

Module One

Good Health for Driving

The relationship between stress, fatigue, health and driving



Aim

The aim of this module is to give students knowledge about the causes and symptoms of stress and fatigue and the effect these can have on driving. Students will develop strategies for managing stress, the onset of fatigue and personal health.

Learning Outcomes

At the end of this module students will be able to:

- describe physical and non-physical symptoms of stress and explain how these might affect driving;
- describe physical and non-physical symptoms of stress and explain how these might affect driving;
- describe the causes of driving related and non-driving related stress and suggest ways of managing these;
- describe the causes of driving related and non-driving related fatigue and describe techniques for avoiding the onset of fatigue;
- explain what constitutes good health and describe the benefits in terms of driving.

Standard

This module of work is designed to meet the requirements of:

Standard 1734 *Core Driving Knowledge and Skills* Version 6
Demonstrate knowledge of stress, health and fatigue for driving
Level 2
Credit 3

The Standard setting body for this unit standard is Tranzqual, the Transport and Logistics Industry Training Organisation. A student workbook and assessment material for this unit standard can be downloaded from: <http://www.tranzqual.org.nz/downloads.php>
Enter the Core Driving Material as the category and the number of the unit standard into the keywords area. If your school is not currently accredited to assess this unit standard contact Tranzqual on 0800 478 257 for advice on the best option for your school.

Links with the New Zealand Curriculum

Curriculum links for Drive Qual have been aligned with the New Zealand Curriculum Framework 2006.

Health and Physical Education

- **The Concepts**

Hauora - the four dimensions of well-being

Attitudes and Values - a positive, responsible attitude on the part of students to their own well-being and the well-being of others

- **The Strands**

Personal Health and Physical Development

- **Sub-strand**

Safety Management Level 5, 6 and 7

Teacher Notes

- 1 *Weekly Activity Chart* - it will be important to remind students at intervals before Lesson 5 about completing their charts. A sample has been provided on Copsheet 2 which can be used for the analysis by students who have not completed their own chart.
- 2 A Student Workbook is available for this Standard. You could ask students to complete segments of this for homework. Alternatively, you could ask them to keep a Journal for recording purposes.
- 3 The Official New Zealand Road Code is available from book stores or online.

Pre Knowledge and Experience

Individual students will bring a range of existing knowledge and experience to this module of work. This will have been gained from a range of sources which could include:

- Own experience of stress and fatigue
- Work done in Health and Physical Education throughout schooling
- Social marketing, advertising campaigns
- Other Police Youth Education Service **Road Safe Series** programmes
- The ACC Wake Up programme
- Parental modelling
- Defensive driving or pre driving education
- Licensing system
- Discussions with peers

Overview

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Teaching

Lesson One

What do I do in a week?

Resources

CD Advertisement *Microsleep with Dr Karl Kruszelnicki*

Roads and Traffic Authority New South Wales

Copysheet 1 *Weekly Activity Chart Template - enlarged to A3*

Copysheet 2 *Weekly Activity Chart Sample*



Activities

- Show students the advertisement *Microsleep*

Ask students to share the main message they got from the advertisement with a partner. Ask some pairs to share their messages.

Put the words *Stop, Revive, Survive* on the board.

Ask: *What are the signs that tell the driver they should stop?*
What are some things they could do to revive, or get over the tiredness?
Why do you think more drivers don't follow this advice?
- Explain to students that they are starting some lessons about fatigue and stress and how these can affect driving. They will be learning some strategies to manage stress and fatigue, and also looking at general good health. First they are going to find out just what they do in a week to see how well they are managing their health and stress levels, which in turn affects driving. They will consider exercise, diet, rest, quality sleep and injury avoidance. Give each student **Copysheet 1** *Weekly Activity Chart Template, enlarged to A3*. Go over it and explain that each student will be recording their activities for a week, using the key at the bottom of the chart. They can use more than one colour in any hour. Ask students to begin by completing the current day. Students will bring the completed charts on Lesson 5.

Lesson Two

How do I know if I am suffering from stress or fatigue?

