain the use of the following knots:

- Stevedore’s knot
- French (double) bowline
- Bowline on a bight
- Timber hitch
- Rolling hitch
- Marline hitch
- Midshipman’s (taut-line) hitch
- Trucker’s hitch

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

c. Demonstrate your ability to secure a line to pilings, cleats, and rings, and to coil, flake, and Flemish a line.

_____	_____
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d. Demonstrate how to cut and heat-seal a synthetic line and whip the end of plain-laid line using waxed cord or similar material.

_____	_____
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7. Boat Handling

a. Name the principal parts of the masts, booms, spars, standing and running rigging, and sails of a gaff- or Marconi-rigged sloop, schooner, and ketch or yawl.

_____	_____
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b. Demonstrate your ability to handle a vessel with paddles or oars by doing one of the following: Safely board a rowboat and row in a straight line for 200 feet, stop, make a pivot turn, return to the starting point, and backwater in a straight line for 40 feet. Make a turn and return to the starting point.

OR

Safely board a canoe, kayak, or paddleboard and paddle a straight line for 200 feet. Make a turn and return to the starting point and backwater in a straight line for 40 feet. Demonstrate a draw stroke to move the boat sideways both right and left, and forward and reverse sweeps to spin the boat both clockwise and counterclockwise.

_____	_____
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8. Ground Tackle

a. Name the parts of a stock anchor and a stockless anchor.

_____	_____
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b. Describe five types of anchors. Describe how each type holds the bottom, the kind of bottom in which it holds best, and the advantages or disadvantages of each type. Discuss the challenges of using an anchor with paddlecraft compared to larger vessels.

_____	_____
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c. Calculate the amount of anchor rode necessary for your ship’s primary vessel in the following depths: 10, 20, and 30 feet in normal and storm conditions.

_____	_____
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d. Demonstrate the ability to set and weigh anchor appropriate for your vessel.

_____	_____
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9. Navigation Rules

a. Explain the purpose of *Navigation Rules, International and Inland*.

_____	_____
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- b. Know the general “Rule of Responsibility.” _____
- c. Define stand-on and give-way vessels for the following situations: meeting, crossing, and overtaking for both power and sailing vessels. _____
- d. Explain “Responsibility Between Vessels” (vessel priority). _____
- e. Explain the navigation lights required for power-driven and sailing vessels underway. Explain what is required for a vessel under oars. Describe the lighting requirements for paddlecraft. Explain why carrying a sound-producing device, such as a whistle, is important when operating a paddlecraft. _____
- f. Describe the sound signals for maneuvering, warning, and restricted visibility. _____

10. Piloting and Navigation

- a. Demonstrate your understanding of latitude and longitude. Using a chart, demonstrate that you can locate your position from given coordinates and determine the coordinates of at least five aids to navigation. _____
- b. Explain the degree system of compass direction. Explain variation and deviation and how they are used to convert between true headings and bearings to compass headings and bearings. _____
- c. Describe three kinds of devices used aboard ship for measuring speed and/or distance traveled and, if possible, demonstrate their use. _____
- d. Explain the 24-hour time system and demonstrate that you can convert between 12- and 24-hour time. _____
- e. Understand Coordinated Universal Time (Greenwich Mean Time or Zulu Time) and zone time. Demonstrate your ability to convert from one to the other for your local area. _____
- f. Make a dead reckoning table of compass and distances (minimum three legs) between two points, plot these on a chart, and determine the final position. Note: Ideally this requirement should be met while underway. If this is not possible, it may be simulated using charts. _____
- g. Discuss how a GPS unit works. Explain possible uses and functions including different screen views. Use a GPS unit to set a waypoint and navigate to the waypoint you have set. _____

11. Practical Deck Seamanship

- a. Name the seven watches and explain bell time. _____
- b. Explain the duties of a lookout and demonstrate how to report objects in view and wind directions with respect to the vessel. _____
- c. Name relative bearings expressed in degrees. _____
- d. While underway, serve as a lookout for two hours total. When boating in a manually propelled craft, boating alone or as a bow paddler for a tandem craft will meet this requirement. _____
- e. Demonstrate the use of wheel or helm commands found in the *Sea Scout Manual*. _____
- f. Describe the deck log kept aboard your ship’s principal craft. Contribute to a cruise log for three days of cruising (one cruise or a _____

combination of day cruises). Submit the logs to your Skipper.

OR

Keep a trip log for at least three paddling day trips, recording details of the waterway paddled, listing participants, and details of the paddling trip. Submit the logs to your Skipper.

12. Environment

- a. Discuss with an adult leader the Federal Water Pollution Control Act as related to oil discharges. Explain what a “Discharge of Oil Prohibited” placard is and if applicable find it aboard your ship’s vessels.
- b. Explain what aquatic nuisance species are and how you can help stop their spread.
- c. Explain how the principles of Leave No Trace can be applied to boating trips.

