Bronze Helmsman 1 Badge

The Crean Award:

Discovery:
Patrol Activity
Skills

Terra Nova:
Task/Role in Patrol
Patrol Activity
Skills

Endurance:
Patrol activity
Skills

Polar:
Share Skills
Skills

SPICES

Social
Physical
Intellectual

Adventure Skills

Paddling
Rowing
Sailing

The Activity:

Objective:
To achieve the Bronze Helmsman Badge

Activity Type:
Troop/Patrol Activity

Plan...Bronze Helmsman

May on the water resources

These resources are produced by the **Programme Team (Sea Scouting and Water Activities)** to encourage everyone to learn about and get on the water this Summer!

Every Scout in the country can get the Bronze Helmsman badge so why not add it to your Scout Troop or Patrol programme? This resource is aimed at outlining what is involved in the Badge and providing some of the resources for parts of the badge. It will be especially useful for Scouts whose programme has not previously involved many water activities or who do not use the sea scouting symbolic framework.

The Bronze Helmsman badge!

Plan...Bronze Helmsman

Aspects of the badge that are covered in this resource are:

- Ropework (Bowline and sheer lashing) & Anchor types
- Understanding longitude and latitude, and identify a position
- Explaining the main features and symbols on a chart
- Identifying the main terms used to denote direction from your boat
- Discovering the basic rules regarding rights of way for the crafts which may used by your Troop
- Discovering what an "Ensign" is and where it is flown
- Considering the different ways that you can support your local rescue service
- Being aware of the basic principles of a marine engine and the difference between 2 and 4 stroke

Not all elements of the badge are covered here as some are practical. Consult the Nautical Progress Scheme documents for more information

Click on the Scout Shop logo above to order your Bronze Helmsman badges!

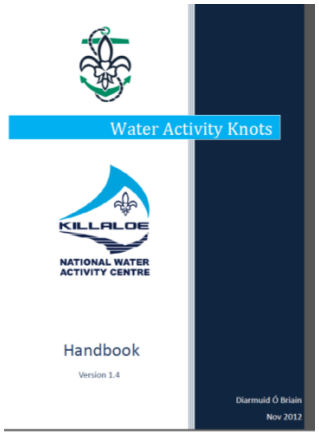
The Bowline

The bowline is used to create a loop at the end of a rope, generally around an object, maybe even a person. It does not loosen or jam.

Lay the rope across your left hand with the free end hanging down. Form a small loop in the line in your hand. Bring the free end up to and pass through the eye from the underside (the rabbit comes out of the hole). Wrap the line around the standing line and back down through the loop (around the tree and back down the hole). Tighten the knot by pulling on free end while holding standing line

Uses of a bowline

- On a mooring line to slip over a bollard
- For attaching jib sheets to the clew of the jib
- For rescue, as it does not tighten when placed around a casualty



Check out wateractivities.ie for a great book on knots for water activities!

The Sheer Lashing

Start with a Clove Hitch around one pole. Twist short end around long and wrap the rope around both poles, alternately going over and under each pole about three or four turns. Tighten the lashing by surrounding it with three or four frapping turns. Finish with a final Clove Hitch.

Possible uses of a sheer lashing

- As an emergency measure with a broken mast
- As an emergency measure with a broken oar or paddle
- To erect a tall flagpole

We can think of 3 reasons why you might use a sheer lashing:

Can you think of more???

Anchoring

This section will introduce 4 types of common anchor. This is sufficient for the Bronze Helmsman badge.

You should be able to identify the anchor type and names its parts.

The anchors covered are:

- Admiralty or Fisherman's
- CQR
- Danforth
- Grapnel

An admiralty, or fisherman's anchor

The admiralty pattern or fisherman's anchor is the most identifiable of all anchors and pops up regularly in all sorts of media. We're pretty sure no sailor ever got a tattoo of a CQR anchor!