Resources

Copysheet 3 *Symptoms of Fatigue* - cut up into separate cards

Copysheet 4 *Symptoms of Stress*

Large sheets of paper and felt pens

Strips of paper



Activities

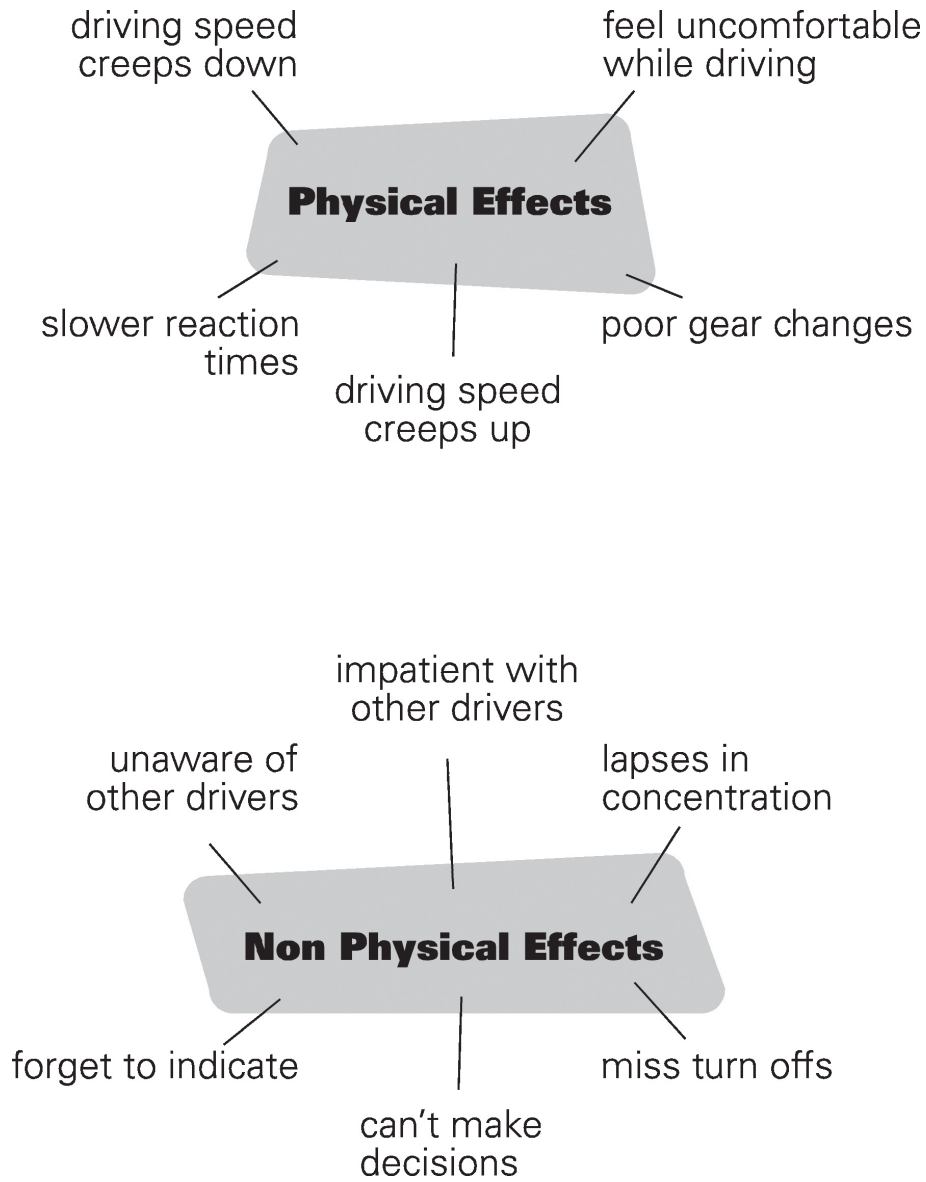
- Check students' understanding of stress and fatigue.

Stress - mental, emotional or physical strain or tension that affects your well-being and your ability to carry out tasks.

Fatigue - feeling really 'tired', "sleepy" or "exhausted". This is most likely due to lack of sleep, but could also be caused by an illness or from lots of mental or physical activity.

Give examples of times that you have experienced stress and fatigue. Ask if any students can share times when they were stressed or fatigued.

- Put students into groups of about 4 or 5. Ask each group to make two headings on strips of paper- one is PHYSICAL and the other is NON-PHYSICAL. Give each group a set of cards made from **Copysheet 3** *Symptoms of Fatigue*. Explain that each card is a symptom of FATIGUE. Some of them are physical symptoms, that is the way fatigue affects the body and how it functions, for example yawning. Some of the symptoms are non-physical, that is the way that fatigue affects the mind, for example daydreaming. The group places each symptom under the heading they think it best fits. Some blank squares have been included so that students can add extra symptoms if they want to.
Either: Check each groups' results for accuracy as you walk round the room.
Or: Go over the answers using Copysheet 3.
- Put students into pairs. Give each pair **Copysheet 4** *Symptoms of Stress*. Ask students to complete the task by deciding which of the symptoms are physical and which are non-physical. Go over the answers, as given below:
Answers: Headaches **P**, Shortness of breath **P**, Confused **NP**, Depressed **NP**, Sweaty palms **P** Tight muscles **P**, Indigestion **P**, Fatigue **P**, Anxious **NP** Emotional **NP**, Lack of concentration **NP**, Poor judgements **NP**, Nausea **P**, Skin breakouts **P**, Negative self talk **NP**, short tempered **NP**.
- Ask each pair to join with another pair, making a group of four. Give each group two large sheets of paper and felt pens. They make two diagrams like the ones on the next page to show how symptoms of stress and fatigue can affect driving. One diagram is concerned with physical symptoms and the other with non-physical. Diagrams could be displayed for sharing.



Homework

If students are using the Student Workbook they could complete some tasks.

Lesson Three

What causes stress and fatigue?

Resources

Copysheet 5 Story

Large sheets of paper and felt pens.

Reference - The Official New Zealand Road Code Section *About Limits* for information about driver fatigue.



Activities

- Give each student Copysheet 5. Read the story to them. As the story is read, ask them to underline things that are causing the drivers stress in green and things that are causing the drivers fatigue in red. In some groups it may be helpful to stop after each 'cause' and prompt students with questions.

Each student then joins with a partner. Ask them to look at all the causes of stress that are underlined in green. They decide which are **Driving Related** and which are **Non-driving Related**. They record their findings in a chart like the one below. They then do the same for the causes of fatigue underlined in red. Students can add examples of their own to the chart, making sure that there are 3 causes in each category. Completed charts can be displayed.

Causes of Stress (GREEN)		Causes of Fatigue (RED)	
	Driving Related		Driving Related
1	Heavy rain	1	Hard to see in the dusk; some vehicles with lights on and some not
2	Trying to keep up with Dad	2	Driving such long hours
3	Road works at the roundabout	3	Tiring driving a big rig
4	Brett's car doesn't have enough power to pass	4	
5	Other cars not signalling	5	
6	Brett is inexperienced and starts to make mistakes and panic		
7			
8			
	Non-driving Related		Non-driving Related
1	Grandad is sick	1	Baby is teething and keeps Shontelle awake at night
2	Having young children in the car	2	End-of-exam party and hang over
3	Argument with Joe	3	Getting up early to deliver leaflets
4	Being away from home and the children for long periods	4	Been studying hard
5	Has to deliver a load by 10pm and then drive home	5	
6	Nathan playing with the radio and passing the yoghurt	6	
7			
8			

- Re-group students. Each group chooses one of the causes of driving related stress from the displayed charts, for example distraction from other passengers. They either prepare a short role play or write a scenario to illustrate this. Each group in turn performs their role play or reads their scenario to the class. The class must :

- a) Decide what cause of driving related stress is being illustrated;
- b) Come up with some ways of managing this stress.

Record all the techniques given on the board under a heading *Ways of managing driving related stress*. Students can record these in their Journals if appropriate.

