



Government of **Western Australia**
School Curriculum and Standards Authority

SAMPLE ASSESSMENT TASKS

MARINE AND MARITIME STUDIES
ATAR YEAR 11

Copyright

© School Curriculum and Standards Authority, 2014

This document – apart from any third party copyright material contained in it – may be freely copied, or communicated on an intranet, for non-commercial purposes in educational institutions, provided that the School Curriculum and Standards Authority is acknowledged as the copyright owner, and that the Authority's moral rights are not infringed.

Copying or communication for any other purpose can be done only within the terms of the *Copyright Act 1968* or with prior written permission of the School Curriculum and Standards Authority. Copying or communication of any third party copyright material can be done only within the terms of the *Copyright Act 1968* or with permission of the copyright owners.

Any content in this document that has been derived from the Australian Curriculum may be used under the terms of the [Creative Commons Attribution-NonCommercial 3.0 Australia licence](#)

Disclaimer

Any resources such as texts, websites and so on that may be referred to in this document are provided as examples of resources that teachers can use to support their learning programs. Their inclusion does not imply that they are mandatory or that they are the only resources relevant to the course.

Sample assessment task

Marine and Maritime Studies – ATAR Year 11

Task 1 – Testing for salinity – Unit 1

Assessment type: Investigation

Conditions

Period allowed for completion of the task: 1–2 weeks

Task weighting

5% of the school mark for this pair of units

Testing for salinity

(25 marks)

Carry out the investigation as described below to determine the approximate salt (sodium chloride) concentration in sea water. The report of your investigation should include; a brief summary of the method, all results and graphs, answers to questions related to the activity and a conclusion. In addition you should answer the analysis and evaluation questions.

Task description

This task comprises four main sections:

- using standard solutions to produce a calibration graph
- collection and testing of a range of water samples from an open beach and a nearby river estuary
- comparison and explanation of the results as part of the conclusion to the investigation
- follow up questions which include an evaluation of the experimental method.

Experimental procedure

Background

Sea water is salty because it contains a range of dissolved salts, the most common being sodium chloride (NaCl). An estimate of the amount of salt in sea water can be made by measuring its chloride ion content. This can be done by mixing the sea water with a solution of silver nitrate (AgNO₃) so that the chloride ions react with the silver ions. An indicator, potassium dichromate solution, is added to the sea water to show when all the chloride ions have reacted. The indicator turns orange-red when the end point is reached.

Equipment

- 10–15 mL of standard sodium chloride (NaCl) solutions with concentrations of 15 g/mL, 20 g/mL, 25 g/mL, 30 g/mL, 35 g/mL, 40 g/mL, 45 g/mL
- ~15 mL 0.5 mol L⁻¹ silver nitrate (AgNO₃) solution
- 0.2 mol L⁻¹ potassium dichromate indicator solution
- sea water samples from various locations
- estuary water sample
- 10 mL pipette and pipette filler
- 2 dropping pipettes
- 50 mL conical flask

Method

Preparing calibration graph

1. Use the 10 mL pipette with a pipette filler to dispense 10 mL of the 15 g/mL salt solution in to a clean 50 mL conical flask.
2. Add 1–3 drops of the potassium dichromate indicator solution.
3. Use a clean dropping pipette to add drop-by-drop 0.5 mol L^{-1} silver nitrate solution to the salt solution. Swirl the conical flask after the addition of each drop. Continue to add drops until the solution turns orange-red. **Count the number of drops added to reach this end point.** Record your results in a suitable table.
4. Clean the conical flask and rinse with deionised water.
5. Clean the 10 mL pipette and dry using air as shown by your teacher.
6. Repeat steps 1–4 for each of the standard salt solutions.
7. Either using a spread sheet or on graph paper, plot a graph of the salt water concentration versus number of drops of silver nitrate solution. Label the axes of the graph appropriately.

Determining salt concentration in sea water samples

1. Using the same method as for the standard solutions, for each of the unknown sea water and estuary water samples determine the number of drops of silver nitrate solution needed to reach the end point. Prepare a table to record the results for all the samples and to record the salt concentration in the sample (see 2 below).
2. From the calibration graph determine the salt concentration in each of the sea water and estuary water samples. Record the results in the table prepared in 1 above.

Processing of results and Evaluation questions

1. Compare the salt concentrations for each sea water and estuary water sample and suggest reasons for any differences.
2. Identify **two (2)** sources of potential error in the investigation. For each source of error identified, explain how the error can be minimised.
3. In this experiment, you test each solution only once before the points are added to the calibration graph. Discuss whether you think this is a flaw in the investigation and, if so, suggest how this may be improved without you having to do more testing.
4. What assumption is made in this experiment about the saltiness of sea water that makes the concentration determined only an approximation? Why does this assumption make the concentration determined inaccurate?