13. Weather

- a. Read and understand a local weather bulletin. Know how to obtain current marine and weather reports from the National Weather Service in your area by telephone or radio, or online.
- b. Find a river in your area and review the forecasted flow levels by using the National Weather Service’s Hydrologic Prediction Service’s map and graphs. Compare forecasted flow levels to average flow levels using the USGS National Water Information System web page.

14. Cruising

- a. Plan and participate in an overnight cruise. If you cannot sleep aboard your vessel, participating in a multi-day trip will meet this requirement.
- b. While on the cruise, perform the duties of a helmsman for at least 30 minutes. If underway in a paddlecraft, paddling independently or as a stern paddler/ steersman will meet this requirement.

15. Boating Safety Course

Successfully complete a boating safety course approved by the National Association of State Boating Law Administrators (NASBLA) offered by one of the following agencies: a state boating agency, America’s Boating Club, the United States Coast Guard Auxiliary, or other private or military education courses.

16. Service

- a. Log at least eight hours of work on ship equipment, projects, or activities other than ship meetings, parties, dances, or fun events.
- b. Participate with your ship for at least eight hours in community service projects.

17. Electives

Choose any three electives from the options listed in the electives section in Scoutbook.

Elective 1: _____

Elective 2: _____

Elective 3: _____

Able

1. Ideals

- a. Organize and conduct two impressive opening and closing ceremonies for your ship. _____
- b. Explain how our nation’s maritime history has contributed to our way of life. Note: “Explain” means to convey information to one or more people using any of the following methods (or something similar approved by your Skipper): video, computer slide show (PowerPoint presentation), storyboard (project board display), diorama, model, annotated photo album, verbal report, or written report. For comparison purposes, a written report of 500 to 1,000 words would form an appropriate explanation. _____

2. Active Membership

- a. Meet your ship’s bylaws requirement for active participation in your ship’s meetings and activities for six months. _____
- b. Prepare and present a program on Sea Scouts to a Scouting America troop, Venturing crew, Venturing Officers’ Association meeting, Cub Scouts, Order of the Arrow, Maritime Explorer Club, University of Scouting session, school class, or other youth group. Your presentation should last a minimum of 15 minutes and describe the activities of your ship and Sea Scouts. _____

3. Leadership

Either serve and fulfill the responsibilities of a crew leader or an elected officer of your ship or serve as an activity chair for two major ship events. Responsibilities should include planning, directing, and evaluating the event. (These events are in addition to the Ordinary requirement.)

OR

With a boat operator plan a boat dive trip and include all equipment, provisions and location. Using navigation charts to determine course to the location and topographical charts of the sea floor create a dive plan for the participants making the dive. _____

4. Swimming

Pass all requirements for Scouting America’s Lifesaving merit badge. _____

5. Safety

- a. Develop and use a customized vessel safety checklist for a boat used by your ship. _____
- b. Demonstrate your understanding of fire prevention on motorized vessels. _____

OR

Explain how entanglements or entrapments, such as but not limited to loose ropes and difficult to remove sprayskirts, can be avoided in kayaks, canoes, paddleboards and rafts. _____

- c. Know the classes of fires and the substances that will extinguish each type of fire. _____
- d. In a safe place, under adult supervision, demonstrate your ability to successfully extinguish a class A and a class B fire with an approved fire extinguisher. If required, see that the fire extinguisher used is properly recharged or replaced. _____
- e. Conduct a fire safety inspection of the vessel normally used by your ship or of your ship's meeting place. Note any fire hazards and report them to your ship's adult leaders. _____
- f. Complete the certification for standard first aid through the American Red Cross, the American Heart Association, or other approved organization's standard first-aid course. _____
- g. Complete the certification for CPR through the American Red Cross, the American Heart Association, or other approved organizations' course. _____

OR

Obtain certification from DAN®'s Professional Diver first aid course or an equivalent USCG approved course. _____

6. Marlinspike Seamanship

- a. Complete a back splice, eye splice, short splice, long splice, and a palm-and- needle whipping. _____
- b. Sew a flat seam, round seam, and grommet eye in canvas or sail material. Describe how each is used in construction of and the care of sails. _____
- c. Describe the parts of a block and explain how blocks are sized. Describe the following types of tackle: luff, gun, double purchase, single whip, and runner. With the help of another shipmate, reeve a double purchase tackle. _____

OR

On land, establish a 2-point load-distributing anchor point and a 3:1 mechanical advantage system (e.g., Z-drag) used to unpin paddlecraft. Use the system to haul a weight at least 5 feet across the ground. The system must include a progress capture system and a damper. _____

7. Boat Handling

- a. Demonstrate your ability to properly operate a small boat equipped with a motor. Included should be fueling, starting, leaving a dock, maneuvering, docking, and coming alongside.