- Tell students about a time when you didn't get a good night's sleep, that is quality sleep, and the reason for this. Ask students to turn to a partner and tell them about a time they didn't have a good quality sleep. Each pair then joins another pair and they share their experiences. Take reports from groups. Reasons could be recorded on the board. These might include such things as: too cold, feeling sick, bed uncomfortable, woken up by the cat, had coffee before going to bed, hyped up because of eating sugary foods, a lot of noise. Talk about things that we can do to overcome these things and get a better night's sleep. This is called **sleep quality management**, for example
 - going to sleep at a regular time
 - making sure the bed and room are comfortable
 - limiting coffee and sugary foods
 - using ear plugs



Homework

Students complete the relevant section of the Student Workbook.

Lesson Four

Managing Fatigue

Resources

Copysheet 6 *Fatigue Scenarios*

Copysheet 7 *The Fatigue Action Plan*

Reference - The Official New Zealand Road Code Section *About Limits* for information about driver fatigue.



Activities

- Put students into groups of 4. Give each group one of the scenarios taken from Copysheet 6 and the *Fatigue Action Plan* taken from Copysheet 7. The group reads the scenario and completes the *Action Plan* to show how to manage fatigue.
- As each group finishes they can be given another scenario to work on. Ask each group to report back on one scenario, making sure that all are covered. The other groups can add strategies they think the group reporting back has missed.
- Work with the class to make a summary statement about managing fatigue.

Homework

Students complete the relevant section of the Student Workbook.

Lesson Five

Personal Health Management

Resources

Students individual *Weekly Activity Charts*

Copysheet 2 *Weekly Activity Chart Sample*

Copysheet 8 *Analysis Checklist*

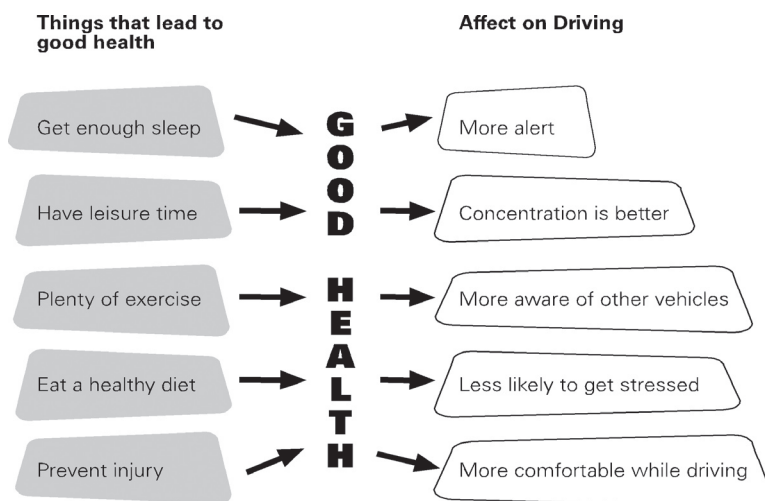


Activities

- Give students 10 minutes to complete their *Weekly Activity Charts*. Students without charts can be given Copysheet 2 and asked to make themselves familiar with it. Explain that over this period of time they have been listing all the activities that are important for a balanced healthy life - that is getting enough sleep, having leisure time and exercise, eating a healthy diet and trying to prevent themselves getting injured.
- Each student does a self analysis of the *Weekly Activity Chart* using the Checklist on Copysheet 8. This involves:
 - a) Giving themselves a score for each of exercise, diet, rest, injury prevention and good quality sleep.
 - b) Suggesting three techniques they could do to improve their ratings for each of exercise, diet, rest, injury prevention and sleep quality management.

Ask: *Who found that they were leading healthy well balanced lives - that is managing their personal health well?*

Who would like to make some improvements to their personal health management?
- Work with students to complete a diagram like the one below to show how good health can affect driving.



Homework

Students complete the Student Workbook.