It consists of a central shank with a ring or shackle for attaching the rode. At the other end of the shank there are two arms, carrying the flukes, while the stock is mounted to the other end, at ninety degrees to the arms. When the anchor lands on the bottom, it will generally fall over with the arms parallel to the seabed. As a strain comes onto the rode, the stock will dig into the bottom, canting the anchor until one of the flukes catches and digs into the bottom.

A CQR (coastal quick release) or plough anchor

So named due to its resemblance to a traditional agricultural plough many manufacturers produce a plough-style design, all based on or direct copies of the original CQR.

Ploughs are popular with cruising sailors. They are generally good in all bottoms, but not exceptional in any. The CQR design has a hinged shank, allowing the anchor to turn with direction changes rather than breaking out, while other plough types have a rigid shank. Plough anchors are usually stowed in a roller at the bow.

Owing to the use of lead or other dedicated tip-weight, the plough is heavier than average for the amount of resistance developed, and may take more careful technique and a longer period to set thoroughly. It cannot be stored in a hawsepipe.

The Danforth was designed in the 1940s for use aboard landing craft. It uses a stock at the crown to which two large flat triangular flukes are attached. The stock is hinged so the flukes can orient toward the bottom. Tripping palms at the crown act to tip the flukes into the seabed. The design is a burying variety, and once well set can develop high resistance. Its lightweight and compact flat design make it easy to retrieve and relatively easy to store; some anchor rollers and hawsepipes can accommodate a fluke-style anchor.

A Danforth will not usually penetrate or hold in gravel or weeds. In boulders and coral it may hold by acting as a hook. If there is much current, or if the vessel is moving while dropping the anchor, it may "kite" or "skate" over the bottom due to the large fluke area acting as a sail or wing. Once set, the anchor tends to break out and reset when the direction of force changes dramatically, such as with the changing tide, and on some occasions it might not reset but instead drag.

A Danforth anchor

A grapnel anchor

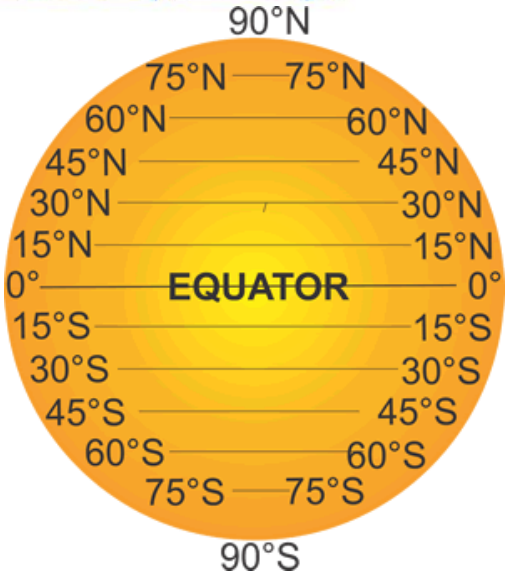
A traditional design, the grapnel is merely a shank with four or more tines. It has a benefit in that, no matter how it reaches the bottom, one or more tines will be aimed to set. A grapnel is often quite light, and may have additional uses as a tool to recover gear lost overboard. Its weight also makes it relatively easy to move and carry, however its shape is generally not very compact and it may be difficult to stow unless a collapsing model is used.

Grapnels rarely have enough fluke area to develop much hold in sand, clay, or mud. It is not unknown for the anchor to foul on its own rode, or to foul the tines with refuse from the bottom, preventing it from digging in. On the other hand, it is quite possible for this anchor to find such a good hook that, without a trip line from the crown, it is impossible to retrieve.

Test yourself!

- Identify the flukes on each of the 4 anchor types
- Discover what *a trip line* is and what purpose it serves
- Do you know anything about permanent forms of anchorage?
- Do you think it is important to know what weight an anchor is?

Longitude and Latitude

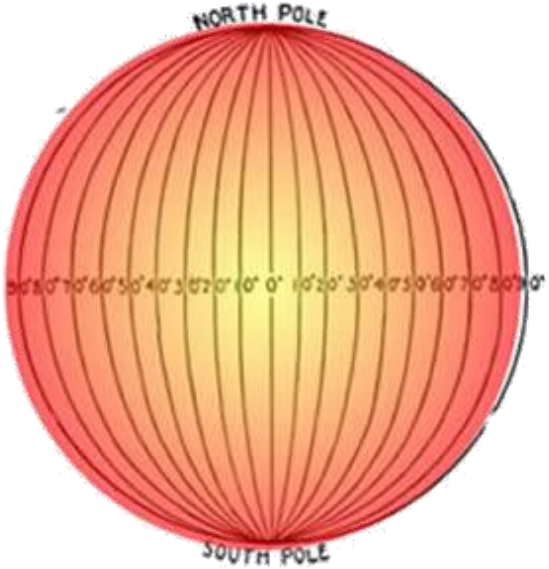


Aim: Understand longitude and latitude, and identify a position

In land navigation, we use the National Grid to define position. In sea navigation **Latitude** and **Longitude** are used

The lines of **Latitude**, or "parallels", run around the Earth, parallel to the Equator. They are designated by their angular distance (as measured from the Earth's centre) up to 90° North or South of the Equator. The latitude scale is on the east and west sides of a chart. Each degree is divided into sixty minutes.

The lines of **Longitude**, or "meridians", run North/South, from pole to pole. They are designated by their angular distance up to 180° East or West of the meridian which runs through Greenwich, near London. The longitude scale is on the top and bottom margins of a chart.



Coastal Navigation

Latitude is also used to measure distance. The distance on the surface of the earth represented by one minute of Latitude is known as a Nautical Mile or Sea Mile, which is divided into 10 Cables (one cable = approximately 200 metres). Six Sea Miles is about 7 Land Miles. The latitude scale on either side of the chart is used as a distance scale. In the diagram below, the divider is measuring a distance of 3 nautical miles. Never use the longitude scale to measure distance!

Identifying a position

Grab a chart or map and use this information to estimate the coordinates of a given position. There will be more on this in the Silver Helmsman badge

Parts of a boat

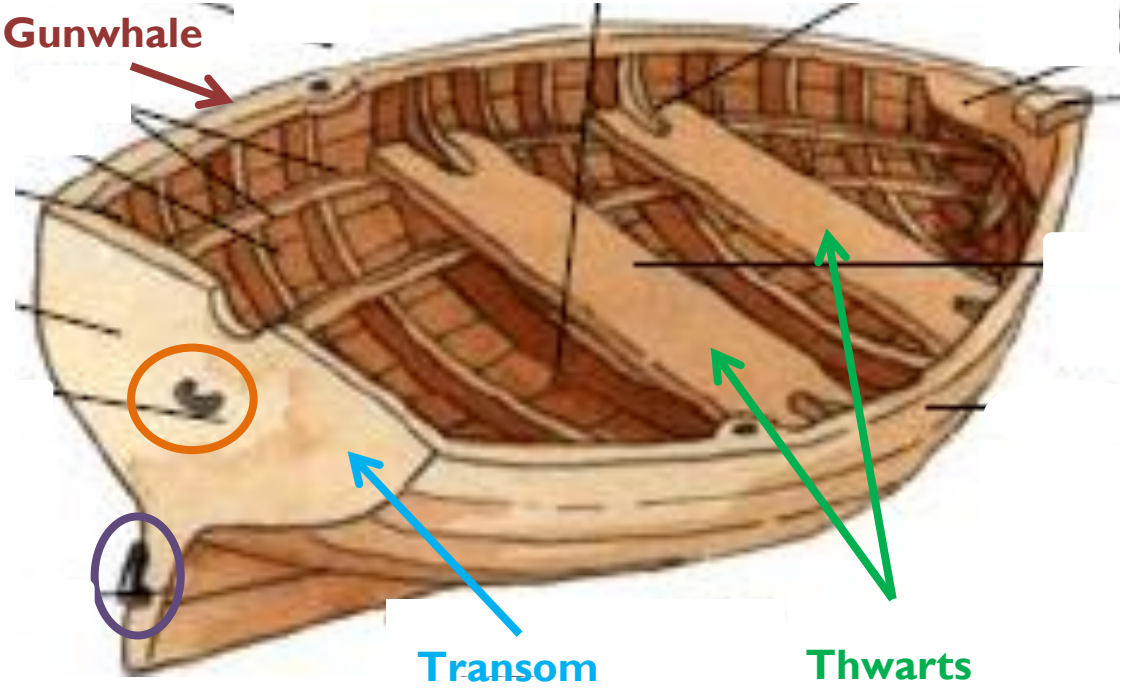
Aim: Understand what the following terms refer to:

- Gunwhale
- Gudgeon
- Pintle
- Thwart
- Tiller
- Transom

During your time in Scouting you will learn all the common names for parts of a boat. For this badge you need to add these 6 to the parts which you already know.

You are expected to know how to identify them on different types of boat.

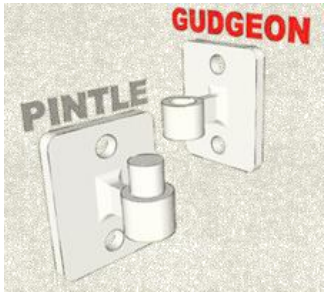
The parts for this badge are colour-coded on the diagram on this page.



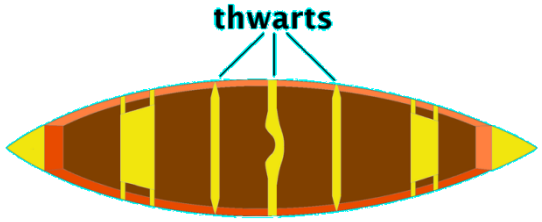
Gunwhale refers to the top edge of the side of a boat. In a wooden boat it is generally mounted inboard of the sheer strake, which is the top most strake (the long horizontal planks which make up the hull of such craft).

The **Transom** is the surface that forms the stern of a vessel. You will encounter this term when using sailing, rowing and power craft. It can be straight or curved. It is the surface to which rudders can be attached and to which outboard engines can be attached also.

A **gudgeon** is a socket-like, cylindrical fitting used to enable a pivoting (swinging) connection to a second component which slots into it, called a **pintle** fitting (*easy to remember because it looks like a pin*). Gudgeon and pintle connections are most often used in Scout boating to secure rudders to both rowing and sailing craft.



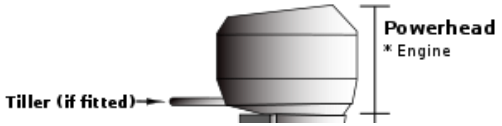
A **Thwart** is a strut placed crosswise (left/right) in a boat, to brace it across. In canoes and rowing boats it can also serve as a seat and this is the most common way your will come across this term in Scout boating.



A **Tiller** is a lever attached to a rudder of a boat that allows steering. The tiller can be used by the helmsman directly pulling or pushing it, but it may also be moved remotely using tiller lines or a ship's wheel. You will encounter this term when using sailing, rowing and power craft. The diagram on the previous page had no rudder and hence no tiller. See pictures below for examples of tillers