OR

In a human propelled vessel, board the vessel and depart from shore, paddle or row the vessel in a straight line forward 200 feet and backwards 40 feet; spin in place 180 degrees or more to right and left; and move sideways 10 feet or more to right and left (only if the vessel uses paddles). Then, while underway, turn 90 degrees to right and left while maintaining headway and maneuver through a figure of 8 course with markers set three to four boat lengths apart. Finally return to shore and disembark the vessel. At all times, maintain proper trim and balance.

- b. Know the names and functions of lines used to secure a vessel to a wharf or pier. Understand and execute docking commands used in handling lines on your ship's primary vessel.

8. Ground Tackle

- a. Describe the various kinds of anchor rode and the advantages and disadvantages of each type.
- b. Identify the parts of the anchor cable starting with the anchor and ending at the vessel.
- c. Describe the methods of marking chain or rode and demonstrate that you know the chain or rode markings on your ship's vessel.
- d. While on a cruise assist in the construction of an anchor watch schedule and stand one watch.

OR

Establish a watch for boats secured to a shore or beach and stand one watch.

- e. Identify a capstan or windlass and explain its use in handling line, wire rope, or chain.

9. Navigation Rules

- a. Demonstrate a working knowledge of *Navigation Rules, International and Inland*.
- b. Explain vessel lights and day shapes for the following: towing (astern, alongside, pushing ahead, and cannot deviate), fishing, trawling, restricted maneuverability, not under command, underwater operations, constrained by draft, dredging, aground, and sailing vessels under power.
- c. Understand the system of aids to navigation employed in your area. Include buoys, lights, and daymarks, and their significance and corresponding chart symbols.
- d. Read in detail a National Ocean Service (NOS) chart, preferably for the area normally cruised by your ship, identifying all marks on it.

10. Piloting and Navigation

- a. Supervise the proper keeping of a complete deck log for three days of cruising (one cruise or a combination of day cruises). Submit the cruise logs to your Skipper.

OR

Keep a journal of paddling trips that includes names of participants, access points, waterway description, and notable events. Record at least three trips in the journal and submit to your Skipper.

- b. Lay a course of at least three legs and execute it using dead reckoning.

OR

Make a scuba dive, navigating three legs underwater using a compass, measuring distance and time, and logging all information. Use a chart to plan depth and topography.

- c. Demonstrate your ability to fix your position by the following methods: taking bearings from two known objects, running fix, and estimated position.
- d. Establish distance from a known object using “double the angle on the bow” and explain how to set a danger bearing.
- e. Enter three waypoints into an electronic navigation device (i.e., GPS, chart-plotter) and navigate your vessel to each point. Demonstrate the use of the MOB function on your electronic navigation device.
- f. Discuss how radar is used in situational awareness and the method of taking a radar fix.
- g. Explain the use of tide tables, current tables, and light lists, and how to update a chart using the Notice to Mariners.

11. Practical Deck Seamanship

- a. Demonstrate your knowledge of personal safety equipment needed while cleaning, maintaining, or repairing your vessel.
- b. Know the names, uses, sizes, and proper care of the common hand tools used by your ship.
- c. Identify and explain the use of the following: thimble, shackle, turnbuckle, pelican hook, and other ship’s hardware and fittings commonly used aboard your ship’s vessels.
- d. Demonstrate proper surface and coating preparation, coating techniques, care of stored coatings, and cleaning of brushes and tools used to maintain surfaces on your ship’s vessel.

OR

Demonstrate how to make a minor repair on a paddlecraft used by your ship.

- e. Explain techniques used for the maintenance, protection, and repair of hulls and decks on your ship’s vessel.

OR

Explain the techniques used for the maintenance, protection and storage of paddlecraft used by your ship.

12. Environment

- a. Demonstrate your knowledge of local environmental laws related to the proper storage, disposal, and cleanup of maritime coating materials, fuels, and other environmentally sensitive materials. _____
- b. Discuss with an adult leader the dumping of garbage in the marine environment. Review the contents of the MARPOL placard and locate it aboard your ship’s vessels. _____
- c. Explain the importance of protecting marine endangered species using a representative species as an example (mammal, bird, fish, or reptile). As a minimum, include a description of the species; its habitat, history, and current population numbers; and current steps being employed to help its recovery. Note: Refer to the definition and expectation for “explain” in Able 1b. _____

13. Weather

Demonstrate your ability to read a barometer, thermometer, anemometer, and weathervane. Be familiar with the Beaufort Wind Force Scale. _____

14. Cruising

Earn the Long Cruise badge. _____

15. Electives

Choose any four level 2 or higher electives from the options listed in the electives section following the Quartermaster rank in Scoutbook.

