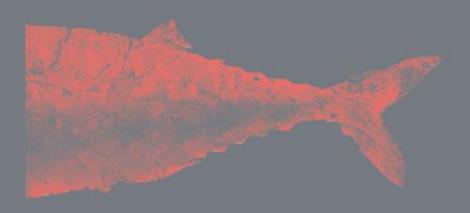


ADVANCED FISHMONGER

MFS COURSE WORKBOOK



MASTER
FISHMONGER
STANDARD



MASTER FISHMONGER STANDARD

Fulfilment of this workbook should help you with build upon your existing knowledge concerning:

- Fisheries
- Aquaculture
- Handling and Processing
- Supply Chain: Traceability and Transparency
- Customer Service
- Retail & Display
- Quality Assessment
- Food Safety & HACCP
- Nutrition
- Recipes / Cooking

Unless stated, one mark is allocated based on one true and relevant answer. For example, if there are three marks available then three relevant and correct statements or answers should be given to obtain the full marks available.

Research

Within this workbook you will find links to important learning resources that will help you to complete your answers. Please ensure that you take the time to read or watch them, and reference them when possible to ensure that your marker understands where you have obtained your information from.

Good luck!

Acknowledgements

Many people have contributed to the preparation of this handbook by attending MFS working party meetings and by making detailed and constructive comments on the draft. Grateful thanks are due to all members of the MFS Steering Group for their help in the production of this publication.



Fisheries

LEARNING RESOURCES

The Seafood Guide: The UK Seafood Industry – An Overview

MSC: What is sustainable fishing?

https://20.msc.org/what-we-are-doing/our-approach/what-is-sustainable-fishing

Glossary of Statistic Terms

https://stats.oecd.org/glossary/index.htm

Seafish: Guide to IUU

http://www.seafish.org/media/publications/SeafishGuidetoIUU07-2016.pdf

Marine Conservation Society: Good Fish Guide https://www.mcsuk.org/goodfishguide/search

Seafood Guide: Species and Availability Buying Seasonal Fish

https://www.mcsuk.org/media/seafood/BuyingFishInSeason.pdf

The Seafish Guide to Responsible and Sustainable Sourcing

http://www.seafish.org/media/publications/Seafish_Resp_sourcing_and_sustainabilit_09_08_2016.pdf

Seafish: Traceability Requirements

http://www.seafish.org/industry-support/legislation/traceability-and-labelling/fish-traceability-requirements

Towards Sustainable Fisheries Management

https://www.pcfisu.org/wp-content/uploads/2010/12/MRAG-report_best-practice-examples1.pdf

De-coding Seafood Eco-Labels: Why we need public standards https://www.ftc.gov/sites/default/files/documents/public_comments/guides-use-environmental-marketing-claims-project-no.p954501-00152%C2%A0/00152-56693.pdf



Managing Fisheries

1. Describe what is meant by the term 'fishing effort'. (2 marks)
2. Describe what is meant by the terms Maximum Sustainable Yield (MSY) and Optimum Yield (OY). (4 marks)
3. Describe two pros and two cons of using 'days at sea' as a mechanism to control fishing effort. (4 marks)
4. Describe what is meant by Total Allowable Catch (TAC)? (2 marks)
5. List two risks associated with Total Allowable Catches (TACs)? (2 marks)
6. Describe three major fishing locations/regions/grounds around the coast of the UK and the common commercial species harvested there. (6 marks)

Sustainable Fisheries

(4 marks)
2. Name three benefits and three limitations of using certification programmes (such as the Responsible Fishing Scheme, Marine Stewardship Council (MSC), Aquaculture Stewardship Council (ASC) (6 marks).
3. Using the Marine Conservation Society's Good Fish Guide, name <u>two</u> species and their harvesting techniques which are regarded as sustainably-sourced, and <u>two</u> species and the harvesting technique listed as 'fish to avoid'. (4 marks)
4. Using the Seafood Guide, describe the seasonality (i.e. breeding / not- breeding, peak / low quality) for four UK commercial species, provide information on alternative species during the low season (i.e. during the breeding season / poor quality product). (8 marks)
5. Describe and explain three advantages and three disadvantages of purchasing food commodities seasonally. (6 marks)
6. Explain what is meant by the term 'illegal, unregulated, unreported (IUU) fisheries'. (4 marks)

Gear & Equipment

LEARNING RESOURCES

Watch:

Beam Trawl Selectivity:

https://www.youtube.com/watch? v=COeEq_yQO1c

Read:

Fishing UK: past, present and future

www.seafish.org/media/Publicatio ns/UKFishing_PastPresentFuture.p df

Harvesting Methods

http://www.seafoodwatch.org/oce an-issues/fishing-and-farmingmethods

Seafish: Basic Fishing Methods:

http://www.seafish.org/media/publications/BFM_August_2015_update.pdf



Gear & Equipment

1. What is classed as an active gear, what are its characteristics and what type of species do they catch? (3 marks)
2. What are the benefits and challenges associated with using active gear? When did it become popular and when were the challenges first realised? (5 marks)
3. What are the names of two common encircling gears, what are the general characteristics of encircling gears and what do each of these encircling gears do? (5 marks)
4. What is bycatch, why is it a problem for conservation and fisheries and what changes are being put in place to prevent it? (6 marks)
5. Describe and explain how beam trawls can be designed to reduce bycatch? (3 marks)



Aquaculture

LEARNING RESOURCES

Watch:

Shellfish!

https://www.youtube.com/watch?v=AN5OZn7M318

Read:

Harvesting Methods

http://www.seafoodwatch.org/oce an-issues/fishing-and-farmingmethods

FAO: Why Aquaculture?

http://www.fao.org/docrep/t8598e/t8598e03.htm

FAO: State of the World Fisheries: Aquaculture

http://www.fao.org/3/a-i5555e.pdf

Fish Feed https://www.skretting.com/en-AU/faqs/whats-in-fish-feed/



Aquaculture

Explain the importance of aquaculture and mariculture in providing a viable protein source. (4 marks)
2. Aquaculture falls into three broad areas, as defined by the Seafood Guide. Briefly describe the processes involved in each area and provide an example of a farmed species for each aquaculture type. (3 marks)
3. List six seafood species farmed commercially for consumption in the United Kingdom. (3 marks)
4. What are the principles of organic aquaculture? (2 marks) What are three advantages and three disadvantages of this type of fish farming? (6 marks) (Total: 8 marks)
5. What ingredients may be typically found in fish feed? (3 marks)
6. Aquaculture often receives a poor reputation in the media. What are some of the negative impacts of aquaculture that have been highlighted in the past? (6 marks)

Aquaculture

7. In Europe, fish and shellfish farms need to be registered and inspected regularly to check the standards of the health, hygiene and welfare. Using the Seafood Guide, describe some of the initiatives that individual farms and the respectations are working on to improve standards and maintain a healthy renvironment. (4 marks)	

8. Complete the following table: (6 marks)

Aquaculture Method	Description	Species harvested
Hatchery	Artificial breeding, hatching and rearing of spat, juvenile fish, and crustaceans	Oysters, clams, mussels, salmon, tilapia, scallops, lobster, trout, arctic char, halibut
Bag / rack		
Submersible net pens / cages		
Recirculating systems		



Handling & Processing

LEARNING RESOURCES

Watch:
Seafish: The Business of
Processing
https://www.youtube.com/watch?
v=GPaorAYnFqY

Read:

The Seafood Guide: Seafood Processing / Processing and Techniques

Seafood Processing Industry Report:

http://www.seafish.org/media/pub lications/2014_Seafood_Processin g_Industry_Report.pdf

