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Before you get started on your document, please take a few seconds to read this first page to find out what other free resources are available from the Seafood Training Academy and Seafish.

Seafish are about to publish/have published a brand new Guide to Seafood. For some time after its launch, the new seafood guide will only be available as a high quality printed publication from Seafish in Grimsby or Edinburgh. Watch out for news on the launch later this year (2013) to find out how you can purchase your copy.

Qualifications in fish and shellfish

There are new qualifications for managers, supervisors and others in all forms of fish and shellfish businesses, from shellfish companies through to fish and chip shops.

To find out more start here with these information [leaflets](#).

Free videos, free learner workbooks and resources.

These are the kinds of support that Seafish and the Seafood Training Academy will make available to help apprentices and others get the best out of the new fish and shellfish qualifications.

To access 100+ free fish and shellfish video programmes produced by Seafish – look at Seafish’s youtube channel – [seafishtheauthority](#).

The Seafood Training Academy online Library is the place to go for downloads of documents, Library guides, study guides etc.

Have a cruise around the [Seafood Academy](#) site – you’ll be surprised at what you can find there, and it’s all free.

Thank you for taking the time to read this, and I hope you enjoy the rest of your Seafood Guide.

Lee Cooper
Seafish and the Seafood Training Academy.

General Guide

This will help to explain what flexible training is all about. It will help you to make best use of your flexible training module.

WHAT'S SO GOOD ABOUT FLEXIBLE LEARNING?

Flexible learning gives you the freedom to choose.

You study:

- What you like;
- Where you like;
- When you like;
- At a pace to suit you.

You can pick the subjects you want. You don't have to be in a certain classroom at a certain time. You won't be bored because the teaching is too slow, or lost because it's too fast.

You seldom need any qualifications before you are allowed to study.

All this freedom lets you fit your studying into your daily routine.

The best thing about it for most people, is that they can study without taking valuable time off work.

THINGS YOU SHOULD KNOW ABOUT YOUR MODULES

What is a module?

A module is the name we have given to a study package. It will have a printed text.

Each module will be divided into segments. You could think of each segment as a lesson. Each segment has a short introduction and a series of aims.

The Fish Frying Skills training materials consist of two modules, which are the Introduction to Fish Frying Skills module and the Introduction to Food Hygiene and Health & Safety in Fish Frying module.

These materials can be used to provide some of the underpinning knowledge for the Fish Frying Skills qualification awarded by Seafish and The National Federation of Fish Friers.

EXERCISES

At the end of each segment there are a series of exercises for you to complete. These are included to help you with your learning and development. Completion of these exercises will assist you in gaining confidence and will also help you to complete the assessment process.

Upon successful completion of the exercises, you should sign and date in the space provided. This will act as evidence that you have read through the segments and completed the exercises.

You must have **ALL** exercises in your modules signed off, dated and available for your assessor to look at on the day of your assessment. Failure to do so could jeopardise the outcome of your assessment.

HELP IF YOU GET STUCK

At the time of obtaining your module you will be told of any support which can be arranged.

This might be through one of the following:

- Telephone;
- Face to face meeting;
- Letter.

HINTS ON STUDYING

When?

Try to get into a regular study routine. Set aside times for study but be ready to give and take a bit. Miss one of your planned sessions if you must, but try to make it up later.

Set yourself realistic targets such as 'I will finish segments one and two by this weekend' and stick to them!

Grab the chance to study at odd moments. You'll be amazed how much you can learn in fifteen minutes. It's difficult for the average person to really concentrate for more than twenty minutes at a time anyway. A word of warning – don't think you can learn anywhere. You need to be able to concentrate, there are often distractions which prevent this.

How?

- Time spent just reading a module is not the same as time spent learning.
- You must become involved, the best learning happens when you're active, e.g. completing the exercises and making notes.
- Don't study for too long without a break.

This module will remind you of suitable places to stop for a while, but if you need a break earlier, take one. It's entirely up to you.

Where?

Try to find somewhere where you will not be distracted. Almost anywhere will do. It all depends on how you are placed at home and at work. Don't forget your local library.

The secret is, **be flexible**. All you need is somewhere where you can get on with it and not be disturbed.

Carry your module with you when you can. Try to find gaps in your normal routine when you could do some useful work.

Now that you've decided to have a go, **stick with it!** Don't give up. Most people find studying hard at times, this is quite natural. It is also quite natural to need help with parts that you find especially difficult. Don't be afraid to ask for help. I'm sure that you'll find it worthwhile.

ASSESSMENT

Once you have read the two modules, (Introduction to Fish Frying Skills, Introduction to Food Hygiene and Health & Safety in Fish Frying), completed all of the exercises and signed them off, you should be ready to complete your assessment.

An assessor will arrange a time and a date to come and assess you at your place of work. The assessment will consist of a multiple choice exam paper, practical tasks and answering questions asked by the assessor.

Upon successful completion, a jointly branded (Seafish and the National Federation of Fish Friers) certificate will be awarded to the candidate.

Segment One - A Guide to Buying, Preparing, Frying and Storing Fish

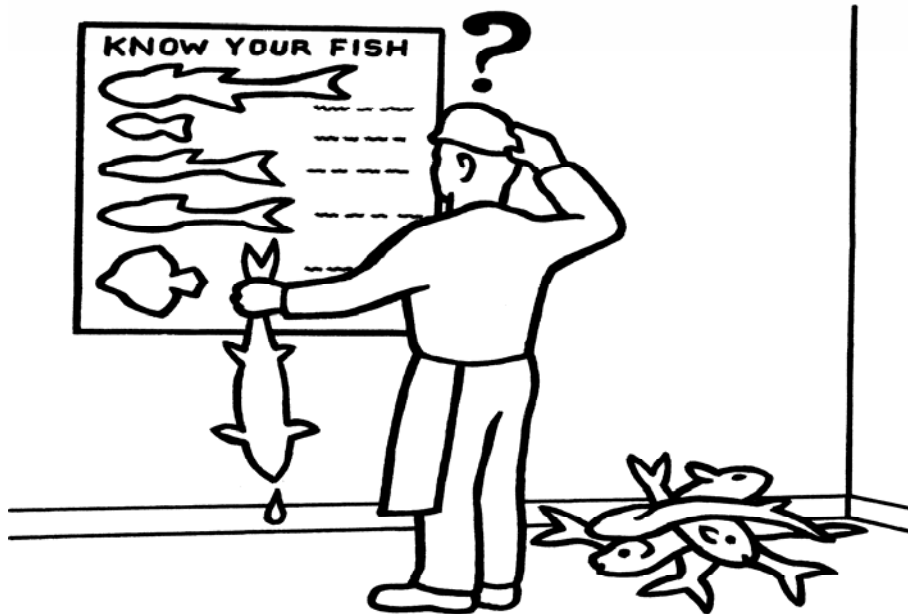
INTRODUCTION

Buying, preparing and storing fish correctly has a big impact on a fish frier's business. Conducting these tasks correctly can lead to the successful operation of a business. However, if any of these jobs aren't completed to their required standard, then this will have a huge impact on the profitability of the business.

AIMS OF THE SEGMENT

After studying this segment you will be able to:

- State what to look for when buying fish;
- List some types of fish available;
- Explain the advantages of wet and frozen fish;
- State where to buy fish;
- State the importance of quality and the characteristics to look for when buying fish;
- Identify the correct methods of preparing fish by looking at skinning, boning and cutting;
- State why minimising the wastage of fish is important;
- Identify an average portion size with regard to: customer relations, the cost of fish and wastage;
- State the importance of taste and how this can be measured;
- Outline some of the rules for storing wet fish and frozen fish.



BUYING FISH

Fish is obviously one of the most important commodities you'll buy for your business, so it's important that you decide what sort of fish you want for your customers and then find the best way of buying it.

Whatever fish you buy, it is important that it is of the **required quality**.

If you are going to buy **wet fish fillets** you should look for:

- Clean white fillets;
- No worms;
- No "off" odour;
- The fish should still be wet.

The table below indicates some of the specifications that you should look for when buying **wet fish fillets**. These specifications apply to all **white fish** including cod, haddock and plaice.

Specification	What to look for
Colour (blemishes)	There should be no signs of bruising, blood clots or discolouration.
Bones, skin and belly lining	Only the pin bones should remain. All of the other bones should have been removed during filleting.
Worms and parasites	The maximum tolerance for nematode worms is three worms per 3.2Kg (7lb). No other parasites should be present.

Eating quality	The fillets must not contain abnormal intrinsic odours or flavours such as 'weedy' or 'diesel' flavours. N.B The fish must score at least 6 on the Torry Taste Panel Scoring System for cooked fish. (This scoring system is displayed further on in this segment.)
Packaging	Wet fish should be packed in non-returnable, lidded, water-resistant packaging of such material that will not impart a taint to the product.

If you buy **whole wet fish**, you should look for:

- Bright red gills;
- Eyes sticking out from the head, bright and clear;
- Skin with a clear slime.

Go to a fish market yourself and see what the fish should look like. If you follow these guidelines you will be able to serve customers with confidence.

With **frozen fish** the rules are different. You must check that the fish is still properly frozen and that any packaging is intact. You do not want to serve fish suffering from freezer burn. (Extensive freezer burn causes the flesh to dry out and the texture is like suede. Early signs of freezer burn take on a whitening of the fillet edges.)

What sort of fish should I buy?

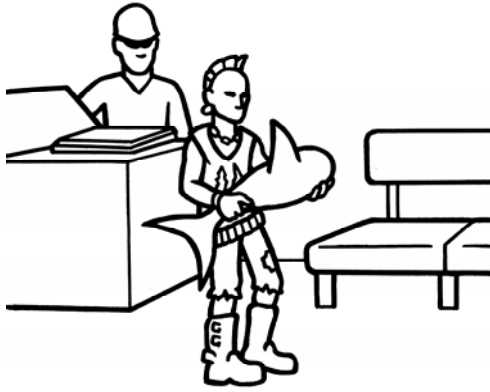
Choosing fish for your shop can be a complicated affair.

The choice may include:

- Cod;
- Haddock;
- Plaice;
- Skate;
- Dogfish (Huss);
- Sole;
- Scampi.

You could also serve:

- Whiting;
- Catfish;
- Monkfish;
- Shark;
- Trout;
- Salmon.



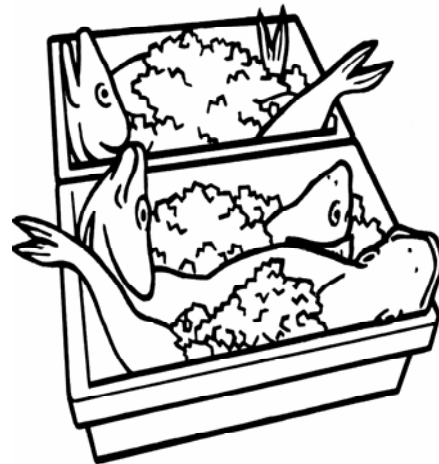
Have a look around your area and see what it is that people eat for preference. It does vary over the country and there are no hard-and-fast rules. Stock the most preferred types of fish and don't be afraid to try something new. Many fish friers cook cod ahead as a regular offering and customers have to order haddock or plaice as they come in.

Wet or Frozen?

Once you've decided on the types of fish you wish to buy, you can buy it wet or frozen.

Wet Fish

If you buy wet fish, you'll need to get the weight put onto the invoice and you should check your weights regularly. A short-weight means a loss of profits. Wet fish needs immediate handling. The contents of the box should be separated out, re-iced and then put straight into your fish fridge otherwise the whole point (freshness) will be lost. (Wet fish must be kept **moist** and should be delivered and stored at a temperature of approximately 1°-2°C or 34°F-36°F.) Try not to order more fish than you expect to use within two days.



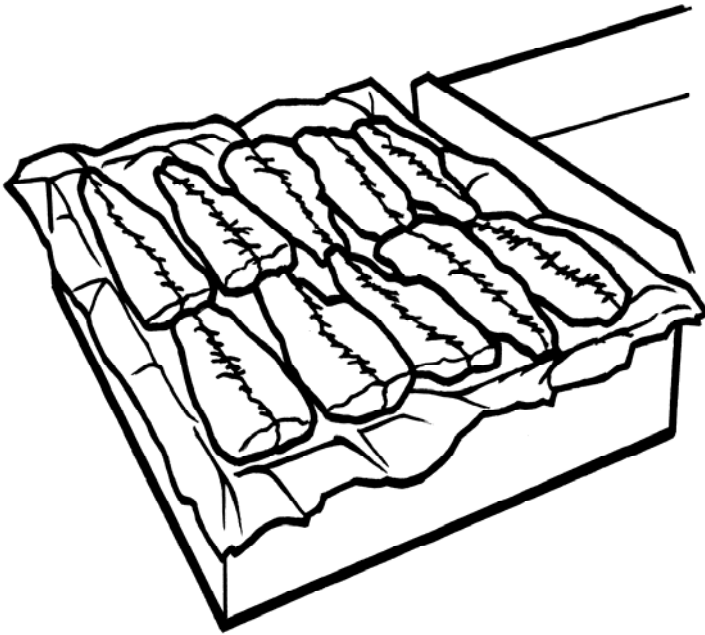
The disadvantage of wet fish is that its price varies as the supply varies. This makes your costing process more difficult.

Frozen Fish

Frozen fish comes in three categories: frozen-at-sea, frozen-on-shore and frozen portions. When it is delivered to your shop, the temperature of the fish should be no warmer than -15°C (5°F).

Fish that is frozen at sea is of a high quality as it is usually not more than four hours old when it is frozen.

On-Shore frozen fish will be slightly older but is also of a very high quality. Frozen fish needs different organisation from wet fish as you need to get it out of the freezer in advance. You therefore need to know your likely customer demand in order to decide what you'll need tomorrow.



Frozen fillets can be individually quick frozen or block frozen. The individually quick frozen fillets have the advantage that you only need to defrost the number of fillets you need. A block also takes much longer to defrost.

It is best not to fully defrost a frozen fillet. You can tell when it has gone far enough, because it can be comfortably cut with a knife.

What about frozen portions?

Frozen portions come in a block. They are ready boned and skinned so the wastage in preparation is no problem. They give you perfect portion control and so help you do your costings perfectly.

Always follow the instructions for defrosting.

Frozen fish should **never** be re-frozen after it is allowed to thaw.

Which is best?

Generally, which fish you choose will depend on your preference.

It used to be said that wet fish is fresher than frozen fish, but with correct handling and quick-freezing methods, this need not be true.

- Frozen fish maintains a predictable price.
- It is always available.
- The quality of frozen fish is consistently high.

Frozen portions offer the same consistent price and quality.

- They can offer greater economy.
- There is no labour or time needed for preparation.
- Each portion weighs the same and could work out cheaper because there is no wastage.
- Not popular with the customer in most instances due to their regular shape.

Frozen fish therefore allows you to budget more closely over a longer period than with wet fish.

The best way for you to decide is to have a good look at the market and think about:

- The availability;
- The all the year round cost;
- Wastage.

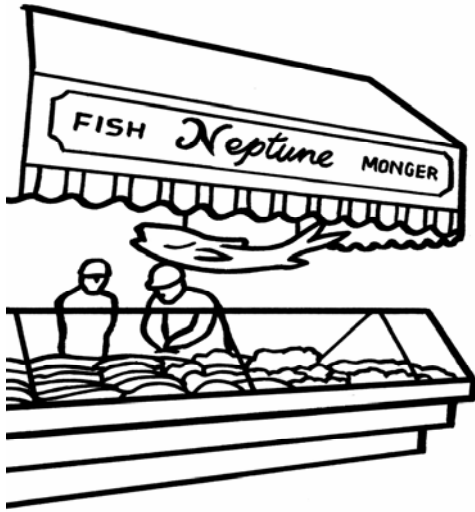
Then decide which type would best suit your organisation.

- How many people work for you?
- Could you be organised enough to cope with frozen fish for tomorrow?
- Could you organise to cope with wet fish to be skinned, boned and portioned?

It is possible that the best thing for you is to use a mixture, for example, wet fish backed up by a few days supply of frozen fish.

Where to buy Fish

There are three major places from which to buy your fish:



- The port wholesalers;
- Inland wholesalers;
- Inland markets.