Elective 1: _____

Elective 2: _____

Elective 3: _____

Elective 4: _____

Quartermaster

1. Ideals

- a. Initiate a discussion on the ideals stated in the Sea Promise. _____
- b. Prepare a written analysis, offering recommendations for improvements regarding one of the following ship’s programs: bylaws and code, training programs, ceremonies, quarterdeck meetings, recruiting programs, or fundraising. _____

2. Active Membership

- a. Meet your ship’s bylaws requirement for active participation in your ship’s meetings and activities for six months. _____
- b. Present a talk or program at least 15 minutes long on Sea Scouts to a service club, religious organization, PTA, or other adult organization. _____

3. Leadership

- a. Quartermaster Project: While an Able Sea Scout, plan, develop, and demonstrate leadership to others in a service project that is helpful to any religious institution, school, or your community. The project plan must be approved by your Skipper and ship committee and approved by the council or district advancement committee before you start. This service project should involve your ship and at least one other group. You must use the Quartermaster Leadership Service Project Workbook, No. 420-011, to document your work. Note: The Quartermaster project is separate and distinct from a youth's Eagle Scout service project.
- b. Serve as a ship officer for at least six months.
- c. Organize and help conduct Scouting America's Introduction to Leadership Skills for Ships (ILSS) for your ship or serve as staff on an NYLT course, NYLT Leadership Academy, NAYLE course, Wood Badge course, or Seabadge course.

4. Swimming

Complete the requirements for lifeguard through Scouting America, the American Red Cross, or other approved organization's lifeguard course.

5. Safety

- a. Know the heavy-weather precautions taken aboard power, sailing, and paddle vessels when dangerous weather approaches, and demonstrate these precautions aboard the vessel used by your ship.
- b. Know the special precautions that should be taken when limited visibility is encountered.
- c. Teach Apprentice 5a and Ordinary 5a, 5b, and 5c requirements to a crew.

6. Marlinspike Seamanship

- a. Teach the Apprentice, Ordinary, and Able marlinspike seamanship requirements to a crew.
- b. Make an eye splice in double-braided line.

7. Boat Handling

- a. Take charge of the craft used by your ship and give all commands to the crew for picking up a mooring buoy and properly mooring the vessel in several wind and current situations.

OR

Take charge of three or more single occupant vessels and give all the commands necessary to move the group successfully to the opposite shore, across a river in moving water, or lake in windy conditions, without drifting downstream or down lake.

- b. Demonstrate and teach the principles of springing into and out from a dock, from both bow and stern, using an engine depending on the type of vessel used by your ship.

OR

Demonstrate and teach the proper way to enter moving water with a

canoe, kayak, paddleboard or raft, facing both upstream and downstream, while in an eddy and from shore.

- c. Teach Ordinary and Able boat handling requirements to a crew.

8. Ground Tackle

- a. Teach the Ordinary and Able anchoring requirements to a crew.
- b. Know the methods of bringing a vessel to anchor and a mooring with special emphasis on wind and current.
- c. Take charge of a vessel used by your ship and give all commands to the crew for setting and weighing anchor in several wind and current situations.

9. Navigation Rules

Teach the Ordinary navigation rules requirements and Able 9b and 9c to a crew.

10. Piloting and Navigation

- a. Teach the Ordinary and Able piloting requirements to a crew.
- b. Know the methods of fixing a boat's position in limited visibility.
- c. Create a route in an electronic navigation device that includes at least five waypoints. Use the electronic navigation device to navigate your route.

OR

Use an electronic navigation device (e.g., GPS) to determine coordinates and routes for at least five emergency exit routes for inland waterways. Identify the beginning of each route during a boating trip.

11. Weather

- a. Teach the Ordinary and Able weather requirements to a crew.
- b. Demonstrate your knowledge of the weather signs for your local area, including cloud types. Prepare a 48-hour forecast and compare your forecast with the actual weather that occurred.

12. Environment

- a. Discuss the three types of marine sanitation devices and the laws governing sewage discharge.
- b. Explain what gray water is and how it should be handled in your boating area.
- c. Write a 500-word report on an aquatic environment (freshwater, coastal, estuary, or sanctuary). Include in the report the location, habitat, history, animals and plants that inhabit the area, its importance to man, current regulations, and what boaters can do to help preserve it for future generations.

OR

Write a 500-word report on one of the United States of America's most endangered rivers (as identified by the list provided by the American Rivers organization) highlighting the threats and potential solutions. Discuss the impact, both positive and negative, of doing or not doing each potential solution.

13. Electives

Choose any four level 3 or higher electives from the options listed in the next section.

Elective 1:

Elective 2:

Elective 3:

Elective 4:
