



CESSH

CENTRE OF EXCELLENCE
SCIENCE SEAFOOD HEALTH

Seafood and Health

Teacher resource for secondary students

Overview of teacher resource

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The following resources were prepared by The Centre of Excellence for Science, Seafood and Health. At the time of writing, details of listed resources were accurate. This is not an exhaustive list of Health Studies resources. Information of additional resources can be accessed via the Centre of Excellence for Science, Seafood and Health website at www.cessh.curtin.edu.au and the Curriculum Materials Information Services (CMIS) at: www.det.wa.edu.au/education/cmisis/eval/curriculum/courses/healthstudies

1. Rationale

- To provide an independent resource for use in the Health and Physical Education Year 12 Curriculum in Western Australia.
- To provide students with a brief introduction to the nutritional benefits of seafood, additionally making reference to current issues that may impact on seafood consumption.
- To provide a resource that is easy to understand, factual and engaging.
- To provide a basic introductory resource that can be utilised in diverse classroom contexts.
- To raise awareness of the importance of regular seafood consumption in the diet as a nutritional imperative.

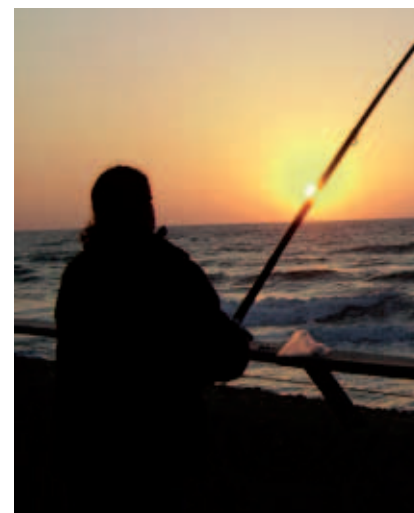


2. Course outcomes

Outcome 1	Outcome 2	Outcome 3	Outcome 4
Knowledge and understandings	Beliefs, attitudes and values	Self management and interpersonal skills	Health inquiry

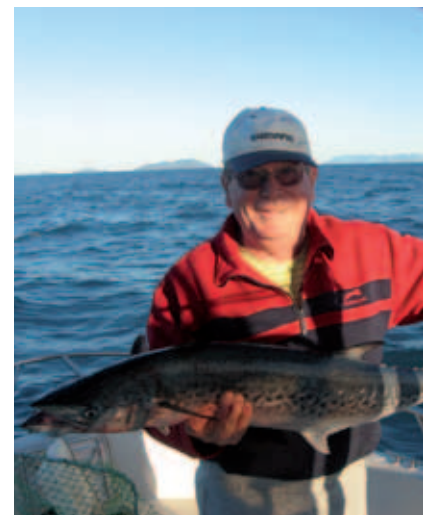
Course content

Health concepts	Health skills and processes	Attitudinal and environmental influences over health
An holistic/social view of health	Self-management skills	Personal beliefs, attitudes and values influence health behaviour
Health principles, frameworks models and theories	Interpersonal skills	Social and cultural norms and expectations influence health behaviour
Actions and strategies for health	Health inquiry skills and processes	
Health care systems		



Course units

Unit PAHEA	Basic personal health concepts, skills and processes
Unit PBHEA	Healthy lifestyles
Unit 1AHEA	Introduction to health
Unit 1BHEA	Personal health
Unit 1CHEA	Personal, peer and family health
Unit 1DHEA	The health of groups and communities
Unit 2AHEA	Technology, the environment and its impact on community health
Unit 2BHEA	Popular culture and its impact on the health of individuals and communities
Unit 3AHEA	Health of specific populations
Unit 3BHEA	Global, local and regional challenges to health



Assessment weightings	Task	Task weightings	Outcomes			
			01	02	03	04
10%	Healthy living introductory activity		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10%	Group activity: Spatial mapping		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
25%	Critical media review		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15%	Health survey		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40%	Paired presentation and fact sheet		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(Based on Curriculum Council Sample Unit Package)

3. Healthy living introductory activity

Rationale

This minor informal assessment is designed to be a student-centered self-assessment, introducing core concepts central to health promotion in adolescents and fostering introspection about personal practices of exercise and eating.

Outcome 1	Outcome 2	Outcome 3	Outcome 4
Knowledge and understandings	Beliefs, attitudes and values	Self management and interpersonal skills	Health inquiry
■	■	■	

Suggested duration

- 1 lesson

Advance preparation for teacher

- Ensure student access to computer with internet to access the Healthy Active site and the government health site.

Suggested sequencing

Lesson 1	Distribute handouts to students, clarify tasks as required.
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Healthy living introductory activity: student handout

Name: Class: Date:

Section 1. Healthy eating

1. What you eat gives your body the fuel and nutrients to get through the day. Like a car, if you feed your body premium fuel and meet the required amounts of kilojoules and nutrients, you are more likely to be healthy, have increased stamina and concentration, and generally feel better. The benefits are huge.

It is easy to find out if you are supplying your body with the fuel it needs for optimal performance. To calculate your daily energy and nutrient composition with the kilojoules and nutrient calculator, go to www.healthyactive.gov.au/internet/healthyactive/publishing.nsf/Content/healthy-eating-calculator, and put in the details of what you ate yesterday.

How did you go? Based on the results, what could you eat tomorrow to address any imbalances? Write the revised version in the tables below.

Breakfast	
Lunch	
Dinner	
Snacks/desserts	
Drinks	

Kilojoules	
Carbohydrates	
Protein	
Saturated fat	
Total fat	

2. Name the five food groups, the amount of recommended serves for each group, and what this group offers your body in terms of nutrition in the table below.

Children and teenagers from 12-18 years

Food group	1.	2.	3.	4.	5.	Extra foods
Recommended serves						Have no more than:
Give an example of a serving size for each group						
Name one nutritional characteristic for each group						

3. Fats certainly get bad press, but they are an essential part of the human diet, though in small quantities. When we eat more kilojoules than we need, the body stores the excess energy as fat.

The main two main types of fats which are consumed in the diet are *saturated* and *unsaturated*.

How can you distinguish the difference between them?

Unsaturated fats are broken down into 2 other categories. Name them and give 2 examples of food sources for each category?

Which fats are better for you?

Which fats are best avoided?

What is the acceptable range (%) for the intake of total fats in the diet?

4. The nutrients in foods play an important role in keeping us healthy. They each have specific jobs to do. Deficiencies and excesses in nutrients can be unhealthy and lead to illness. Next time you feel too lethargic to get out of bed, or develop yet another cold, ask yourself: am I getting all the nutrients I need to maintain good health?

Find at least 3 sources of each nutrient that you might consume as part of your normal weekly food intake. Fill in the column.

Nutrients	What does it do for you? (Health benefits)	Where can I get it? (Food sources)
Protein	This helps to keep the body strong. Protein rich food builds strong muscles.	
Iron	Iron helps to uptake oxygen in red blood cells. It also gives you energy and helps your immunity.	
Calcium	Calcium makes teeth and bones strong. Eating calcium rich food now can help protect your teeth and bones as you age.	
Zinc	This important nutrient helps you to heal when you sustain an injury. It may also help your skin to heal after an acne breakout. It is also important for immunity. Zinc can also stop you from losing your sight as you age.	
Omega-3 EPA/DHA fatty acids	Not all fats are unhealthy! Omega-3 fatty acids are essential to maintain health and support neurological growth and cognitive development. It is also important for keeping your heart, eyes, nerves and blood healthy.	
Iodine	Iodine supports thyroid function which maintains healthy growth. It also helps to keep your body at a healthy weight and is good for your brain.	
Vitamin A	Vitamin A has antioxidant properties, good for immune and reproductive function as well as healthy skin. Improves night vision.	

Contd. over

Vitamin B1 (Thiamin)	Supplies energy to the tissues and is good for nerve function.	
Vitamin B2 (Niacin)	Produces red blood cells, and makes vitamin B6 active in the body.	
Vitamin B3 (Riboflavin)	Maintains healthy skin and nerves. Breaks down and uses carbohydrates, proteins and fats. Obtains energy from food.	
Vitamin B6 (Pyridoxine)	Breaks down, uses and reforms the building blocks of proteins.	
Vitamin B12 (Cyanocobalamin)	Helps with normal nerve and blood function.	
Vitamin C (Ascorbic acid)	Helps with the absorption of iron and fights infection, supporting immunity.	
Vitamin D	Vitamin D acts to protect the body's immunity, which is its protection against sickness. It also helps to build strong muscles and bones.	
Vitamin E (Tocopherol)	Acts as an antioxidant particularly for fats, and keeps the heart, circulation, skin and nervous system in a good condition.	

Section 2. Being active

Are you a couch potato? Or are you a roller-skating star? Do you dwell so long on the sofa that your hand begins to fuse with your remote? Or do you love walking with Fido?

We've all seen the ads about finding 30 and how simple it can be. But how much exercise do you need? Is 30 enough for teenagers? You might be surprised! Check out:

[www.health.gov.au/internet/main/publishing.nsf/content/0D0EB17A5B838081CA256F9700136F60/\\$File/youth_phys.pdf](http://www.health.gov.au/internet/main/publishing.nsf/content/0D0EB17A5B838081CA256F9700136F60/$File/youth_phys.pdf)

What is the recommended daily amount of physical activity for adolescents?

Name the level of intensity required?

Think back over the last 7 days. How many times did you meet the recommended daily amount of physical activity?

What types of exercise did you do and what was the intensity of each?

Did you do enough? If not, how could you change your current routine to incorporate more exercise? If yes, how can you maintain this level of exercise throughout the different seasons?

Physical activity contributes more to our well-being than simply keeping us physically fit. It can help us to feel positive, be part of a team and having fun with friends.

Remember:

There are many indicators that you are on the right track with your nutrition and fitness. A healthy weight is just one of them. It is possible to be thin and unhealthy. Weight should not be used as the main indicator of good health. A healthy balanced diet and adequate physical activity to maintain a healthy weight are more important measures of good health.

Answer sheet for healthy living introductory activity

Section 1. Healthy eating

Students will calculate their daily energy and nutrient composition with the kilojoules and nutrient calculator.

2. Name the five food groups, the amount of recommended serves for each group, and what this group offers your body in terms of nutrition in the table below.

Children and teenagers from 12-18 years

Food group	1. Cereals (including breads, rice, pasta, noodles)	2. Vegetables, legumes.	3. Fruit	4. Milk, yoghurt, cheese	5. Lean meat, fish, poultry, nuts & legumes	Extra foods
Recommended serves	5 - 11	4	3	3	1	Have no more than 1 - 3
Give an example of a serving size for each group	2 slices of bread/1 medium bread roll/1 cup cooked rice, pasta, noodles/ 1 cup porridge/ 1 cup breakfast cereal flakes/ 1/2 cup muesli	Choose a variety: Starchy vegetables - 1 medium potato or yam/ /2 medium sweet potato/1 medium parsnip. Dark green leafy vegetables - 1/2 cup cabbage, spinach, silverbeet, brocolli, cauliflower or brussel sprouts. Legumes and other vegetables - 1 cup lettuce or salad vegetables/ 1/2 cup broad beans, lentils, peas, green beans, zucchini, mushrooms, tomatoes, capsicum, cucumber, sweetcorn, turnips, swede, sprouts, celery, eggplant, etc	1 piece medium sized fruit eg apple, orange, mango, mandarin, banana, pear, peach etc/ 2 pieces of smaller fruit eg apricots, kiwi fruit, plums, figs/ About 8 strawberries/1 cup dried pieces or canned fruit/1/2 cup fruit juice/ 1/4 medium melon (rockmelon, honeydew)/ Dried fruit eg 4 dried apricots/ 1 1/2 tablespoons sultanas/ About 20 grapes or cherries	250 ml glass or one cup of milk (can be fresh, longlife or reconstituted milk)/ 1/2 cup evaporated milk/ 40g (2 slices) of cheese/ 250ml (1 cup custard). 200g (1 small carton) of yoghurt, plain or fruit, or, as an alternative try: a cup of calcium-fortified soy milk/ 1 cup almonds/ 1/2 cup pink salmon with bones.	65-100gm cooked meat or chicken (eg 1/2 cup mince, 2 small chops or 2 slices roast meat). 80-120g cooked fish fillet, or, as an alternative try: 2 small eggs/ 1/3 cup cooked (dried) beans, lentils, chick peas, split peas or canned beans/1/3 cup peanuts or almonds.	1 medium piece of plain cake or 1 bun/ 3-4 sweet biscuits/ Half a chocolate bar/ 60g jam, honey (1 tablespoon)/ 30g potato crisps/ 1 tablespoon (20g) butter, margarine, oil / Slice pizza = 2 extras

Food group	1. Cereals (including breads, rice, pasta, noodles)	2. Vegetables, legumes.	3. Fruit	4. Milk, yoghurt, cheese	5. Lean meat, fish, poultry, nuts & legumes	Extra foods
Name one nutritional characteristic for each group	<i>Carbohydrate, iron, thiamin</i>	<i>Vitamin A (beta-carotene)</i>	<i>Vitamins, especially vitamin C</i>	<i>Calcium, protein</i>	<i>Protein, iron, zinc</i>	

*Additional table for extra information

Name one nutritional characteristic of the five food groups

Food group name	Bread, cereals, rice, pasta, noodles	Vegetables, legumes	Fruit	Milk, yoghurt, cheese	Meat, fish, poultry, eggs, nuts, legumes
Main distinguishing nutrients	<i>Carbohydrate, iron, thiamin</i>	<i>Vitamin A (beta-carotene)</i>	<i>Vitamins, especially vitamin C</i>	<i>Calcium, protein</i>	<i>Protein, iron, zinc</i>
Other significant dietary components	<i>Energy, protein, fat, fibre, magnesium, zinc, riboflavin, niacin equivalents, folate and sodium</i>	<i>Carbohydrate, fibre, magnesium, iron, vitamin C, folate and potassium</i>	<i>Carbohydrate, fibre, and folate</i>	<i>Energy, fat, cholesterol, carbohydrate, magnesium, zinc, riboflavin, vitamin B12, sodium and potassium</i>	<i>Fat, cholesterol, niacin equivalents and vitamin B12</i>

Source: Australian Guide to Healthy Eating, 1998

3. Fats certainly get bad press, but they are also an essential part of the human diet, though in smaller quantities. When we eat more kilojoules than we need, the body stores the excess energy as fat.

The main two main types of fats which are consumed in the diet are *saturated* and *unsaturated*.

How can you distinguish the difference between them?

Saturated fats tend to be solid at room temperature and unsaturated fats tend to be liquid at room temperature.

Unsaturated fats are broken down into 2 other categories. Name them and give 2 examples of food sources for each category.

Monounsaturated and polyunsaturated. Monounsaturated fats are found in olive oil, avocados, nuts and seeds. Polyunsaturated fats can be found in foods such as oily fish (sardines and tuna), soya beans and walnuts.

Which fats are better for you?

Unsaturated fats, mono and poly

Which fats are best avoided?

Trans fat

What is the acceptable range (%) for the intake of total fats in the diet?

20% - 35%

4. Find at least 3 sources of each nutrient that you might consume as part of your normal weekly food intake. Fill in the column.

Nutrients	What does it do for you? (Health benefits)	Where can I get it? (Food sources)
Protein	This helps to keep the body strong. Protein rich food builds strong muscles.	<i>Meat, fish and shellfish, and poultry.</i>
Iron	Iron helps to uptake oxygen in red blood cells. It also gives you energy and helps your immunity.	<i>Red meats – beef, lamb, veal, pork, fish, chicken and wholegrain cereals.</i>
Calcium	Calcium makes teeth and bones strong. Eating calcium rich food now can help protect your teeth and bones as you age.	<i>Milk, cheese, yoghurt, bony fish, legumes, fortified soy beverages and fortified breakfast cereals.</i>
Zinc	This important nutrient helps you to heal when you sustain an injury. It may also help your skin to heal after an acne breakout. It is also important for immunity. Zinc can also stop you from losing your sight as you age.	<i>Meats, fish, poultry, cereals, dairy foods.</i>
Omega-3 EPA/DHA fatty acids	Not all fats are unhealthy! Omega-3 fatty acids are essential to maintain health and support neurological growth and cognitive development. It is also important for keeping your heart, eyes, nerves and blood healthy.	<i>Fish (particularly oily fish) and shellfish</i>
Iodine	Iodine supports thyroid function which maintains healthy growth. It also helps to keep your body at a healthy weight and is good for your brain.	<i>Salt water fish, shellfish, seaweed, iodised salt, vegetables (if there is iodine in the soil where they are grown).</i>
Vitamin A	Vitamin A has antioxidant properties, good for immune and reproductive function as well as healthy skin. Improves night vision.	<i>Milk, cheese, eggs, fatty fish, yellow-orange vegetables, fruits such as carrots, pumpkin, mango, apricots, and other vegetables such as spinach, broccoli.</i>
Vitamin B1 (Thiamin)	Supplies energy to the tissues and is good for nerve function.	<i>Fortified breakfast cereals, baking flour, wholegrains, wheatgerm, yeast, legumes, nuts, pork.</i>

Vitamin B2 (Niacin)	Produces red blood cells, and makes vitamin B6 active in the body.	<i>Milk, cheese, yoghurt, fortified breads and breakfast cereals.</i>
Vitamin B3 (Riboflavin)	Maintains healthy skin and nerves. Breaks down and uses carbohydrates, proteins and fats. Obtains energy from food.	<i>Beef, pork, liver, beans, wholegrain cereals, eggs, cow's milk.</i>
Vitamin B6 (Pyridoxine)	Breaks down, uses and reforms the building blocks of proteins.	<i>Muscle and organ meats, fortified breakfast cereals, brussel sprouts, green peas, beans, split peas, and fruit.</i>
Vitamin B12 (Cyanocobalamin)	Helps with normal nerve and blood function.	<i>Beef, lamb, fish, veal, chicken, eggs, milk and other dairy products.</i>
Vitamin C (Ascorbic acid)	Helps with the absorption of iron and fights infection, supporting immunity.	<i>Blackcurrants, orange, grapefruit, guava, kiwi fruit, raspberries, capsicum, broccoli, sprouts.</i>
Vitamin D	Vitamin D acts to protect the body's immunity, which is its protection against sickness. It also helps to build strong muscles and bones.	<i>Sunlight on skin allows the body to produce Vitamin D. Few foods contain significant amounts however main dietary sources are fortified margarine, salmon, herring, mackerel, and eggs.</i>
Vitamin E (Tocopherol)	Acts as an antioxidant particularly for fats, and keeps the heart, circulation, skin and nervous system in a good condition.	<i>Oils and margarines, fats of meats, chicken, fish, wheat germ, spinach, cashews, peanuts, almonds, sunflower seeds.</i>

Section 2. Being active

What is the recommended daily amount of physical activity for adolescents?

60 minutes a day

Name the level of intensity required?

Moderate to vigorous intensity

4. Group activity: spatial mapping

Rationale

This minor informal assessment is designed as a group activity. It aims to establish foundation knowledge about the nutritional benefits of seafood, and knowledge about the environment, sustainability and new technologies related to the seafood industry. Ideally, this activity would follow previous nutrition and healthy eating education that situates seafood as part of a healthy diet.

Outcome 1	Outcome 2	Outcome 3	Outcome 4
Knowledge and understandings	Beliefs, attitudes and values	Self management and interpersonal skills	Health inquiry
■		■	■

Suggested duration

- 1 lesson

Advance preparation for teacher

- Ensure student access to computer with internet to watch YouTube videos

Suggested sequencing

Lesson 1	<p>Allocate small groups. Distribute resource sheet to each group.</p> <p>Groups choose and play one YouTube video from the resource list (10-15 minutes). A diverse selection should be viewed by the class. Students should make note of key points.</p> <p>Groups discuss the content. Distribute A3 paper and art supplies. Students commence making spatial maps to illustrate the key points and how they are interrelated.</p> <p>Complete spatial maps. Hand around class. Whole class goes on 'tour', with a stop at each map. The group who designed the map gives brief speech about its key points.</p>
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Resource list: nutrition and healthy eating in Australia

The Australian Guide to Healthy Eating can be found at The Department of Health and Ageing website: www.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-strateg-food-guide-index.htm

PDF Version is available from the following link:

[www.health.gov.au/internet/main/publishing.nsf/Content/E384CFA588B74377CA256F190004059B/\\$File/fd-cons.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/E384CFA588B74377CA256F190004059B/$File/fd-cons.pdf)

Centre of Excellence for Science, Seafood and Health (CESSH). 2010. 'Bounty from the Sea' handout. www.cessh.curtin.edu.au/resources/education.cfm

Seafood Services Australia (SSA). (2010).

Benefits of seafood for health. SSA. www.seafood.net.au/page/?pid=356

Seafood & health video clips. SSA. www.seafoodservices.com.au/page/?pid=403

YouTube clips of Professor Michael Crawford, Dr. Clemens von Schacky, Professor Philip Calder.

Professor Michael Crawford

Eating more seafood for good health (6:19)

Seafood and mercury: the myths (4:52)

Seafood and human nutrition (2:12)

Seafood, human evolution and health (5:14)

Seafood, pregnancy and early childhood development (4:32)

Professor Dr. Clemens von Schacky

Omega-3 index (3:25)

Protect your heart with a fish diet (3:16)

Boost omega-3 levels with fish (2:25)

Professor Philip Calder

What is inflammation and why does omega-3 relieve it? (3:55)

Omega-3 reduces risk of death, increases quality of life (3:42)

Fighting inflammation with seafood (4:01)

Promoting seafood for better health (4:51)

Short video clips (approximately 2-4 minutes each) on a range of research topics particularly focusing on sustainability, the environment and new technologies in regard to the recreational and commercial fishing & seafood industries in Australia. These can be found at the Fisheries Research and Development Corporation (FRDC) website:

Fisheries Research and Development Corporation (FRDC). (2010). Videos. www.frdc.com.au/communitypeople/videos

Fisheries Research AU Channel www.youtube.com/user/FisheriesResearchAU#g/u

Video list

Video 1	Fishing tournaments national accreditation scheme
Video 2	Moreton Bay Marine Park zoning plan in QLD
Video 3	Next generation leadership programme for recreational fishing
Video 4	Gene tagging Spanish mackerel
Video 5	Murray cod in VIC
Video 7	Australian salmon on the east coast of Australia
Video 8	Ways to increase survival of flathead across Australia
Video 9	Monitoring recreational fishing catches in WA
Video 11	The European carp eradication project in Tasmania
Video 12	The study on how fish survival after catch and release
Video 13	Didymo algal growth in New Zealand
Video 14	Prawn aquaculture on the Gold Coast, with science teams from CSIRO
Video 15	Preserving the Black Jewfish in Darwin
Video 16	Effect of the introduced species 'Sea Urchin' on the ecosystem in Tasmania
Video 17	New technology in the abalone industry in Tasmania
Video 18	Sustainable trout in Bendora Dam in the ACT
Video 19	The scallop industry at Briory Island in QLD
Video 20	Adjustments of nets reducing effect of prawn by-catch on the environment
Video 21	Combating oyster disease in Sydney with collaboration and technology
Video 22	Recreational fishing
Video 23	About FRDC - research projects for recreational and commercial fisheries

Group activity assessment sheet

Names:

Date:

1. In your group, choose and play one You Tube video from the list provided. Each group should choose a different video. Discuss the content and make notes of key points below.
2. On the A3 paper provided, draw a spatial map to illustrate these key points. Complete spatial maps. Hang around class.
3. The whole class will 'go on tour', with a stop at each map. The group who designed the map gives a brief speech about its key points. Hand in group assessment sheet

Chosen video title:

Key points:

Marking key

Displays knowledge & understanding of the chosen topic	Demonstrated limited knowledge & understanding of topic 1 mark	Demonstrated competent knowledge & understanding of topic 2-3 marks	Demonstrated excellent knowledge & understanding of topic 4-5 marks	/5
Evidence of group contribution & interaction	Limited contribution to the group 1 mark	Good contribution to the group 2 marks	Excellent contribution to the group 3 marks	/3
Organisation of key points	Poorly organised 0 marks	Well organised content 1 mark	Excellent organisation 2 marks	/2
Total				/10

5. Critical media review

Rationale

This minor assessment is designed to develop students' critical thinking skills in evaluating information in the media. It can facilitate the further development of students' critical literacy skills while providing an opportunity for demonstrating the four course outcomes.

Outcome 1	Outcome 2	Outcome 3	Outcome 4
Knowledge and understandings	Beliefs, attitudes and values	Self management and interpersonal skills	Health inquiry
■	■	■	■

Suggested duration

- 3 - 5 lessons

Advance preparation for teacher

- Print off articles for student use

Suggested sequencing

Lesson 1	<p>From teacher resources distribute articles (one per student) about seafood and nutrition. Other articles (newspaper, internet articles, women's and men's health magazines etc) can be used for variety and currency.</p> <p>Distribute and explain assessment.</p> <p>Students read and review article and start writing the review.</p>
Lesson 2	<p>Students continue working on assignment. Encourage peer editing.</p>
Lesson 3	<p>Students finish final copies of review and submit at the end of lesson.</p>



Media article references list (2002 – 2010)

1. AP. (2010, February 2). Fish oil could prevent schizophrenia: study. The West Australian. <http://au.news.yahoo.com/thewest/lifestyle/a/-/lifestyle/6750064/fish-oil-could-prevent-schizophrenia-study/>
2. Australian Associated Press. (2010, February 2). Omega 3 zinc link essential part of 'Alzheimer's-proofing' brain, says scientists. Adelaide Now. Retrieved from www.adelaidenow.com.au/news/breaking-news/omega-3-zinc-link-essential-part-of-alzheimers-proofing-brain-says-scientists/story-e6frea73-1225825929578
3. Batcheler, A. (2010, January 7). Boost your diet with seafood: study. The West Australian. Retrieved from <http://au.news.yahoo.com/thewest/lifestyle/a/-/health/6651483/boost-your-diet-with-seafood-study/>
4. Cresswell, A. (2009, January 15). Fish oil cuts risk of mental delay in early babies. The Australian. Retrieved from www.theaustralian.com.au/news/fish-oil-cuts-babies-health-risk/story-e6frg6p6-1111118566519
5. Pountney, M. (2008, June 10). Fish is good for you, see. Herald Sun. Retrieved from www.heraldsun.com.au/news/victoria/fish-is-good-for-you-see/story-e6frf7kx-1111116586003
6. Salleh, A. (2002). More good oil on Australian fish. ABC Science. Retrieved from www.abc.net.au/science/articles/2002/05/13/553045.htm
7. Steenhuisen-Reuters, J. (2009, July 13). Omega-3 no match for Alzheimer's. ABC Science. Retrieved from www.abc.net.au/science/articles/2009/07/13/2624074.htm
8. Steffens, M. (2006, July 20). Omega-3. ABC: Catalyst. Retrieved from www.abc.net.au/catalyst/stories/s1691896.htm
9. Rose, D. (2010, February 2). Omega-3 protects brain from Alzheimer's. The Sydney Morning Herald. Retrieved from <http://news.smh.com.au/breaking-news-national/omega3-protects-brain-from-alzheimers-20100202-nabw.html>
10. Sikora, K. (2009, May 19). ADHD can be treated with Omega-3 found in fish oil. The Daily Telegraph. www.dailytelegraph.com.au/lifestyle/news/adhd-can-be-treated-with-omega-3-found-in-fish-oil/story-e6frf00r-1225713253881
11. Warner, J. (2007, April 18) Omega-3 fatty acid slows Alzheimer's. WebMD. Retrieved from www.webmd.com/alzheimers/news/20070418/omeg-3-fatty-acid-slows-alzheimers

Assessment sheet for media review

Name: _____

Date submitted: ___/___/___

Write a critical review about the article that you have been given. Make sure you include the following points:

When was the article published?	/ ½ mark
Where was the article sourced from?	/ ½ mark
Who wrote the article?	/ 1 mark
What is the article about?	/ 4 marks
Does the article convey a positive or negative message about the topic? Why do you think it has adopted this view?	/ 4 marks
Do you agree with the viewpoint maintained by the article? Why or why not?	/ 5 marks
Go to three more websites from the website list below and source further information about your topic. Does the information from the website match the article? Does this change your understanding of the topic? If so, how?	/ 5 marks
Total marks:	/20

Websites:

Centre of Excellence for Science, Seafood and Health
www.cessh.curtin.edu.au

Naturaliste Marine Discovery Centre
www.nmdc.com.au

Australian Seafood Cooperative Research Centre
www.seafoodcrc.com

Seafood Services Australia
www.seafoodservices.com.au

Department of Fisheries Western Australia
www.fish.wa.gov.au

Seafood Experience Australia
www.australianseafood.com.au

Fisheries Research Development Corporation
www.frdc.com.au

West Australian Fishing Industry Council
www.wafic.org.au

Useful site for evaluating web information: www.lib.vt.edu/instruct/evaluate

6. Health survey: fish and seafood consumption at school

Rationale

This exercise enables students to actively engage with research principles in health, physically and mentally moving them beyond the classroom.

Outcome 1	Outcome 2	Outcome 3	Outcome 4
Knowledge and understandings	Beliefs, attitudes and values	Self management and interpersonal skills	Health inquiry
■	■	■	■

Suggested duration

- Approximately 3 - 5 lessons

Advance preparation for teacher

- Organise access to other classes at the school, for students to undertake surveys during Lesson 2. Ideally, each pair could interview a different class in the school and different year levels.

Suggested sequencing

Lesson 1	Distribute handout and explain assessment and rubric. Allocate pairs and students design survey.
Lesson 2	Students perform survey.
Lesson 3	Students write up brief report with tables, graphs and/or charts.



Student handout (attach to report and copy of survey for submission)

Health survey: fish and seafood consumption at school

Name(s):

Date submitted:

Create a survey to find out information about seafood consumption at your school. Some areas for investigation include how much seafood is being consumed; what type; if it is not consumed, the reason why; etc.

In pairs:

- Develop a survey with 6-8 questions
- Survey 30 students
- Collate and analyse the results
- Present them as a one page report with a table and a graph or chart

Survey format:

- Keep it simple, one or two pages at the most
- It must include a purpose
- Use common language
- Avoid difficult questions
- Avoid double barrelled questions - make sure you are only asking one question at a time
- Put the questions in a logical order

Teacher marking rubric: survey

Criteria	Excellent (3 marks)	Good (2 marks)	Fair (1 mark)	Poor/incomplete (0 marks)
Survey well designed following required format				
Survey delivered professionally				
Report clearly outlines survey purpose and findings				
Table and graph or chart are accurate and neat				
Additional comments:				
Total marks:				

Example survey/questionnaire

Would you please spare a minute to respond to our survey? We are from (class) and we are interesting in finding out the viewing trends of cinema watching at our school.

Gender	Male / Female (circle one)
Age	
Post code	
1. How often do you go to a cinema? (Please choose one)	
More than once a week	
Once a week	
Once a fortnight	
Once a month	
Occasionally	
Never	
2. What genre of film do you enjoy most? (Please choose one)	
Comedy	
Romantic comedy	
Drama	
Horror	
Action	
Thriller	
Documentary	
Other (please state)	
3. Which cinema do you visit most frequently?	
4. Why do you prefer this cinema? (You may choose more than one answer)	
Close to my house	
Facilities	
Candy Bar	
Customer service	
Seats	
Screen	
Other (please state)	

Thank you for participating in our survey.

Remember, your survey needs to have 6-8 questions on it!

7. Presentation and fact sheet

Rationale

This assessment is designed to develop student's critical thinking skills in evaluating information in the media. It can facilitate the further development of students' critical literacy skills while providing an opportunity for demonstrating the four course outcomes. The peer evaluation element helps to enhance students' metacognitive capacities as, through peer evaluation; students learn the tools for self evaluation.

Outcome 1	Outcome 2	Outcome 3	Outcome 4
Knowledge and understandings	Beliefs, attitudes and values	Self management and interpersonal skills	Health inquiry
■	■	■	■

Suggested duration

- Approximately 8 lessons

Advance preparation for teacher

- Ensure student access to computer with internet to perform research

Suggested sequencing

Lesson 1	Allocation of pairs (or groups of 3 or 4). Give students handouts and instructions. Go over rubrics to ensure the assessment criteria are fully understood. Brainstorm topics and presentation types. Pairs choose topic, one pair per topic.
Lessons 2-4	Research time (computer and library) and student time to develop presentations.
Lesson 5-7	Presentations & peer assessment.
Lesson 8	Feedback session.



Topics for presentation and fact sheet

1. Benefits of seafood/omega-3s for health
 - Diabetes
 - Asthma
 - Heart disease
 - Arthritis
 - Cancer
 - ADHD
2. Omega-3 and mental health
3. Seafood and maternal health
4. Seafood and beauty- antioxidants and coenzyme Q10
5. Seafood and development of the brain
6. The benefits of fish for teenagers
7. What's better for you- fish oil capsules or fish?
8. The history of sushi
9. Seafood industry in Australia
10. Recreational fishing
11. Commercial fishing (choose one)
 - Prawn industry
 - Scallop industry
 - Oyster industry
 - Lobster industry
12. Indigenous fishing practices in Australia from past to present
13. Seafood industry in another country (choose one)
 - Japan
 - Asia
 - Africa
 - America
 - Europe
 - United Kingdom
14. Sustainable fishing
15. Australian aquaculture



Presentation and fact sheet handout

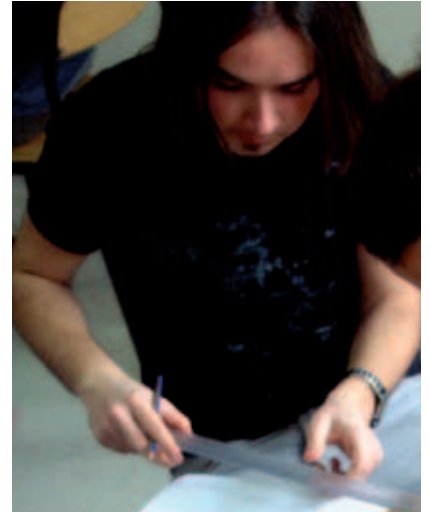
Prepare and deliver a 5 minute oral presentation about a seafood related topic. Visual resources should be used to support your presentation (e.g. PowerPoint, posters).

Produce a single-sided A4 seafood fact sheet for distribution after your presentation. The target group for the fact sheet is young people (adolescents 12–18 years). Consider what the target audience would benefit from knowing about the topic you have researched.

Sample resources:

The Smarter than Smoking project fact sheets are designed for a student audience. These can be found at:
www.oxygen.org.au/resources/fact-sheets

The Cancer Council fact sheets are designed for a professional audience (i.e. general practitioners and other health professionals). These can be found at:
www.cancer.org.au/Healthprofessionals/patientfactsheets.htm



Presentation and fact sheet cover page

Attach this cover page to your A4 fact sheet and submit it to your teacher prior to delivering your presentation.

Name(s):

Date of presentation:

Teacher marking rubric: presentation

Criteria	Excellent (3 marks)	Good (2 marks)	Fair (1 mark)	Poor/ incomplete (0 marks)	
Speaking is clear and understandable without 'reading off'					
Visual resource contributes to the oral presentation					
Appropriate language for target audience and presentation context					
Sequence, combination and relevance of information for target audience					
Presentation is engaging and interesting					
Additional comments:					
				Total marks:	

Teacher marking rubric: fact sheet

Criteria	Excellent (3 marks)	Good (2 marks)	Fair (1 mark)	Poor/ incomplete (0 marks)	
Appealing format (graphics, font, layout)					
Appropriate language for target audience					
Sequence, combination and relevance of information for target audience					
Further relevant contact information included					
Additional comments:					
				Total marks:	

Peer assessment

You will need to assess another group's presentation individually and submit your assessment to your teacher. Use this rubric to evaluate the presentation.

Your name:

Group you evaluated:

Date of evaluation:

Peer marking rubric: presentation

Criteria	Excellent (3 marks)	Good (2 marks)	Fair (1 mark)	Poor/ incomplete (0 marks)
Speaking is clear and understandable without 'reading off'				
Visual resource contributes to the oral presentation				
Appropriate language for target audience and presentation context				
Sequence, combination and relevance of information for target audience				
Presentation is engaging and interesting				
Additional comments:				

8. References

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Agencies and websites

Australian Seafood Cooperative Research Centre
www.seafoodcrc.com

Centre of Excellence for Science, Seafood and Health
www.cessh.curtin.edu.au

Curriculum Council
www.curriculum.wa.edu.au

Department of Education Western Australia
www.det.wa.edu.au/education

Department of Fisheries Western Australia
www.fish.wa.gov.au

Diabetes WA
www.diabetesaustralia.com.au

Fisheries Research Development Corporation
www.frdc.com.au

Food Standards Australia and New Zealand
www.foodstandards.gov.au

Heart Foundation
www.heartfoundation.org.au

Naturaliste Marine Discovery Centre
www.nmdc.com.au

National Health and Medical Research Council
www.nhmrc.gov.au

Seafood Experience Australia
www.australianseafood.com.au/home

Seafood Services Australia
www.seafoodservices.com.au

West Australian Fishing Industry Council
www.wafic.org.au

Extra curricula activities

New South Wales

Sydney Aquarium
www.sydneyaquarium.com.au

Northern Territory

Aqua Scene
www.aquascene.com.au

Indo Pacific Marine
www.indopacificmarine.com.au

Queensland

Queensland Maritime Museum
www.maritimemuseum.com.au

Maritime Museum of Townsville
www.townsvillemaritimemuseum.org.au

South Australia

Marine Discovery Centre
www.marinediscoverycentre.com.au

Tasmania

Seahorse World
www.seahorseworld.com.au

Victoria

Melbourne Museum
www.museumvictoria.com.au/melbournemuseum

Melbourne Aquarium
www.melbourneaquarium.com.au

Queen Victoria Markets - School group tours
www.qvm.com.au/school_group_tours.aspx

Western Australia

Naturaliste Marine Discovery Centre
www.nmdc.com.au

Kailis Bros. - Fish Market Tours
www.kailisbrosleederville.com.au

The Aquarium of Western Australia
www.aqwa.com.au/main.asp

Western Australian Maritime Museum
www.museum.wa.gov.au/maritime