BRITISH CANOEING
AWARDING BODY

Surf and Swell

Sample Programme and Session Plans

BCAB Surf and Swell Module

Sample Programme and Session Plans

This document provides an example of the British Canoeing Awarding Body (BCAB) Surf and Swell Module and the accompanying plans for the 6 activities.

Tutors are required to obtain, understand and consider the participants' current understanding, knowledge and the craft and environment that they paddle. This can be done prior to activity 1, through introductions or part of a more formal process.

Notes:

1. Tutor to participant ratio is maximum 1:8.
2. A module specific eLearning is available to learners, which could be considered as an appropriate method of a learner accessing the information or used to compliment delivery.
3. Tutors are required to consider the aspirations of the learners and develop their knowledge appropriately in the context of where they are paddling. For aspirants Leaders that want to operate on the sea, additional methods and practices may need to be covered.
4. If delivering using a blended approach, (on and off the water), Tutors are required to obtain an understanding of water confidence and ability in the environment that will be used. This can be done through introductions or part of a more formal process.

The main focus for the Tutor is to ensure all participants are able to contribute, explore and practice. The 3-hour module does not take into account introductions, information gathering, administration, or any logistics, the timings provided are for the delivery of the activities.

All activities are interactive sessions, discussing and using resources, exploring and practising the knowledge to better understand Surf and Swell to aid decision making and planning.

Participant prerequisites

- There are no prerequisites for this module.
- Tutors should check participants' suitability to attend the course, as well as having appropriate mechanisms for anyone under 18.

Venue

The Surf and Swell Module can be delivered online, blended or face to face, of which Tutors should ensure all participants are able to engage throughout.

Course duration

The Swell and Surf Module is a minimum of a 3-hour programme that consists of 6 activities, which can be delivered in one session or modular.

Surf and Swell Module

Activity	Time	Activity Outline
Activity 1	20 minutes	Introduction to swell and surf • How is swell created? • Introduce wind swell and ground swell
Activity 2	20 minutes	Wind swell • Wind swell and fetch • Wind swell characteristics and how it can affect paddlers
Activity 3	20 minutes	Ground swell • How ground swell is formed • Factors affecting ground swell
Activity 4	45 minutes	Surf forecasting • Introduction to surf forecasting • Period and height • How swell becomes waves/surf • Understanding surf forecasts
Activity 5	30 minutes	Environmental considerations • Introduction • Reefs, gravel bars and rouge waves • Dumping Surf
Activity 6	45 minutes	Other types of waves and rip currents • Wind and tides • Tide races • Overfalls • Trip considerations • Rip currents

Surf and Swell Module: Activity 1

Activity Title:	Introduction to swell and surf
Time:	20 minutes

Activity Outline:

- How is swell created?
- Introduce wind swell and ground swell

Delivery:

Introduction to Swell and Surf:

This session is all about setting the scene and introducing new concepts and vocabulary. Share with learners that all of the following elements will be covered in further detail as we progress through the module.

How is swell created?

Suggested activity - get participants to gently blow on their cup of tea as if they were trying to cool it down. What side of the cup are the biggest ripples on? Relate this concept to the real world of oceanic storms. Link to Weather Module on high and low pressure.

Clarify the difference between swell and surf/waves for the purposes of this module. Use swell to describe wave behaviours in the open ocean and the term waves/surf when describing what happens to swell when they meet the land/beach. All of these terms are used interchangeably and it doesn't really matter what you call them, the understanding is the key element.

Introduce wind swell and ground swell:

- Ground swell - powerful high energy swell that can travel beyond its place of origin.
- Wind swell - localised swell created by the prevailing wind.

Question: What type of swell did we create when we blew on our hot drink?

Surf and Swell Module

Activity 2

Activity Title:	Wind Swell
Time:	20 minutes

Activity Outline:

- Wind swell and fetch
- Wind swell characteristics and how it can affect paddlers

Delivery:

It is envisaged that the following will be covered through the exploration of practical examples rather than several individual sections.

Wind swell and fetch:

Introduce the concept of fetch and how this interacts with wind swell. Explain to learners that the concepts we are learning about also apply to inland water such as lakes and lochs.

Suggested Activity

Using maps or charts, find today's weather forecast and use it to identify areas with the largest and smallest examples of the principle of fetch.

Wind swell characteristics and how it can affect paddlers:

Explore the concept of “an uncomfortable sea state” and how these can be created by wind swell. Because the waves are close together, the board/boat is constantly being moved by the wave energy.

Suggested activity - what direction could be most comfortable to paddle in during wind swell conditions and which would be most uncomfortable? What are the implications for you personally as a paddler and/or leader/coach?

Surf and Swell Module

Activity 3

Activity Title:	Ground Swell
Time:	20 minutes

Activity Outline:

- How ground swell is formed
- Factors affecting ground swell

Delivery:

Introduce the concept that swell (wind or ground) is affected by a number of different factors - we will look at these in more detail as the module progresses. For now, we are looking at ground swell in isolation to further our knowledge and understanding.

How ground swell is formed:

Explain how ground swell is created making links to wind swell, fetch and low-pressure systems from the weather module.

Suggested activity - You could use the example in the eLearning or go to the Met Office website or weather app and see if there are any likely weather systems that might generate a ground swell (it doesn't necessarily need to be in the UK). Look at surfing hotspots from around the world, there will usually be an illustrative example nearby.

Surf and Swell Module

Activity 4

Activity Title:	Surf Forecasting
Time:	45 minutes

Activity Outline:

- Introduction to surf forecasting
- Period and height
- How swell becomes waves/surf
- Understanding surf forecasts

Delivery:

Introduction to surf forecasting:

Explore the principle with learners that, as with weather forecasting, all the apps and websites cannot get it right all the time. Local variations, weather conditions etc., can all have an effect on predicting the surf accurately.

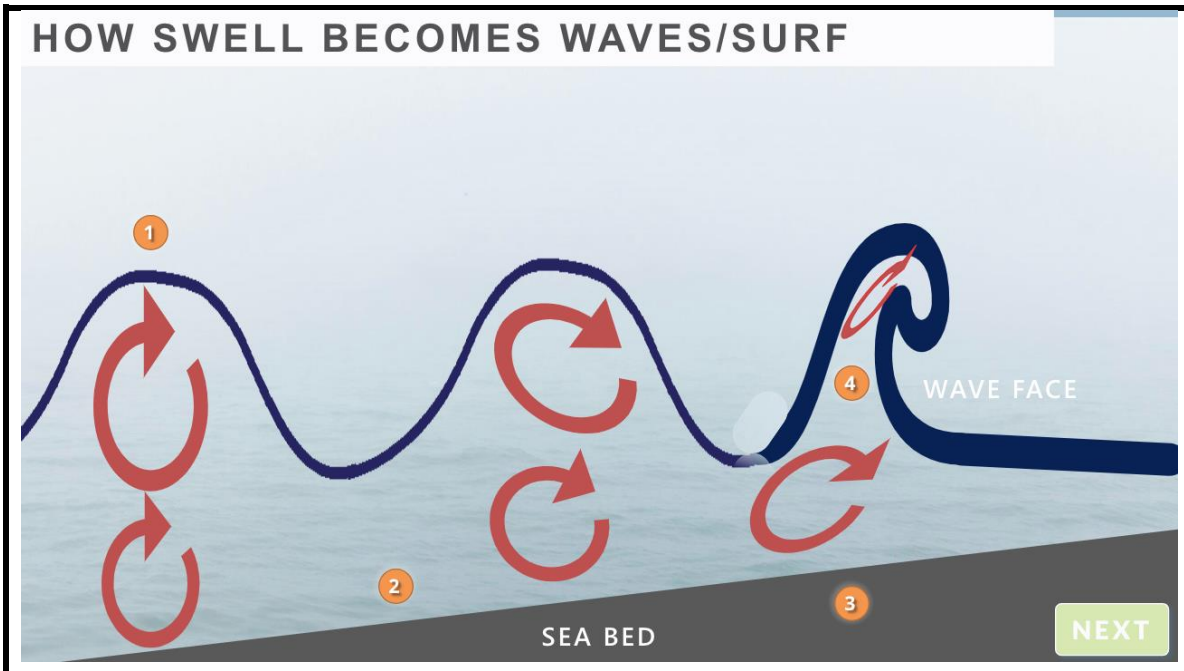
Period and height:

Explain using diagrams (these could be in the sand on the beach) what the wave period is and how swell height is measured. Define the difference between wind swell and ground swell in terms of wave period.

Suggested activity - share some different surf forecasting apps and websites. Can the learners identify the swell period and wave height for today? Is it ground swell or wind swell? Weak or powerful?

How swell become waves/swell:

Explain to learners, filling in any gaps in their knowledge, how swell becomes waves - you could use the diagram from the eLearning or your own diagram/illustration. Reiterate that we are just looking at the principle at this point in isolation - in reality there are different factors that can affect this and we will look at them in more detail as the module progresses.



Understanding surf forecasts:

Explore different surf forecasting apps and websites with learners, identifying the key information:

- Swell height
- Wave height
- Wave period
- Swell direction
- Wind speed and direction

Note: ensure learners are confident in recognising if their forecast is measured in feet or meters - there is a big difference between a 3ft wave and 3m wave!

Wind will have a big impact on the "quality" of the waves when surfing - explore the concepts of clean and messy waves along with the pros and cons of both. Make sure the safety aspects are covered and understood with relation to paddling in offshore winds.

Suggested Activity - use a range of sample forecasts from a range of different sites can the learners identify the "best day" for them to go surfing? This does not

necessarily mean the biggest day, it is dependent on experience and what they want to get out of their session.

A map of somewhere like Cornwall can be useful as learners can take a general surf and weather forecast and then identify where might be good to go for a surf i.e., north or south coast, south or west facing beaches etc. They can then check their prediction using an app for that location.