Weekly Activity Chart Template

	12	1	2	3	4	5	6	7	8	9	10	11
Day 1 am												
Day 1 pm												
Day 2 am												
Day 2 pm												
Day 3 am												
Day 3 pm												
Day 4 am												
Day 4 pm												
Day 5 am												
Day 5 pm												
Day 6 am												
Day 6 pm												
Day 7 am												
Day 7 pm												

KEY

Leisure = Yellow

Good Quality Sleep = zzzz

Serving of fruit or vegetables = Green

Broken Sleep = #####

Study = Blue

Exercise = Red

Travel = Purple

Rest = Pink

X = when you have done something risky to your health eg not wearing a cycle helmet

a = when you have done something to help avoid injury eg worn a safety belt

Weekly Activity Chart Sample

	12	1	2	3	4	5	6	7	8	9	10	11
Day 1 am	# # #	# # #	z z z	z z z	z z z	z z z	z z z	z z z	z z z	a		
Day 1 pm						x					z z z	z z z
Day 2 am	z z z	z z z	# # #	# # #	z z z	z z z	z z z	z z z	z z z			
Day 2 pm											z z z	z z z
Day 3 am	z z z	z z z	z z z	z z z	z z z	z z z	z z z	z z z	z z z	z z z	z z z	
Day 3 pm					x							
Day 4 am	z z z	z z z	z z z	z z z	z z z	z z z	z z z	z z z	z z z	z z z	z z z	
Day 4 pm			a	a	x						z z z	z z z
Day 5 am	z z z z	z z z	z z z	z z z	z z z	z z z	z z z	z z z	z z z			
Day 5 pm					a	a					z z z	z z z
Day 6 am	z z	z z	z z	z z	z z	z z	z z	z z z z				
Day 6 pm											z z z	z z z
Day 7 am	z z	z z	z z	z z	z z	z z	z z					
Day 7 pm					a	a					z z z	z z z

KEY

Leisure = Yellow



Good Quality Sleep = zzzz

Serving of fruit or vegetables = Green



Broken Sleep = #####



Study = Blue



Exercise = Red



Travel = Purple



Rest = Pink



X = when you have done something risky to your health eg not wearing a cycle helmet

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Symptoms of Fatigue

Note: For teacher reference the symptoms on the left are physical and the ones on the right are non-physical



Yawning	Daydreaming
Sore or heavy eyes	Feeling irritable
Slower reaction times	Unaware of time
Blinking a lot	Unable to concentrate
Slower reaction times	Feeling hypnotized (white line fever)
Stiff and having cramps	Not thinking clearly
Driving poorly, for example poor gear changes	Forgetting where you are going or how to get there
Nodding off to sleep (microsleeps)	Can't remember what you were going to say
Light-headedness	Forgetting to indicate

Symptoms of Stress

Complete the chart below by putting a **P** or **NP** beside each symptom of stress.

P = Physical NP = Non-physical (mental).

Add three symptoms of your own and mark them **P** or **NP**.

Symptoms of Stress	Physical or Non-Physical
Headaches	
Shortness of breath	
Confused	
Depressed	
Sweaty palms	
Tight muscles	
Indigestion	
Fatigue	
Anxious	
Emotional	
Lack of concentration	
Poor judgement	
Nausea	
Skin breakouts	
Negative self talk	
Short tempered	



Story: Truck meets Car

By Janice Marriott

Grandad is in hospital and the whole family has to go, 4 hours up Highway One, to the city. But they can't all fit in the family car.

"Brett. You got your full licence, eh? You can drive Kimi's car, and take some of the little'uns."

"Sweet as, Dad."

So Brett is the hero.

It had seemed a good idea at lunchtime, but now it is dusk, pouring with rain, and the twins are in the back and little Nathan is strapped in the front passenger seat, annoying Brett. Brett is trying to follow Dad's rear lights but, near the city now, other cars keep overtaking and getting in between them.

Coming the other way is Shontelle, a truck driver. She's fuming at a road works by the roundabout, her fingertips scratching on the steering wheel. She's got a load to deliver by 10 pm and then drive back home. She's thinking about the argument she and Joe had last night: O.k. He's right. I am driving too much, and it's hard for him looking after the kids. I'm away every afternoon and evening. But -

She yawns. The baby's teething and Shontelle hasn't had much sleep. She yawns again and revs up, ignores the drenched guy in the orange parka with the Go sign and roars off into the rain onto the open road at last.