Pay a visit to each place before you decide on your service of fish. A visit to the fish auctions early in the morning is an enlightening experience and well worth the trip. It will tell you a lot about how the fish gets its price. You'll also need to know about:

- The cost of fish;
- Order-delivery time;
- Delivery days;
- Payment arrangements (e.g. credit).

Your fish supply must be quick, efficient and reliable. A fried fish shop without fish will suffer badly. Ask other fish friers about where they get their fish. If they'll tell you and they're happy, that's a good recommendation.

If at any time your delivery of fish is sub-standard, you should place it in a fridge or freezer marking it "not for use". You should then contact your supplier and arrange for it to be returned on the next delivery.

HOW TO PREPARE FISH

The three main processes in preparing fish for your shop are:

- Skinning;
- Boning;
- Cutting.

Not all fish friers skin their fish. Some areas of the country prefer their fish to be skinned and some don't. Find out what the customers want in your area. It is better to buy your fish ready-skinned and do remember that it is the weight after skinning that you want. You could lose valuable weight in skin otherwise.

Skinning frozen fillets can actually be easier than skinning wet fillets.

Whether you bone your fish will also depend on where your business is. Again, some areas expect their fish to have the bones taken out. Others don't. However, if you sell to children, it is recommended that you take the bones out. Again, find out what your area prefers! There are three main ways of taking out the bones in fish:

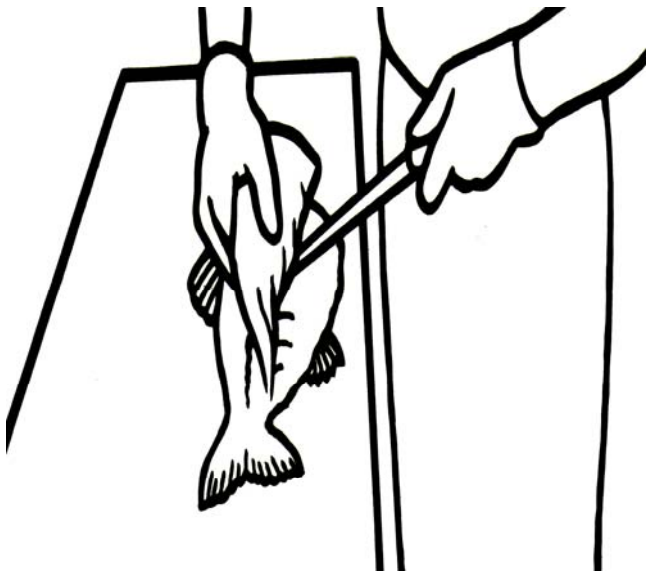
- The V-cut;
- The J-cut;
- Using pliers.

Whichever method you use, make sure that you do not shatter the fish or waste too much stuck to the bone. Boning should be a 'clean-cut' affair and the fish should look reasonably complete at the end of it.

Cutting fish should be done with the right size and thickness for your portions in mind. Cutting should be done with care and a very sharp knife. Many friers cut at a 45° angle (this makes the portion look bigger). Others cut it straight through. Try to look at your fillets carefully before you cut them as you don't want lots of little bits left over at the end of the day, which would affect your profit margin. Try to make your portions look the same size.

Wastage

Let's have another look at wastage. Why is it so important? Wastage means a loss of profits for a business. You're in business for profit, so you must try to get rid of wastage as much as possible.



As far as fish goes the following lists the main wastage areas:

- Poor cutting, skinning and boning;
- Thawing out too early (you can't re-freeze);
- Buying too much wet fish at once;
- Poor portion control;
- Preparing too much fish for the day;
- Letting wet fish dry out;
- Not bringing older frozen fish to the top of the freezer.

If you get these areas under control, you should find that you don't waste your money by throwing fish away due to one cause or another.

Work out what your wastage rate is as this could be important later for budgeting and also to your relationship with the taxman.



FRYING FISH

Once again, different parts of the country have different practices as to how much fish passes over the counter to the customers. You should have a good look at the other shops in your area (particularly the popular ones). How much fish do they give each customer? This should be a good pointer to your portion size. Of course, you could always give more and advertise the fact. This would be good for relationships with your customers. Naturally, once you have decided on a portion size (or two) you and your staff should be careful to stick to it.