Simple tiller on a wooden boat

Using a tiller (the black rod) with tiller extension on a 420 sailing dinghy



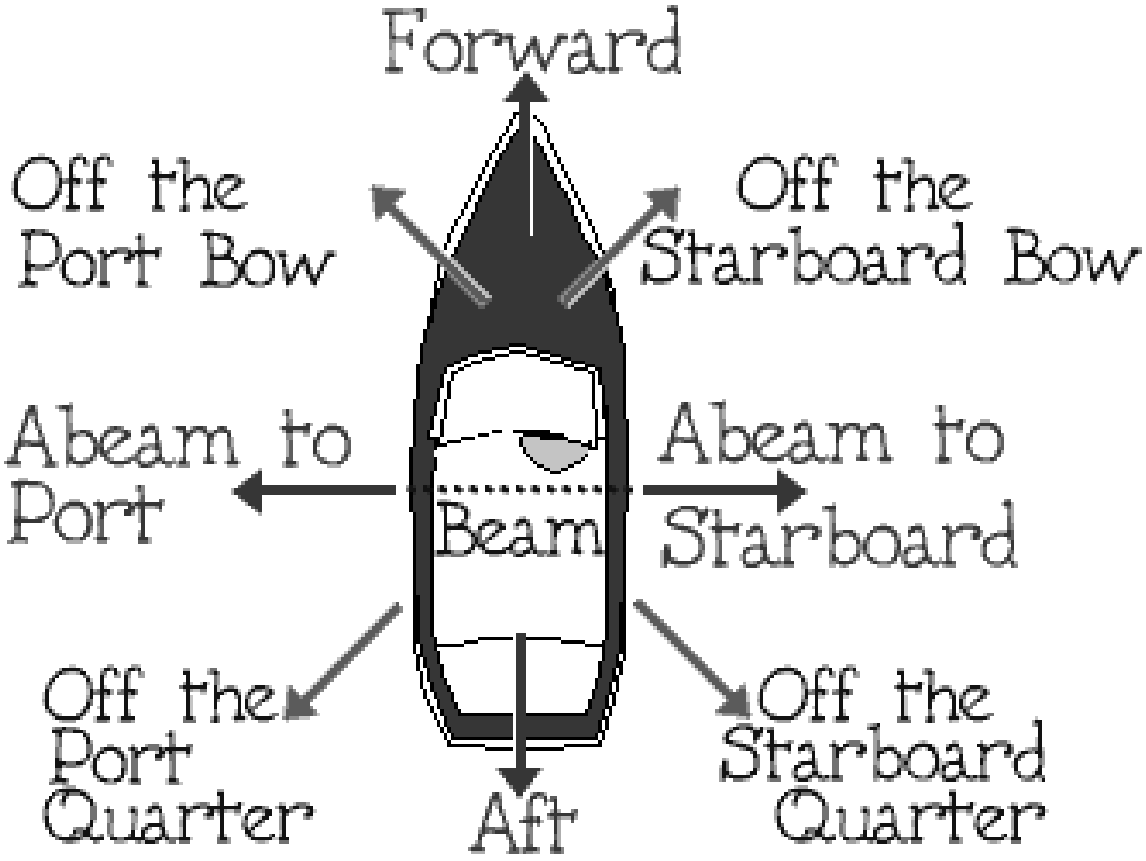
A tiller is also used to steer some outboard engines

Direction from your boat

Aim: Identify the main terms used to denote direction from your boat

Task!

Invent a game to teach this to a Scout Troop



Charts

Aim: Explain the main features and symbols on a chart

Charts were introduced in the Cub Scout Boatman badges and here we will develop some of those skills by consolidating the knowledge of the main symbols of relevance.

Like Ordnance Survey maps charts use symbols to represent different features. Charts show lighthouses, navigation buoys and lights, shoals, sandbanks and rocks, as well as features on the land which can be useful for coastal navigation. A selection of various symbols commonly used in charts is given opposite.

Your navigation skills must be grounded in practical experience with real charts and an element of guided exploration. Seek out opportunities to get such experience


Anchorage


Anchoring prohibited


Boarding place, position of a Pilot-Cruising Vessel


Marina

Dangerous underwater rock of known depth

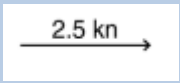

Rock (islet) which covers and uncovers, height above chart datum


Rock awash at the level of chart datum


Wreck showing any portion of hull or superstructure at level of chart datum

Wreck, least depth known by sounding

Flood stream (current) with rate



Ebb stream (current) with rate

Major light, minor light, lighthouse

Lighted beacon

Lifeboat Station


Tidal Diamond - Position of tabulated tidal data

Rights of way – The absolute basics!

Aim: Discover the basic rules regarding rights of way for the crafts used by your Troop

So the rules relating to rights of way on the water can often be very complex and specify situations you are unlikely to find yourself in. So here we have laid out some of the absolute basics.

You will need to be familiar with the specifics of the craft you are using and area in which you will do your boating, whether that be at sea, or on inland waterways.

Vessels in order of priority (basics!)

1. A vessel not under command
2. A vessel restricted in its ability to manoeuvre
3. A vessel constrained by its draught - the distance between its waterline and its keel
4. Fishing vessels
5. Vessels under sail
6. Motor vessels

Sailing vessels in order of priority (basics!)

1. A sailboat on a starboard tack (wind coming from its port side)
2. A sailboat on a port tack (wind coming from its starboard side)
3. A windward sailboat (where both are on the same tack)

The International Regulations for Prevention of Collisions at Sea, more often known as the "Rules of the Road at Sea", regulate the movement of vessels, so as to avoid a collision. As this can be tricky area, we list some **basic principles** you should be aware of:

- Two boats on a converging course should both turn to starboard and when in a channel keep to the starboard side, thus passing each other port to port
- When diverting course, the avoiding action should be early, substantial and safe
- An over-taking boat should stay well clear of a boat being overtaken
- Power gives way to sail unless the sailboat is overtaking
- Paddlers should give way to vessels under oars
- Do not create a wake which causes unnecessary danger to other boats or people

Task!

Grab some model boats and act out some scenarios with other Scouts

Ensigns

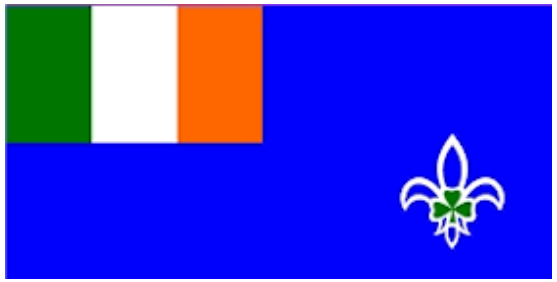
Aim: Discover what an "Ensign" is and where it is flown

An ensign is a form of national flag used at sea. Ensigns have to be approved by the Chief Herald of Ireland.

The Scouting Ireland Sea Scout Ensign is a blue flag with the Irish tricolour in the canton, defaced with the Scouting Ireland emblem on the fly side. (*Do you know the names of the parts of a flag? Why not do some research?)*

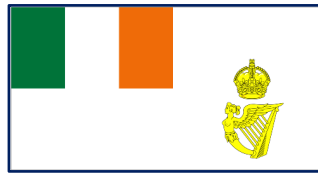
It is to be flown as the flag with the highest preference and on a flagpole with a gaff and yardarm, it should be flown at the peak of the gaff. (*Do you know the names of the parts of a nautical flagpole? Why not do some research?)*

An ensign should never be carried on parade nor should the tricolour and an Ensign be flown at the same time.



The Scouting Ireland ensign

Did you know?
On rare occasion, the Chief Herald of Ireland has given permission for white, rather than blue, ensigns to be assigned. Two examples of this are Malahide Yacht Club and the Royal Irish Yacht Club.

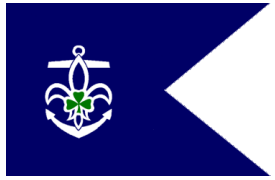


The white Ensign of the Royal Irish Yacht Club

Scouting Ireland Sea Scout pennant

Members belonging to a yacht club or organisation may fly their club's unique pennant/burgee both while underway and at anchor. Vessels may fly the pennant/burgee from the main masthead or from the masthead of a flagpole on land as appropriate.

Did you know? Scouting Ireland's Programme Commissioner (Sea Scouting & Water Activities) may fly the Commissioner's burgee when he/she is on board. It is a swallow-tail version of the Sea Scout pennant.