Requirements for assessment	Due dates
<input type="checkbox"/> Experimental report	
<input type="checkbox"/> Answers to questions	

ACKNOWLEDGEMENTS

Task concept from:

Crosson, M., & Gibb, R. (1992, October). Filtrates & residues: Microscale experiments: Dissolved oxygen and chloride determination in water. *Journal of Chemical Education*, 69(10), pp. 830–833.

Moffatt, B. (1997). *Marine environment: Students manual* (2nd ed.). Ashmore, Qld: Wet Paper Publications, p. 2.

Panneerselvam, K. (n.d.). [Lab assignment] (Lab 6 experiments; p. 11–13). Retrieved June, 2014, from www2.fiu.edu/~kpanneer/lab_assignment/work.htm

Marking key for sample assessment task 1 – Unit 1

Description	Marks available
Recording of results	
Results for standard solutions recorded in a suitable table	1–2
Number of drops of silver nitrate recorded to reach endpoint approximately equals the number of grams of salt per litre i.e. for a 15 g L ⁻¹ salt solution, between 13 and 17 drops should be required	1
Results for unknown solutions recorded in a suitable table	1–2
Processing data: Calibration graph and determination of salt concentrations in unknowns	
Suitable title e.g. number of drops of silver nitrate required to reach end point with standard salt solutions	1
Line graph plotted accurately	1
Correctly labelled axes e.g. 'x' – saltwater concentration (g L ⁻¹), 'y' – number of drops of silver nitrate	1
Line of best fit drawn correctly	1
Correctly interpolates or extrapolates calibration graph to determine salinity of solutions from different locations	1–2
Processing of results and Evaluation questions	
Question 1: Compare the salt concentrations for each sea water and estuary water sample and suggest reasons for any differences.	
Compares results and explains differences in the results for different locations using correct scientific terminology and appropriate marine and maritime knowledge. For example, uses maps, diagrams, knowledge of currents, evaporation, organisms	1–5
Question 2: Identify two sources of potential error in the investigation. For each source of error identified, explain how the error can be minimised.	
<ul style="list-style-type: none"> identifies two potential sources of error e.g. human error, time constraints, equipment inadequate or controlling variables 	2
<ul style="list-style-type: none"> for each of the two sources of error, makes a specific suggestion that either improves methodology or reduces human error in the investigation 	2
Question 3: In this experiment, you test each solution only once before the points are added to the calibration graph. Discuss whether you think this is a flaw in the investigation and, if so, suggest how this may be improved without you having to do more testing.	
<ul style="list-style-type: none"> recognition that testing once may not give accurate calibration 	1
<ul style="list-style-type: none"> recognition that combining class results to get an average can improve accuracy of calibration results 	1
Question 4: What assumption is made in this experiment about the saltiness of sea water that makes the concentration determined only an approximation? Why does this assumption make the concentration determined inaccurate?	
<ul style="list-style-type: none"> recognition that the assumption is that the salt concentration in sea water is due only to sodium chloride 	1
<ul style="list-style-type: none"> recognition that there are a range of other salts in sea water 	1
<ul style="list-style-type: none"> recognition that the assumption makes the salinity less than its true value 	1
Total	/25

Sample assessment task

Marine and Maritime Studies – ATAR Year 11

Task 6 – Unit 1 and Unit 2

Assessment type: Practical

Conditions

Period allowed for completion of the task: 4–6 weeks (includes time in class)

Task weighting

10% of the school mark for this pair of units

Power boating skills test

(58 marks)

You are required to develop the power boating skills identified below. You are given 4–6 weeks to practise and receive feedback to assist in the development of the required skills/strategies. Your teacher will collect evidence of your performance through direct observation or through the use of video over this time.

*Note: These power boating skills can also be assessed through a **TL3 Power boating practical test**, which is an Australian Yachting Federation (AYF) logbook-based course in power boat handling.*

Conditions:

Assessment must confirm the ability to apply knowledge in order to safely and confidently display basic power boating skills in controlled conditions. Controlled conditions are defined as light winds (0–15 knots), sheltered waters (smooth or partially smooth waters, wave height to 1.5 m).

What you need to do

- pre-launch vessel preparation (18 marks)
- launching a vessel (6 marks)
- coming up to a buoy bow first (8 marks)
- turning in a confined area (8 marks)
- retrieving a vessel (12 marks)
- care and maintenance of a vessel. (6 marks)

Marking key for sample assessment task 6 – Unit 1 and Unit 2

Student's name: _____

This marking key can be used to note skills demonstrated over time. The teacher enters a mark for each section at the end of the power boating section of the course.

Description	Marks available
Pre-launch vessel preparation	
checks that lines used for securing are in good condition	1
Initial boat checks:	
checks batteries are topped up and fully charged (if appropriate)	1
checks fuel and oil levels plus 50% in reserve	1
checks steering	1
secures keys and bung	1
checks that area is suitable for operation	1
test runs motor	1
checks trailing bracket	1
Safety:	
inspects, checks and secures safety equipment for area of operation	1
logs on	1
checks boating weather forecast	1
Trailer:	
checks lights are working	1
checks for appropriate wheel pressure	1
checks for appropriate tyre tread	1
checks that bearings are lubricated	1
checks that tow hitch and safety chains are attached	1
attaches and secures tie downs	1
attaches and secures lines	1
Student score	/18
Launching a vessel	
detaches and stores tie downs	1
removes lights	1
checks that wind, tide and current are appropriate for side of ramp approach	1
checks engine and tilt	1
replaces bung(s)	1
secures fore and aft launching line (bridle)	1
Student score	/6
Coming up to a buoy bow first	
checks to ensure it is safe to perform the skill	1
selects safe speed	1
selects appropriate angle of approach by considering the direction of wind, tide or current	1
prepares vessel for picking up mooring (boat hook and mooring line)	1
approaches mooring at appropriate speed with bow towards mooring	1
uses appropriate gears and throttle to maintain position at mooring	1
timely use of revs	1
secures vessel	1
Student score	/8

Description	Marks available
Turning in a confined area	
checks to ensure it is safe to perform the skill	1
checks for appropriate turning side for confined area (pitch of propeller, current, wind or tide)	1
selects safe speed	1
selects appropriate angle of approach by considering the direction of wind, tide or current	1
manoeuvres within confined area with little or no impact to berth	1
uses appropriate gears and throttle	1
uses revs in a timely manner	1
departs from confined area safely	1
Student score	/8
Retrieving a vessel	
prepares appropriate securing lines and/or fenders if necessary	1
checks to ensure it is safe to perform the skill	1
selects safe speed	1
selects appropriate angle of approach by considering the direction of wind, tide or current	1
selects appropriate side, wave action or landing area	1
manoeuvres vessel for retrieval, taking into consideration local environmental conditions	1
uses appropriate gears and throttle	1
uses revs in a timely manner	1
secures vessel in preparation for retrieval	1
retrieves vessel onto trailer with engine tilted and safety chain attached	1
safely moves away from ramp or landing area	1
attaches lights for road transport	1
Student score	/12
Care and maintenance	
removes bung(s)	1
flushes motor	1
turns off power (if required)	1
washes hull and trailer	1
checks hull and vessel for defects	1
checks safety gear (removes if necessary)	1
Student score	/6
Grand total	/58

Sample assessment task

Marine and Maritime Studies – ATAR Year 11

Task 8 – Unit 2

Assessment type: Test**Content:** Marine: Oceanography**Conditions**

Time for the task: 45 minutes

Task weighting

5% of the school mark for this pair of units

Oceanography test**(45 marks)**

This task requires you to apply your knowledge of the Oceanography section of the course under test conditions.

Structure of the test

Section	Suggested working time	Number of questions	Marks
ONE Multiple-choice	10 minutes	15	15
TWO Short answer	25 minutes	4	20
THREE Extended answer	10 minutes	1	10

Student's name: _____

Section One: Multiple-choice**(15 marks)**

In this section, there are **fifteen (15)** questions. Attempt **all** questions from this section.

A multiple-choice answer sheet is provided for you to answer questions in this section. For each question, shade the box which indicates your answer.

1. Which one of the following is an important primary source of nitrogen in the marine nitrogen cycle?
 - (a) atmospheric nitrogen
 - (b) release of nitrogen compounds as body waste by marine organisms
 - (c) release of nitrogen compounds as body waste by terrestrial organisms
 - (d) dissolving of nitrogen containing minerals from rocks in the ocean

2. The water cycle is an important process for our oceans. The primary source of energy for this process is the
 - (a) Sun.
 - (b) wind.
 - (c) ocean currents.
 - (d) global ocean circulation.

3. When atmospheric carbon dioxide dissolves into the ocean as part of the marine carbon cycle, what is the most common form in which the carbon exists?
 - (a) calcium carbonate, CaCO_3
 - (b) carbonic acid, H_2CO_3
 - (c) bicarbonate ion, HCO_3^-
 - (d) carbonate ion, CO_3^{2-}

4. A food web consists of a system of interconnected
 - (a) animal species.
 - (b) plant species.
 - (c) currents.
 - (d) food chains.

5. An autotroph is an organism that
 - (a) uses other organisms for its source of nutrients and energy.
 - (b) receives energy by consuming plants in a food chain.
 - (c) decomposes dead organisms in a food chain.
 - (d) makes organic molecules from inorganic raw materials usually with the use of sunlight.

6. Which one of the following is released into the water as a result of decomposition in a food web?
- (a) inorganic nutrients
 - (b) oxygen
 - (c) organic nutrients
 - (d) sugars
7. Which one of the following is a **not** a feature of the Leeuwin Current off the coast of Western Australia?
- (a) It is a surface current with a maximum depth of approximately 300 metres.
 - (b) It is a warm-water current that flows in a southerly direction.
 - (c) It draws nutrient-rich water from the depths of the ocean to the surface.
 - (d) Evaporation from the current during March to November influences rainfall in the south-west of Western Australia.
8. Most surface currents are driven by the
- (a) Earth's rotation.
 - (b) magnetic fields.
 - (c) Aurora borealis.
 - (d) wind.
9. The large loops of surface currents in the ocean, as shown in the diagram below, are termed circulation



- (a) loops.
- (b) gyres.
- (c) eddies.
- (d) sinks.

10. The Coriolis deflection is caused by
- (a) the wind-induced deflection of surface currents.
 - (b) the gravitational attraction of the sun.
 - (c) the combined gravitational attraction of the sun and moon.
 - (d) the rotation of the Earth on its axis.
11. What does ENSO stand for?
- (a) El Niño Surface Orientation
 - (b) El Niño Southern Ocean
 - (c) El Niño Southern Oscillation
 - (d) El Niño Surface Oscillation
12. In an El Niño year, near surface waters off Peru become
- (a) warm and nutrient rich.
 - (b) warm and nutrient poor.
 - (c) cold and nutrient poor.
 - (d) cold and nutrient rich.
13. Which one of the following is a feature typical of western boundary currents of surface ocean currents?
- (a) cold water
 - (b) warm water
 - (c) slow moving current
 - (d) transport of small volumes of water
14. Warm surface water is replaced by colder deeper water in a process known as
- (a) subduction.
 - (b) surface currents.
 - (c) upwelling.
 - (d) the Coriolis effect.
15. In which direction do surface ocean currents generally transfer heat?
- (a) from north to south
 - (b) from south to north
 - (c) from equatorial regions to polar regions
 - (d) from tropical regions to equatorial regions

Section Two: Short answer

(20 marks)

This section has **four (4)** questions. Attempt **all** questions from this section.

Write your answers in the space provided.

1. Use the diagram of the food web on the next page to answer the following questions.

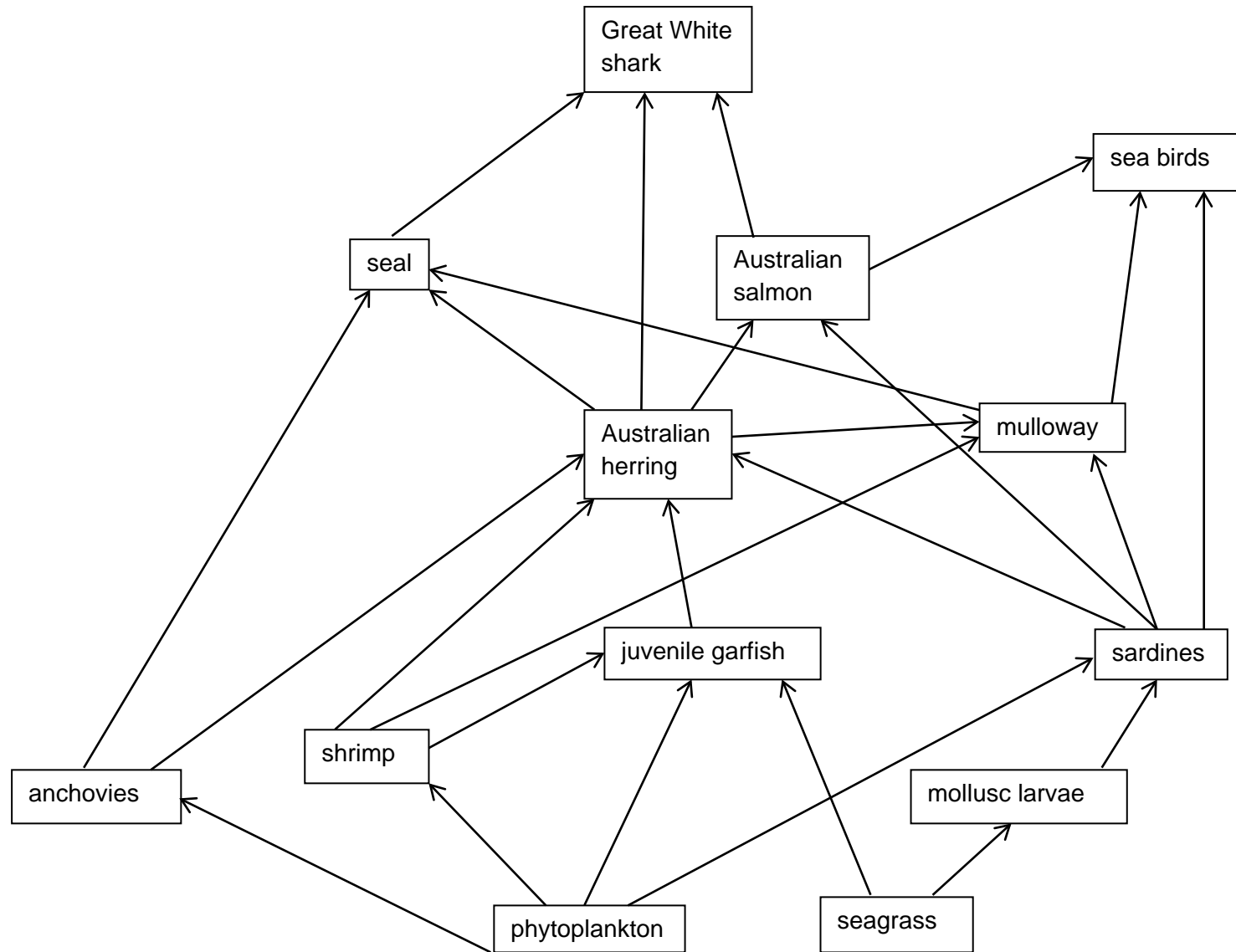
a) In the food web, what do the arrows represent? (1 mark)

b) What would be **three (3)** consequences of a loss in seals in the food web? (3 marks)

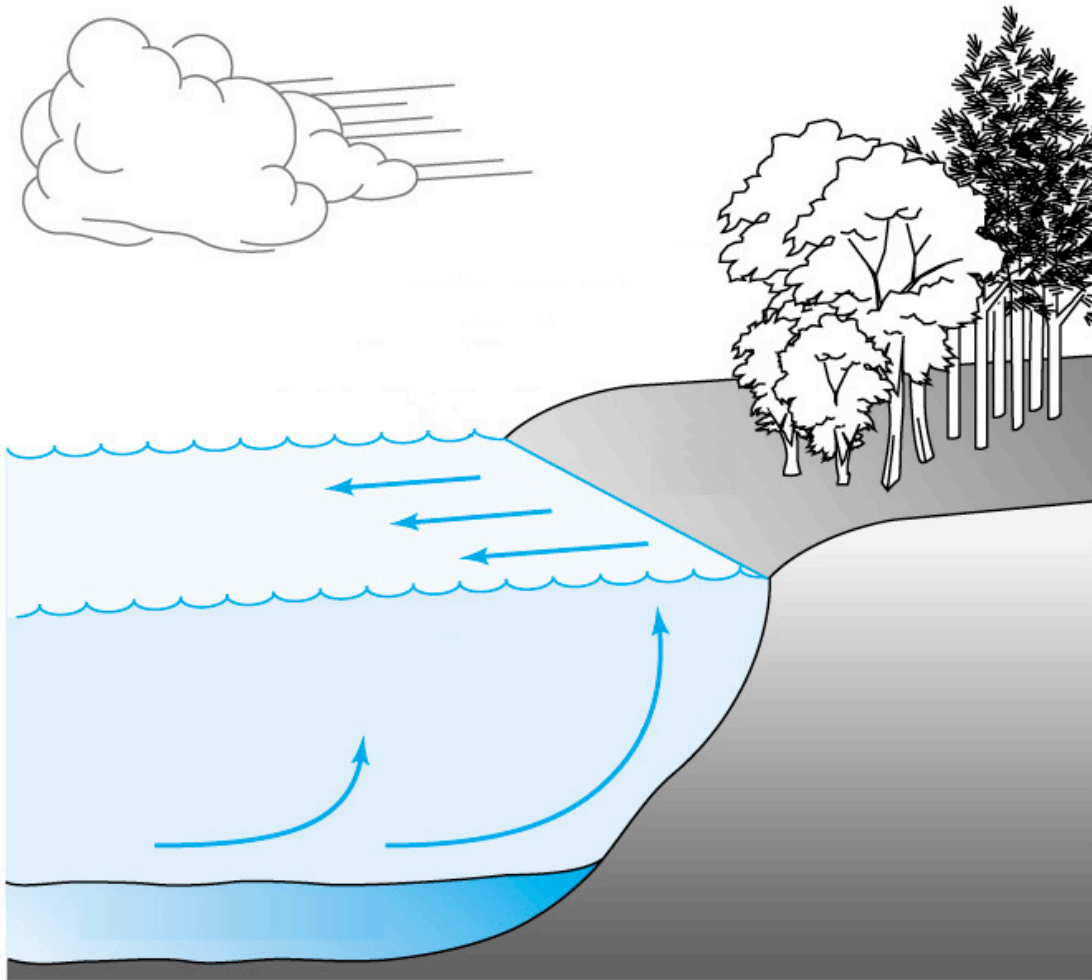
c) What is the role of bacteria in food webs? (1 mark)

d) In the food web what could be considered as a producer? (1 mark)

e) Draw a food chain that shows the Australian salmon as a third order consumer. (1 mark)



2. On the diagram below use labels and arrows to show the components of the water cycle and explain its importance. (5 marks)



3. Complete the table below to explain the physical properties and characteristics of sea water as labelled. (4 marks)

Physical property	Explanation
Water Pressure	
Light	
Sound	
Heat capacity	

4. Explain how the following factors act to create ocean currents.

(4 marks)

Factor	Effect on ocean current creation
Wind	
Earth's Rotation and Coriolis Force	
Water temperature differences	
Water density differences	

Section Three: Extended answer**(10 marks)**

This section has **one (1)** question. Attempt **this** question on the lined paper provided.

1. Explain the formation of the El Niño event.

Include in your answer the following:

- how the Southern Oscillation is important (4 marks)
- the effects on Australian currents (3 marks)
- the effects on Australian climate. (3 marks)

ACKNOWLEDGEMENTS

Section One

Question 6 Image: National Oceanic and Atmospheric Administration. (2008). [Ocean-wide gyres]. Retrieved May, 2014, from http://commons.wikimedia.org/wiki/File:Oceanic_gyres.png

Section Two

Question 2 Image: Bush, M.B. (2003). *Ecology of a changing planet* (3rd ed.) (Ch. 12). Upper Saddle River, NJ: Prentice Hall. Retrieved May, 2014, from http://wps.prenhall.com/esm_bush_ecology_3/47/12173/3116392.cw/index.html (see Image Gallery, Image 12–04, unlabelled).

Marking key for sample assessment task 8 – Unit 2

Section One: Multiple-choice

Question	Answer
1	A
2	A
3	C
4	D
5	D
6	A
7	C
8	D
9	B
10	D
11	C
12	B
13	B
14	C
15	C

Description	Mark
1 mark each	0–15
Total	/15

Section Two: Short answer

1. Use the diagram above to answer the following.

a) In the food web, what do the arrows represent?

Description	Mark
Energy flow/flow of energy	1

b) What would be **three (3)** consequences of a loss in seals in the food web?

Description	Mark
Any three of the following: <ul style="list-style-type: none"> • increase in anchovy population • increase in Australian herring population • increase in mulloway population • decrease in Great White shark population 	1–3

c) What is the role of bacteria in food webs?

Description	Mark
Decomposer/break down dead material/recycling inorganic nutrients	1

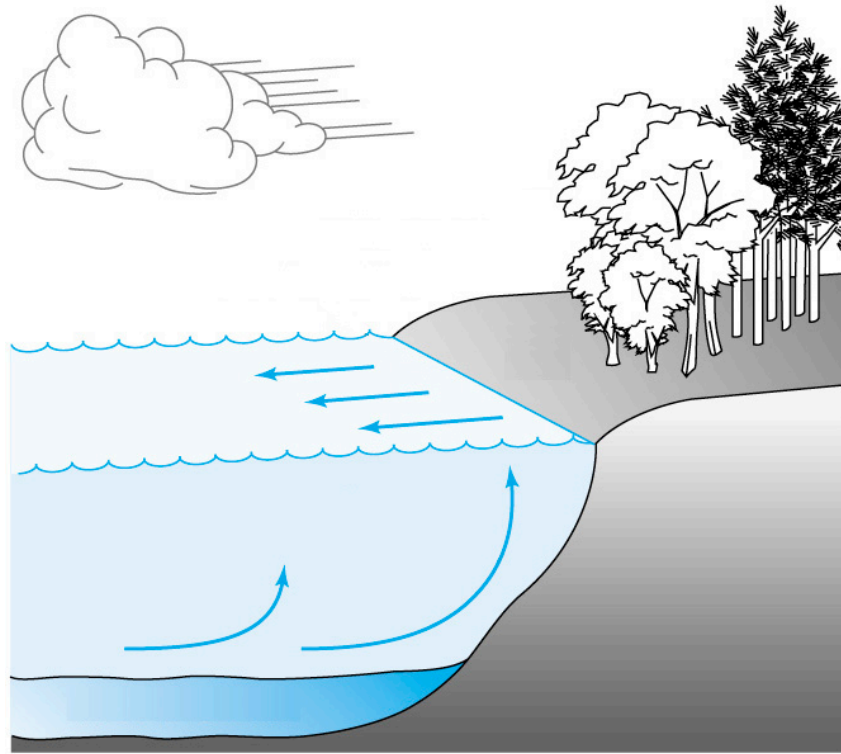
d) In the food web what could be considered as a producer?

Description	Mark
Phytoplankton or seagrass (either one or both acceptable)	1

e) Draw a food chain that shows the Australian salmon as a third order consumer.

Description	Mark
Any of the following food chains: Phytoplankton → shrimp → Australian herring → Australian salmon Or Phytoplankton → anchovies → Australian herring → Australian salmon Or Phytoplankton → juvenile garfish → Australian herring → Australian salmon Or Seagrass → juvenile garfish → Australian herring → Australian salmon	1

2. On the diagram below use labels and arrows to show the components of the water cycle and explain its importance.



[Image: Bush, M.B. (2003). *Ecology of a changing planet* (3rd ed.) (Ch. 12). Upper Saddle River, NJ: Prentice Hall. Retrieved May, 2014, from http://wps.prenhall.com/esm_bush_ecology_3/47/12173/3116392.cw/index.html (see Image Gallery, Image 12-04, unlabelled).

Description	Mark
<p>For labelling, arrows and explanation – at least any five of:</p> <ul style="list-style-type: none"> • evaporation off ocean • evaporation off ground • evaporation off water bodies other than ocean • condensation • cloud formation • surface runoff • ground water systems • transpiration. 	<p>1–5 (1 mark each)</p>

3. Complete the table below to explain the physical properties and characteristics of sea water as labelled.

Physical property	Explanation
Water Pressure	As depth of the ocean increases so does the pressure; water denser than air so pressure increases more with depth than it does with air; 1 atm increase for each 10 m of ocean water depth
Light	(Ocean) water absorbs light more than air; as depth increases light is absorbed and colour is lost
Sound	Sound travels faster in water than air; sound is transmitted faster so may be louder and closer to our ears compared to air
Heat capacity	The amount of heat required to change water temperature by a given amount is higher than it is for air; increasing salinity increases thermal capacity of water; on a mass basis (ocean) water absorbs more heat than air

Description	Mark
1 mark for each explanation as above	1–4

4. Explain how the following factors act to create ocean currents.

Factor	Effect on ocean current creation
Wind	Causes surface water of oceans (and others) to move in the direction of the wind causing surface ocean currents; larger wind systems lead to larger ocean currents
Earth's Rotation and Coriolis Force	(Ocean) water is moved outwards by the Coriolis effect and turning of the globe to cause the circular movement of currents
Water temperature differences	Temperature causes density differences and therefore water movement; surface temperatures are higher than lower, and equatorial temperatures are higher than polar causing lateral and horizontal currents
Water density differences	Water will move from areas of high density to low and cause currents as a result

Description	Mark
1 mark for each effect as above	1–4

Section Three: Extended answer

This section has **one (1)** question. Attempt **this** question on the lined paper provided.

1. Explain the formation of the El Niño event.

Include in your answer the following

- how the Southern Oscillation is important
- the effects on Australian currents and
- the effects on Australian climate.

Description	Mark
How the Southern Oscillation is important. Any four of the following explained : <ul style="list-style-type: none"> • changes in rainfall • changes in agriculture and food production • changes to fish and ocean habitats • changes to weather • change to extreme weather events • effects on ocean currents. 	1–4 (1 mark each)
The effects on Australian currents. Any three of the following explained : <ul style="list-style-type: none"> • cooler waters off Australia’s East coast • slower • weaker Leeuwin current • cooler Leeuwin current • weaker local Australian currents. 	1–3 (1 mark each)
The effects on Australian climate. Any three of the following explained: <ul style="list-style-type: none"> • drier conditions in Eastern states • drought possibility increases in much of Australia • hotter weather often occurs • increase bushfire risk during summers • drier winters. 	1–3 (1 mark each)
Total	/10

Sample assessment task

Marine and Maritime Studies – ATAR Year 11

Task 9 – Unit 2

Assessment type: Extended response

Conditions

Time for the task: 2 hours

Task weighting

5% of the school mark for this pair of units

Marine resource management in-class assessment (20 marks)

You will be provided with a recent case study/report on the Western Rock Lobster and write a report that addresses specific focus questions associated with the Western Rock Lobster and its management as a marine resource.

What you need to do

- carefully read the selected case study/report(s) provided by your teacher
- read the following focus questions
- highlight the key points and main ideas in the case study/report that address the questions and make brief notes as evidence of your research/planning
- write a report that addresses the questions.

Focus questions

Introduction

1. What are the common and scientific names of the Western Rock Lobster?
2. What are the regions in which the Western Rock Lobster is located?
3. What are any previous and/or current resource management policies that target the Western Rock Lobster?

Strategies, recommendations and actions

4. What are the strategies, recommendations and suggested actions aimed at managing the Western Rock Lobster? Discuss, including the following:
 - habitat conservation and rehabilitation priorities
 - identification of natural, human, environmental and introduced threats to the long-term sustainability of the Western Rock Lobster
 - selected dates or regional closure times and identify the purpose for these times
 - identification of the recreational and commercial catch quotas and specifications, including minimum and maximum sizes and the return of breeding stock
 - identify issues associated with commercial pressure and population growth and the sustainability of the Western Rock Lobster resource.

Conclusion

5. Provide a concluding statement which summarises your overall response to this statement: 'Our Western Rock Lobster resource is healthy.'

What needs to be submitted	Due dates
<input type="checkbox"/> Research preparation e.g. highlighted case study/report, notes, plan for written response	
<input type="checkbox"/> Final written response	

It is possible to adapt this task to the other Western Australian fisheries listed below:

- Abalone Fishery
- Abrolhos Island and Mid-West Trawl Managed Fishery
- Bêche-de-mer Fishery
- Broome Prawn Managed Fishery
- Exmouth Gulf Prawn Fishery
- Kimberley Prawn Managed Fishery
- Mackerel Fishery
- Marine Aquarium Fish Fishery
- Northern Demersal Scalefish Managed Fishery
- Onslow and Nickol Bay Prawn Managed Fisheries
- Pearl Oyster Fishery
- Pilbara Trap Fishery
- Pilbara Trawl Fishery
- Salmon Managed Fisheries
- Shark Bay Experimental Crab Fishery
- Shark Bay Prawn Fishery
- Shark Bay Scallop Fishery
- Shark Bay Snapper Fishery
- South Coast Crustacean Fishery
- Specimen Shell Collection Fishery
- West Coast Deep Sea Crab Interim Managed Fishery.

Teacher's resources

Below are resources that are suitable for this task. Teachers should select the resources that are most suited to the interests and abilities of their students. More able students should be given the opportunity to access, retrieve and analyse information from a range of sources.

Fisheries Fact Sheet – Western Rock Lobster

http://www.fish.wa.gov.au/Documents/recreational_fishing/fact_sheets/fact_sheet_western_rock_lobster.pdf

Recreational Fishing Guide Rock Lobsters

http://www.fish.wa.gov.au/Documents/recreational_fishing/rec_fishing_guide/rules_guide_statewide.pdf

http://www.fish.wa.gov.au/Documents/recreational_fishing/licences/rec_licence_rock_lobster.pdf

Identifying factors affecting the low western rock lobster puerulus settlement in recent years

Final FRDC Report – Project 2009/18. Available

at http://www.fish.wa.gov.au/Documents/research_reports/fr255.pdf

Fisheries management papers (one of many available at <http://www.fish.wa.gov.au/About-Us/Publications/Pages/Fisheries-Management-Papers.aspx>)

West Coast Rock Lobster Harvest Strategy And Control Rules 2015 – 2019, December 2013.
http://www.fish.wa.gov.au/Documents/management_papers/fmp263.pdf

Other resources

<http://marinewaters.fish.wa.gov.au/wp-content/uploads/WF-December2005-page14-19.pdf>

http://www.fish.wa.gov.au/Documents/esd_reports/esd004.pdf

<http://marinewaters.fish.wa.gov.au/wp-content/uploads/WF-March2009-page16-21.pdf>

<http://marinewaters.fish.wa.gov.au/wp-content/uploads/WF-April2010-page48-51.pdf>

<http://marinewaters.fish.wa.gov.au/wp-content/uploads/WF-July2010-page46-48.pdf>

Marking key for sample assessment task 9 – Unit 2

Description	Marks available
Evidence of research-planning	
<ul style="list-style-type: none"> presentation of key points and main ideas have been highlighted 	1
<ul style="list-style-type: none"> planning and preparatory annotations and notes made 	1
Student score	/2
Content (main body of written response)	
Introduction	
<ul style="list-style-type: none"> common and scientific names of the chosen species identified e.g. Panulirus Cygnus, crayfish, crays, spiny lobsters 	1
<ul style="list-style-type: none"> region/s identified e.g. between Augusta and Shark Bay or between latitudes 21°44'S and 34°24'S or Zones A, B and C 	1
<ul style="list-style-type: none"> resource management policy identified e.g. beginning in 1963 with limited entry, quota management system, size limits, protection for females in breeding condition, controls on the type of gear used, including escape gaps in pots, and logbook schemes 	1
Student score	/3
Strategies, recommendations and actions	
<ul style="list-style-type: none"> habitat conservation and rehabilitation priorities suggested 	2
<ul style="list-style-type: none"> natural, human, environmental and introduced threats to the long term sustainability of the Western Rock Lobster identified 	2
<ul style="list-style-type: none"> dates or regional closure times identified e.g. commercial, 15 November–31 August; Abrolhos Islands area, closed until 15 March; recreational, 15 Nov–30 June 	1
<ul style="list-style-type: none"> purpose for above times described e.g. fishing controls for long term sustainability, record low puerulus settlement 	1
<ul style="list-style-type: none"> recreational and commercial catch quotas and specifications and/or breeding stock returns outlined 	2
<ul style="list-style-type: none"> long term sustainability of the marine resource identified 	2
Student score	/10
Conclusion	
<ul style="list-style-type: none"> concluding paragraph/s clearly indicates at least three points, with supporting evidence, which justify the statement e.g. Western Rock Lobster fishery is one of a handful in Australia where a long-term scientific program has provided sufficient detailed information to predict catches up to four years in advance; international acknowledgement as one of the best managed and sustainable in the world; in economic interest as export industry is worth millions of dollars 	3
<ul style="list-style-type: none"> concluding paragraph/s indicates at least three points, without supporting evidence, which justify the statement 	2
<ul style="list-style-type: none"> concluding paragraph/s indicates one or two points, without supporting evidence, which justify the statement 	1
Student score	/3
Layout and structure	
<ul style="list-style-type: none"> logically organised and labelled appropriately with all headings and sub-headings 	1
<ul style="list-style-type: none"> identified management systems are adequately justified and accurately referenced 	1
Student score	/2
Overall total	/20