You should also check that your portion size gives you enough profit on a kilogram of fish. Sit down and work out how far a kilogram of fish goes in your shop. It may surprise you!

Portion control is important for you in two ways; too much and you'll lose profits, too little and you'll also lose profits (customers won't come back).

This variance in size will determine how many pieces of fish are fried at any one time. However, never overcrowd the pan and do not fry too many pieces when demand is slow. An overcrowded pan will restrict the turning of the fish and will reduce the frying temperature. This will result in the fish absorbing too much oil. The frying temperature should be about 180°C (356°F), when using a standard frying range.

Lay the battered pieces in the hot oil gently floating them away from you. This will leave enough space for the next piece of fish. **Do not drop them in and take care not to lay one over another.** Leave until a golden colour develops around the edges (2-3 minutes) then place the fish turner under the fish and gently flip the fish over. Leave the fish for a further 2 to 3 minutes before removing the fish from the pan.

Stand the cooked fish on the long edge to drain in the heated display box. Remember that display boxes should be maintained at a **minimum temperature of 63°C (145°F)**. Finally, the fish should be served in strict rotation.

It has been noted that some fish friers in Northern Ireland also blanch their fish, as well as their chips.

TASTE

The taste of the fish when it is cooked and ready to serve to your customers is extremely important and will impact greatly on your profits. The table below shows the Torry Taste Panel Scoring System for cooked cod and haddock. The minimum standard required is a score of 6.

Characteristics	Score
Fresh, flavours characteristic of the species (maybe metallic, maybe some sweetness)	10
Fresh, sweet flavours characteristic of the species	9
Slight sweetness and loss of the flavour of the species	8
Neutral flavour, definite loss of flavour	7
Absolutely no flavour, as if chewing cotton wool	6
Trace of 'off' flavours, some sourness but no bitterness	5
Definite 'off' flavours, sour and some bitterness	4
Strong bitter flavours, rubber-like flavour, slight sulphide-like flavours	3

STORING FISH

If you are storing wet fish, don't let it dry out. Wet fish should be de-boxed and put straight into the fish fridge. Check it regularly for quality. As we said before, it should be stored at a temperature of around 1°-2°C (32°F-34°F).

Frozen fish must be stored in a deep freeze at -18°C (0°F) and not left exposed or to thaw out. The cloudy liquid that you can see in your tray contains fish juices. You are therefore pouring away the goodness of the fish.

You should never prepare more fish than you need. Fish lying around on a board on your work surface is deteriorating. **Always put fish back into the refrigerator if you don't need it immediately.** If you're using frozen fish, don't try to separate the fillets straight from the freezer. Leave them to partially defrost. Depending on the room temperature this could take anything from two to twenty-four hours.

Careful storage of your fish ensures that your customer gets top quality products and returns. That's what you're in business for.

The handling and storage of wet and frozen fish is covered in more detail in modules on these subjects.

If you are storing frozen fish, it must be rotated accordingly. This means that the product with the longer life (the one with the use by date furthest from the current date) should be put to the bottom of the pile. This should ensure that the product with the shortest life (the one with the use by date nearest to the current date) should be at the top of the pile and thus used first. Rotation of your stock should ensure that you don't have any product going beyond its use by date. If you do have fish that goes beyond its use by date, it means that you are going to have to dispose of some of your stock which will impact on your profits. More importantly, if you possess stock that is out of date, you are breaking the law.

With wet fish there is no use by date on the boxes. When boxes of fish are split up you will need to mark each container with the appropriate use by date. There are a number of ways of doing this. Choose the method that suits you best. Then when you receive another delivery of wet fish, this can be placed to the bottom of the pile with the older stock moved to the top, so that the older stock is used first. The sooner you use your wet fish, the better the quality will be.

EXERCISES

Check the quality of your fish. In your opinion what would this score using the Torry Scoring system?

Your fish score¹ =

Your minimum acceptable score =

Check the temperature of your fish when it's delivered and record the temperature below.

Wet fish temperature =

Frozen fish temperature =

Candidate's signature and date

We have now reached the end of segment one and you should feel more confident in buying, preparing and storing fish.

A suitable time for a break?

¹ For frozen fish this is scored after defrosting.