Receiving Deliveries

http://sop.nfsmi.org/HACCPBased SOPs/ReceivingDeliveries.pdf

Super Freezing

https://www.soshinsen.com/blogs/news/what-is-super-freezing



Handling & Processing

What six measures can be taken to avoid cross-contamination during the processing and packing of seafood? (3 marks)
2. List eight things you need to check when receiving fish to process? (4 marks)
3. State how stock rotation and storage links to sustainable working practices. (3 marks)
4. Describe what is meant by the term super freezing, and the processes that occur. (3 marks)
Watch the Seafood Processing video then answer the following two questions: 5. Describe what improvements can be made to help the seafood processing industry? (4 marks)
6. What impacts can quality seafood processing facilities have on a region? (3 marks)



Supply Chain: Traceability & Transparency

LEARNING RESOURCES

Read:

The Seafood Guide: The UK Seafood Industry – An Overview

'UK Seafood Industry: Dashboard 2016'

http://www.seafish.org/media/publications/Dashboard_Screen.pdf

UK Sea Fisheries Statistics

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/647482/UK_Sea_Fisheries_Statistics_2016_Full_report.pdf



Supply Chain: Traceability & Transparency

1. What does the term 'transparent seafood' mean? (2 marks)
2. Name three procedures and arrangements that could be put in place to monitor product control and traceability. (3 marks)
3. How can traceability and transparency help a business to improve its sales? (3 marks)
4. Why are arrangements for product control and traceability in the fisheries sector so important? (4 marks)
5. When purchasing wholesale seafood from a supplier, what are the legal labelling requirements that should be stated on the packaging. (6 marks)



Customer Service

LEARNING RESOURCES

Read:

What defines good customer service in retail?

https://www.highspeedtraining.co. uk/hub/good-customer-serviceretail/

Food Labelling guide for fishmongers

http://www3.hants.gov.uk/trading standards/tradingstandardsbusiness/ts-businessfood/tsguide-labellingfishmongers.htm



Customer Service

1. Explain the taste and texture attributes of chilled and frozen products and how these are perceived by customers. (4 marks)
2. What kind of sea vegetables are available for sale in the UK, how would you promote these products? (3 marks)
3. Using the Seafood Guide, describe the optimum storage conditions and temperatures for: live crustaceans, chilled fish, cooked shellfish, live mussels - oysters and scallops (4 marks)
4. Using the Seafood Guide, summarise the appropriate recommendations to consumers for handling and storage of fresh fish prior to consumption. (4 marks)
5. Using the Seafood Guide, summarise the appropriate recommendations to consumers for handling and storage of frozen fish prior to consumption, including recommended storage temperatures. (4 marks)



Retail & Display

LEARNING RESOURCES

Read:

Reference fish labelling Regulations 2013

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/245013/pb13760-fish-labelling-regs-guidance.pdf

Seafood Freshness Quality

http://www.seafish.org/media/pub lications/seafishfactsheet_seafoodf reshnessquality_201101.pdf

Seafish – Buying Seafood

http://www.seafish.org/eatingseafood/buying-seafood/buyingfresh



Retail & Display

L. Explain the six labelling regulations required by law when selling searood to customers. (6 marks)
2. Describe six main processes involved in setting up a fish counter. (6 marks)
3. Explain the importance of hygiene on the fish counter. (4 marks)
4. Explain the importance of temperature control when setting up the fish counter. (2 marks)
5. Explain the importance of promotions, include sitting, space allocation and point of sale material. (4 marks)

Retail & Display

6. Explain the importance of the display cleaning schedule and how this is monitored and maintained. (4 marks)
7. Design your own seafood display using the diagram. Label the counter where you would place the following items: catch of the day, on special offer, cooked shellfish, sea vegetables, stock that is two days old, large whole fish, small whole fish and already filleted products. Explain why you have chosen that place below. (10 marks)





Quality Assessment

LEARNING RESOURCES

Quality Assessment

Watch:

Seafood Quality Assessment Systems (videos 1 – 4)

https://www.youtube.com/watch?v=9No0yWcQ78w&list=PLjmL1YNydu1EKxilnxGWrJMaB_5Gw9o2u

Seafish Training: Health and Safety

https://www.youtube.com/watch?v=fzPbxBqfFis&list=PLjmL1YNydu1GzUti-rmjNtdjFbaXI5FTP

Read:

Seafood Freshness Quality

http://www.seafish.org/media/publications/seafishfactsheet_seafoodfreshnessquality_201101.pdf

Seafish – Buying Seafood

http://www.seafish.org/eating-seafood/buying-seafood/buying-fresh

Seafish Sensory Assessment Scoresheets

http://www.seafish.org/media/Publications/sensory_assessment_scoresheets_14_5_10.pdf

HACCP

Watch:

Seafish Training: Hygiene in the Seafood Industry

https://www.youtube.com/watch?v=ZeBoQN4azxQ&list=PLjmL 1YNydu1Gu6iNTYbdf05LAPE_JNN2I

Read:

An Introduction to Hazard Analysis Critical Control Point http://seafoodacademy.org/pdfs/haccp-olm-segment.pdf



Quality Assessment

1. Outline the main causes of fish/shellfish spoilage (2 marks)
2. Why might handling and temperature control impact fish/shellfish quality? (2 marks)
3. Describe how to use TORRY and QIM quality assessment techniques. (4 marks)
4. Explain what is meant by sensory assessment and name three of the sensory assessments commonly used. (3 marks)
5. Describe four similarities and differences between the principles of the TORRY and QIM quality assessment techniques. (4 marks)
6. Explain what spoilage bacteria is.

Quality Assessment

7. Complete the following table

Problem	Cause	Impact
Badly gutted fish	Bad practice onboard fishing vessel	Accelerated spoilage from gut contents, poor quality fish product.
Squashed and distorted fish	Overfilled boxes, fish not laid out before icing	Slower to process and poorer yields.
Softer than usual fish flesh		
Gaping flesh in the final product		
Red spots or bruises in flesh of products		



Food Safety and HACCP

LEARNING RESOURCES

HACCP

Watch:

Seafish Training: Hygiene in the Seafood Industry

https://www.youtube.com/watch?v=ZeBoQN4 azxQ&list=PLjmL1YNydu1Gu6iNTYbdf05LAPE _JNN2I

Seafish: Scallop Food Safety

https://www.youtube.com/watch?v=PopQe9O ozWU

Read:

An Introduction to Hazard Analysis Critical Control Point

http://seafoodacademy.org/pdfs/haccp-olm-segment.pdf

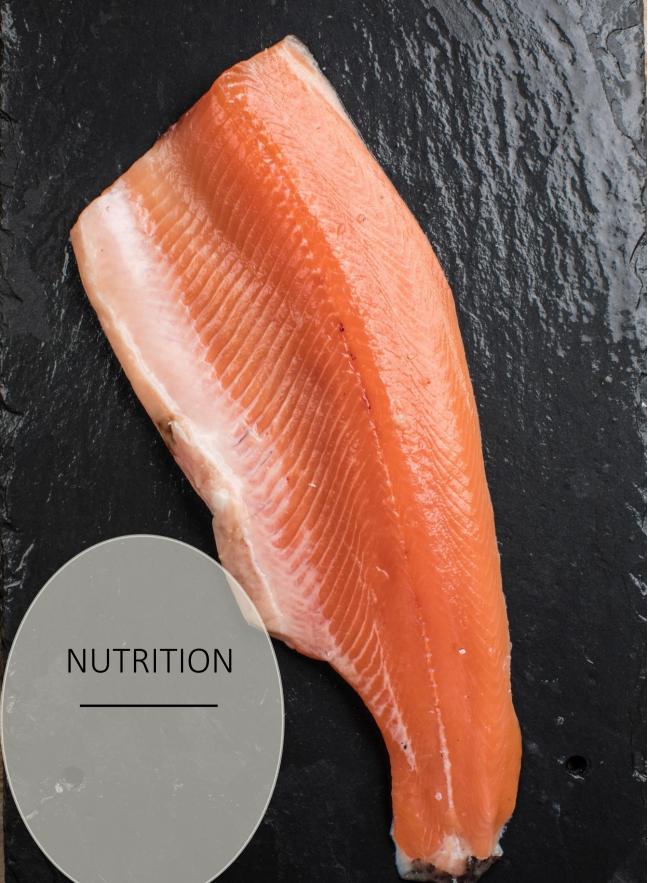
Seafish: HACCP Training Folder

http://seafoodacademy.org/pdfs/haccp-training-folder-contents-v2.pdf



Food Safety & HACCP

1. In HACCP terms., what are food hazards? (2 marks)
2. What is HACCP and why is it needed? (2 marks)
3. What is the difference between safe seafood and quality seafood (2 marks)
4. Name two high risk seafoods. (1 mark)
5. Explain the importance of holding induction and on-going training of staff for Food Safety and HACCP.
6. Explain what the difference is between the 'best before date' and 'use by date'.



Nutrition

LEARNING RESOURCES

Read:

Fish a food

https://en.wikipedia.org/wiki/Fish_as_food

Seafish - Health benefits

http://www.seafish.org/eating-seafood/seafood-for-health/health-benefits

NHS - Fish & Shellfish in your diet http://www.nhs.uk/Livewell/Goodfood/

Pages/fish-shellfish.aspx

Scombrotoxin - Histamine

http://www.foodsafetywatch.org/factsheets/scombrotoxin-histamine/

NHS - Fish & Shellfish in your diet http://www.nhs.uk/Livewell/Goodfood/ Pages/fish-shellfish.aspx



Nutrition

1. Name three things omega-3 fats help with? (3 marks)
2. Give three examples of groups of people need to take care with fish and shellfish, explain the reasons why and what their limitations are. (3 marks)
3. You want to put up a sign in your shop that talks about the benefits of omega-3 fat. What do you need to do?
4. A customer tells you they need to avoid gluten. Outline the specific ingredients they need to avoid (1 mark)
5. What nutrients do fish provide? Give some examples.
6. Describe what you should do when a customer asks about a question relating to dietary concerns and consumption of seafood? (2 marks)



Recipes & Cooking

LEARNING RESOURCES

Read: Fish Easy Mitch Tonks

Fish & Shellfish / Seafood Odyssey

Rick Stein

Leith's Fish Bible

Caroline Waldegrave & CJ Jackson

Fish

Mat Follas

Fresh Fish

Jennifer Trainer Thompson

200 Fab Fish Dishes

Gee Charman

Hook, Line and Sinker

Galton Blackiston

Fish Without a Doubt

Rick Moonen and Roy Finamore

Passion for Seafood

Gordon Ramsay

Simply Fish

Fishmongers' Company and Steve Pini



Recipes & Cooking

1. Describe how to cook fish 'en papilotte' style (1 mark)
2. Describe the potential problem with cooking seafood on the barbeque (1 mark)
3. One of our customers would like to cook seafood using a healthy technique. Suggest a couple of ways in which they could do this. (3 marks)
4. Provide a healthy recipe a parent could prepare for their young children (6 marks)
5. Provide a recipe that a customer could prepare for a dinner party (6 marks)

Useful Contacts

General Programme Enquiries The Master Fishmonger Standard

The Fishmongers' Company Fishmongers' Hall London Bridge London EC4R 9EL

www.masterfishmonger.co.uk MFS@FishHall.org.uk 020 7626 3531

MFS Preparation Course and Examination Enquiries

Seafood School at Billingsgate
Office 30, Billingsgate Market
Trafalgar Way
London
United Kingdom
E14 5ST

www.seafoodtraining.org admin@seafoodtraining.org 020 7517 3548





The MFS is supported by:

SEAFISH





Design & Art-Direction: Freytag Anderson Photography by: Rueben Paris