Brett yawns. He's tired from an end-of-exams party last night and still shaking off a hang over. But the party was well deserved. Brett works before school every day delivering leaflets, and he's been studying hard out for weeks. His eyes feel itchy. In the dusk some traffic has lights on. Some doesn't. There's a huge truck, with two containers, one on the truck deck and one on a trailer, between him and Dad's car now.

"Leave the radio alone, Nathan!"

Oncoming trucks, with thick, white spray around their tyres, make it hard for Brett to see the centre line.

"Great! There's a passing lane."

Brett tries to overtake the truck and trailer on a steep hill. He drives alongside the container, into the blinding spray the truck's back wheels are pumping off the wet road. He can't see a thing. He turns the windscreen wipers faster. Damn! He's turned on the indicator by mistake! He's slowed down. He has to change gears. The 4WD behind toots. He gets muddled and starts to panic.

On the other side of the highway, further ahead, truckie Shontelle is now angry at the driver of a Starlet in front of her that pulled over and stopped without signalling. Shontelle steers round the car, and stays closer to the centre line than she'd normally be. She's still thinking about her kids and Joe's bad mood last night. Her practised foot hovers over the brake pedal as her truck gains speed heading down the big hill.

Brett is leaning forward in his seat but that's not going to get him up the hill. He's level with the big truck's cab now. His foot's flat to the floor but this old car hasn't got any grunt and its taking ages to overtake the truck.

"Open this!" Nathan suddenly thrusts a yoghurt at Brett.

"No!" yells Brett.

Nathan stabs the radio on, loud. A guitar squeals out of the speakers. Brett's hands jump on the wheel then he jerks the wheel sideways, away from the truck he's trying to overtake. Too much! He's now looking straight into the headlights and grill of Shontelle's Mack.

The guitar squeal turns into the squeal of Shontelle's brakes, Brett's brakes, and Nathan's scream.

Fatigue Scenarios

Scenario 1 **New Parent**

Bob and Linda's new baby is just three months old. She is still waking at regular intervals throughout the night for a feed. Although Linda gets up to the baby, Bob wakes up too and then finds it really hard to get back to sleep. He can't get to bed early either, as he's got a lot on at work and has to do paper work until about 11.30pm each night. He doesn't know it, but he is suffering from sleep debt - he just can't catch up all the sleep he has lost. Today he has to drive two hours to Wanganui for a meeting. He wakes up a bit late and doesn't have time for breakfast - he'll grab a burger somewhere on the way if he gets time. The sun is in his eyes as he is driving and he finds himself almost nodding off to sleep once or twice. But he has to keep going or he'll be late.



Scenario 2 **Skier**

Katie's looking forward to a weekend on the mountain. She's going up with a friend, Tony, but they are going in her car. They get away about 9pm on Friday night, a bit later than they had hoped, but they stopped for a quick drink with some mates. Katie is feeling quite tired as she was out on both Wednesday and Thursday nights. Before long Tony drops off to sleep, snoring gently. This makes Katie feel even more tired. She cranks up the heater as it is getting pretty cold. She's pleased they brought some snacks as she didn't really have a meal earlier, and she eats her way through a bag of chips. By now it is really dark and visibility isn't good. Katie is blinking a lot and yawning. She'd like to stop for a bit, or get Tony to drive, but she needs to make up a bit of time. They have to get to the lodge tonight so they can get in a full day's skiing tomorrow.

Scenario 3 **Nurse**

John is a nurse at a big public hospital. He works shifts and at the moment starts at 10pm and works until 6am. He is finding it really hard to sleep in the day time. His wife is at home with the little ones and he can hear all the noise from the bedroom. There always seems to be someone mowing the lawns or building something. Sometimes when he gets up he feels more tired than when he went to bed. He is too busy to get any regular exercise, which makes him feel really unfit. He drives himself to work. One of the perks of the job is free parking. It has been a really busy shift - not even time to take a proper coffee or meal break. John is exhausted by time he finishes work. He gets into the car to drive the 8kms home. He is yawning and forgets to indicate as he makes a turn. The urge to fall asleep is almost overwhelming.