Scouting Ireland Commissioner's burgee

Supporting your local rescue service

Aim: Consider the different ways that you can support your local rescue service

The main rescue services that might be in your area are:

- RNLI Lifeboat (volunteers)
- Coast Guard (volunteers and full time-members including helicopter capability)
- Mountain Rescue (volunteers, 12 teams around Ireland)
- Cliff Rescue (17 Coast Guard operated teams, plus Tramore & Ballybunion independent services)
- Irish Cave Rescue Organisation

Mountain Rescue Ireland
Operational Map

Coast Guard helicopter Rescue 118

Supporting your local rescue service

There are three main things you can do for your local rescue service. What do you think your Scout Troop could do?

1. Awareness raising
   like inviting crew members to give a talk, visit an activity or present awards

2. Showing your appreciation
   like dropping in some nice treats to the station or running a "thank you" night

3. Fundraising
   like a cake sale or a sponsored swim

Marine engines

Aim: Be aware of the basic principles of a marine engine and the difference between 2 and 4 stroke

This information is not currently in any Scouting Ireland publication so here is your chance to learn!

A marine engine generally works by propulsion, that is to say the boat moves forward by virtue of the motion of a propeller.

It is likely that the engines you will encounter will typically use a manual pull-cord start system, with throttle and gearshift controls mounted on the body of the motor, and a tiller for steering.

The difference between 2 and 4 stroke engine – the basics!

A ***2 stroke engine*** is so-called because its basic process has two parts:
1. Fuel/air enters the engine and mixes
2. Ignition takes place and fumes go out an exhaust

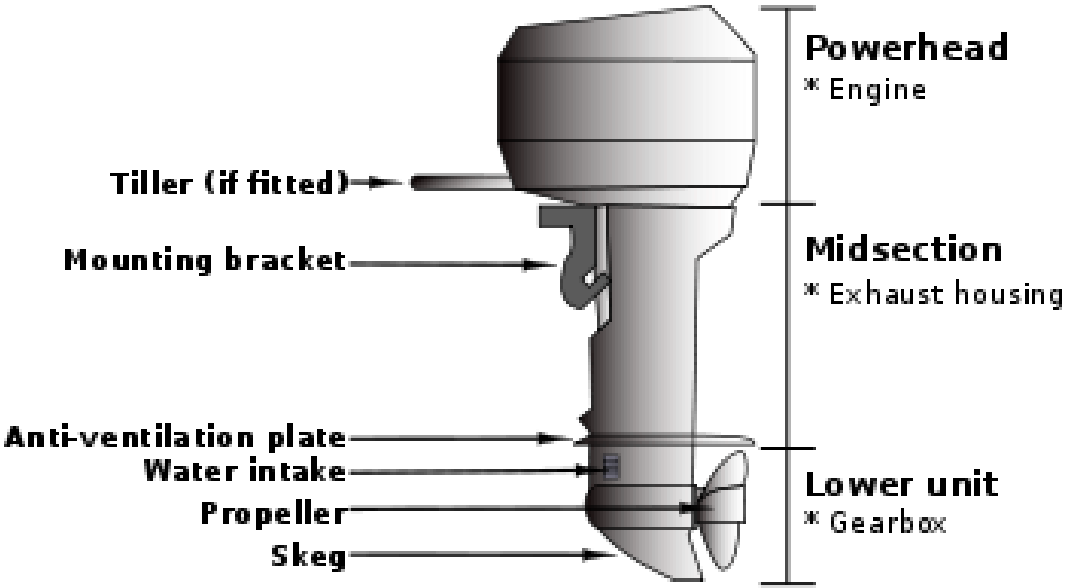
- A 2 stroke engine is usually more powerful than a 4 stroke
- It is a lot louder
- It is a more simple design and easier to fix

A ***4 stroke engine*** is so-called because its basic process has four distinct parts:
1. Fuel goes and air enters the engine
2. They mix
3. Ignition takes place
4. Fumes go out an exhaust

- A 4 stroke engine is usually more economical
-It makes less noise
- It has more parts than a 2 stroke

Remember!