Surf and Swell Module

Activity 5

Activity Title:	Environmental Considerations
Time:	30 minutes

Activity Outline:

- Introduction
- Reefs, gravel bars and rouge waves
- Dumping Surf

Delivery:

Introduction:

Introduce the notion of transferring learning from the previous activities to different environments. When we think of surf, we typically think of beaches but the principle of a change of water depth (suddenly or gradually) will cause swell to form waves and break.

Reefs, gravel bars and rouge waves:

Reefs and gravel/sand bars often cause a sudden change of water depth causing swell to form waves and break, sometimes quite suddenly. This can make paddling exciting or in some cases dangerous.

Suggested activity - using an OS map, can learners identify areas that might have coastal reefs? This could then be explored practically or using a chart of the same area to see if they were correct. The last piece of the puzzle would be to look at surf forecasts to try and determine if the reef is likely to be exposed to swell in; some of the time, all of time or none of the time…would you paddle there?

Rouge waves - explore the concept that waves are not made in a factory, just because the forecast says 3ft, it does not mean they will all be the same size. Some will be smaller and, in some instances, they can be significantly bigger -

discuss the implications of this with regard to reefs, rocky landings, paddling in caves, gullies etc.

Dumping surf:

Check learners' existing knowledge and fill in any gaps around the concept of dumping surf. Also explore the implications of launching and landing from beaches where dumping surf is present.

Suggested activity - using a nautical chart, can learners identify beaches that will have dumping surf and beaches that will have more usable spilling waves to surf on. Can they identify a beach that has both i.e., a beach that has a gradual sandy beach but at high water hits a pebble ridge and becomes dumping surf for example?

Note: dumping surf beaches rarely feature on surf forecasting apps/websites so it is even more important that learners can identify areas where potentially, they may encounter dumping surf.

Surf and Swell Module

Activity 6

Activity Title:	Other types of waves and rip currents
Time:	45 minutes

Activity Outline:

- Wind and tides
- Tide races
- Overfalls
- Trip considerations
- Rip currents

Delivery:

Wind and tides:

Explore the terms wind with tide and wind against tide. Practical examples should be used to illustrate these principles ensuring principles from weather and tides modules are referenced such as wind strength and direction and fetch.

Tide races:

Check learners' existing knowledge around tide races and their formation, completing any gaps in their knowledge. This should be explored using practical examples using maps, charts, guidebooks etc. The interaction (and potential amplification) of wind and swell should also be covered.

Overfalls:

Check learners' existing knowledge around tide races and their formation, completing any gaps in their knowledge. This should be explored using practical examples using maps, charts, guidebooks etc. The interaction (and potential amplification) of wind and swell should also be covered.

Trip considerations:

As with most elements in this module it is rare to find any of the above in isolation.

Suggested activity - Put it all together. Learners plan a trip in an area that experiences regular swell. This could be using information gained from websites on the day or pre-prepared examples. Things to consider:

- What will launching/ landing look like at the start of the day, end of the day, lunch time, emergency etc.?
- If headlands are present, how will the wind and swell interact at those points?
- Are there areas of reef present?

Rip currents:

Explore learners' existing knowledge of rip currents and complete any gaps in their knowledge. Ensure you cover that rip currents are not a type of wave but are found where waves are present.

Define the two most common types of rip currents:

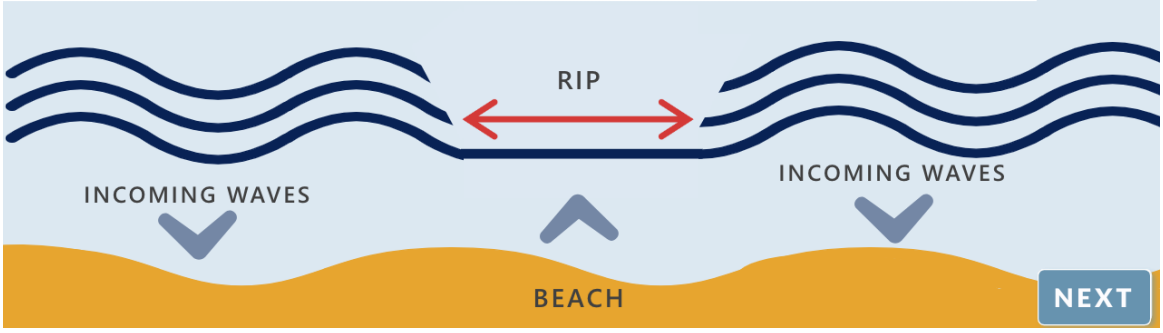
- Permanent
- Fixed

Explore their identification as well as identifying the opportunities and dangers that rip currents present.

WHAT TO LOOK OUT FOR

If you find yourself in a rip, paddle parallel to the beach until you are clear of the rip and then head to the beach or back out to sea.

If you are unsure, go to a lifeguarded beach. For more information see RNLI advice here.



Note: There is no such thing as a rip tide, although in areas of significant tidal flow, the effects can look similar but are being created in two very different ways.