Scenario 4

Teenager

Shane leads a pretty busy life. He has recently started a new job as a plumber's apprentice. He has to drive the works van, so it is just as well that he has just got his Restricted Driver Licence. He has to get up really early, which he didn't have to do while he was at school, and the days are really long and hard. He is pretty exhausted by knock off time. He is also finding it a bit hard to juggle his social life. He has a great group of friends and they go out a lot, often to the pub or clubbing. He knows that he is drinking too much, but doesn't want to be left out. And it's hard to go home before everyone else, so he is often not getting anywhere near 7 hours sleep a night. He used to be able to sleep in on Saturday for as long as he likes, but now he works on Saturday!

This Saturday is especially hard. Shane got to bed at 4am and feels really hung over. He needs to get some sleep - and soon! The boss has sent him back to the depot to pick up more supplies. He isn't concentrating and nearly hits a car turning in front of him.

Scenario 5

Truck Driver

Luke drives an articulated truck for a big distribution company. It is shift work and at present he is driving long distances on the night shift. Work has become Luke's life of late. There is no time for seeing his family or friends, and he has had to give up playing rugby as he just doesn't have the time. He is putting on weight and feels sluggish. Luke can't remember when he last had a proper meal - it is usually a fry up at an all night cafe.

It is 3am. Luke is yawning and finding it hard to keep focussed on the road ahead. A car approaches with its lights on full and Luke loses concentration completely and the truck swerves violently.

Scenario 6

Taxi Driver

Maureen is a taxi driver in a big city. Last night she worked the late shift - 6pm to 3am. Her husband is also a taxi driver and they share the same cab. It is 6am and her husband rings her to say he is too sick to go to work and asks Maureen to fill in. She is very tired and doesn't want to do this, but they need to keep the taxi on the road.

She is feeling more tired than usual. Maureen doesn't sleep well when she is on the late shift and has been working late shift for the last three nights. She gets a fare to the airport and then ends up sitting in the car in the car park for an hour, yawning her head off. She eventually gets a good fare, a 20km trip, but gets caught in the morning rush hour traffic on the way and the passengers are upset that they are late. After finally dropping them off she needs to make her way back to the airport for another fare. She hopes she'll manage to stay awake.

Fatigue Action Plan

Stopping the Onset of Fatigue

List at least 3 non-driving activities the person could do to make sure they do not get fatigued, for example making the bedroom really dark and quiet.



Delaying Fatigue while Driving

List at least 3 things the person could do while driving to stop the start of fatigue eg getting fresh air



Reducing the Effects of Fatigue

List at least three things the person could do to stop the effects of fatigue on their driving eg play music



What to do if still Fatigued

List three things the person could do if they have been unable to stop the effects of fatigue eg seek medical help



Analysis Checklist

For this analysis you will need to look carefully at the way that you have coloured your Weekly Activity Chart so that you can find out if you are managing your personal health well. Standards have been given in the chart below. Use the score sheet to see how well you are managing in each area.

Complete the chart at the bottom of the page by suggesting two things you could do to improve your own exercise, diet, rest and injury prevention.

Score Sheet

For each standard give yourself one point for each day you met the standard. Add up your score for each standard and rate yourself using the ratings below

6-7 well done 4-5 good 0-3 poor

Good Health Management Standards

Exercise Standard	Diet Standard	Good Quality Sleep	Injury avoidance Standard	Rest
You should have 30 minutes of exercise everyday	You should have 5+ servings of fruit or vegetables a day	You should have 8 hours sleep a day	You should have done at least one thing each day to avoid injury	You should have some times in the day when you are resting
Your Score	Your Score	Your Score	Your Score	Your Score

Things I want to change to improve my health

Exercise Improvements	Diet Improvements	Sleep Quality Management	Injury Avoidance Improvements	Rest
eg walk instead of getting the bus • •	eg eat breakfast everyday • •	eg get to bed a bit earlier • •	eg use the pedestrian crossing • •	eg set times aside to relax and do nothing • •