It is vitally important that if you are not familiar with a particular engine type you should seek advice from someone who is. This is particularly important in terms of safety precautions to be taken, the fuel mix and transportation of the engine



A standard outboard engine

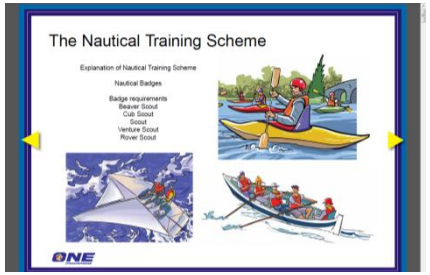
As you progress through the **Nautical Training Scheme** you will learn more about engine functions, about engine maintenance, starting and stopping and you will prepare to take responsibility over a power boat.

For the moment, why not do some research on how various engines work on youtube, learn some of the safety features and seek out opportunities to learn both theoretically and practically in a safe environment?

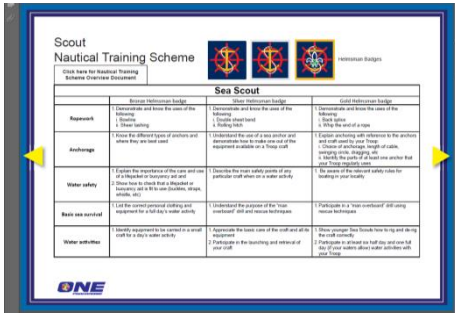
Did you know?

Once you are **16** you can take the National Powerboat Licence Course

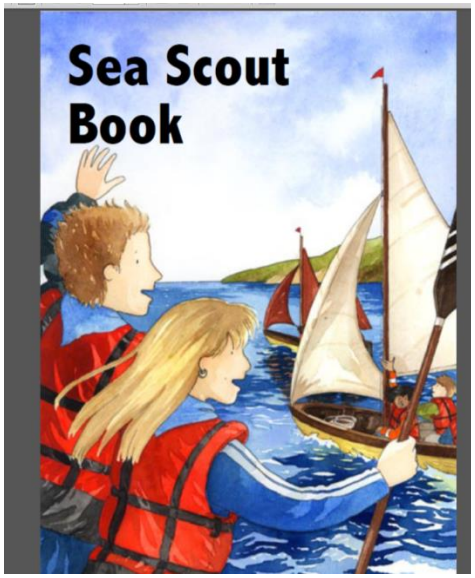
Additional Resources



Nautical Training Scheme overview document



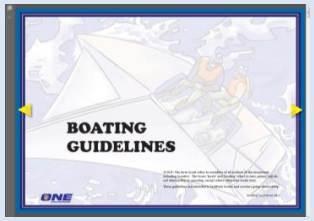
Nautical Training Scheme Scout section document



Sea Scout Book

National Water Activities Centre rope-work book

The Scouting Ireland Boating Guidelines – your safety bible!!



Just click on any of these documents to be brought to the full booklet!

Review "SPICES"

Social

- Relationships ☐
- Communication Skills ☐
- Other Cultures ☐
- Community Involvement ☐
- Promise & Law ☐

Physical

- Eat Well ☐
- Personal Hygiene ☐
- Balanced Lifestyle ☐
- How Body works ☐
- Physical Limitations ☐
- Health Choices ☐
- Access Help ☐

Intellectual

- Achieving Goals ☐
- New Ideas ☐
- Learn from Decisions ☐
- Team Member ☐

Character

- Promise & Law ☐
- Friends & Friendships ☐
- Plan before do ☐
- Ensuring Fairness ☐
- Respect ☐
- Differences & Views ☐
- Following Dreams ☐
- Live the Scouting Spirit ☐

Emotional

- Aware of feelings ☐
- Asking/Giving Help ☐
- Responsibility for Emotions ☐
- Controlling Emotions ☐
- Going Further ☐
- Beliefs & Values ☐
- Developing Talents ☐

Spiritual

- Promise & Law ☐
- Impact on Environment ☐
- Reflection ☐
- Changing Beliefs ☐

Review

Adventure Skills

Paddling

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Rowing

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Sailing

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New to Water and Sea Activities?

How did you find your water programme?

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What could improve your water activities?

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Patrol Review

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What will we do next?